

12th



BAFPRAS
BALKAN FEDERATION OF
PLASTIC RECONSTRUCTIVE
AND AESTHETIC SURGERY
SOCIETIES



**TURKISH SOCIETY
OF PLASTIC RECONSTRUCTIVE
AND AESTHETIC SURGEONS**
1961



**SELÇUK
UNIVERSITY**
KONYA - 1975

BAPRAS CONGRESS

Selçuklu Convention Center
Konya, TÜRKİYE

2023

13 September Pre Congress Course
14 - 15 - 16 September Congress

www.balkanplasticsurgery.org



FULL TEXT BOOK



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center **Konya, TÜRKİYE**

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

COMMITTEES

Honorary Board

Albin Stritar, *Slovenia*

Alexandru Georgescu, *Greece*

Ali Barutçu, *Türkiye*

Alija Agincic, *Bosnia and Herzegovina*

Daniel Yankov, *Bulgaria*

Dimitar Evstatiev, *Bulgaria*

Güler Gürsu, *Türkiye*

Ioan Lascar, *Romania*

İbrahim Yıldırım, *Türkiye*

Jefta Kozarski, *Serbia*

Konstantinos Manos, *Greece*

Mario Zambelli, *Croatia*

Milomir Ninković, *Germany*

Nedim Savacı, *Türkiye*

Radmillo Roncevic, *Serbia*

Rado Zic, *Croatia*

Reuf Karabeg, *Bosnia and Herzegovina*

Sanela Halilagic, *Bosnia and Herzegovina*

Smilja Tudzarova, *North Macedonia*

Uros Ahcan, *Slovenia*

Yuri Anastasov, *Bulgaria*

Zdenko Stanec, *Croatia*

Zlatan Jancic, *Serbia*

Scientific Committee

Adnan Menderes

Akhmed Rakhimov

Akın Yücel

Aleksandra Bozovic

Alexandru Georgescu

Ali Adwal Ali

Ali Barutçu

Atilla Arıncı

Amela Karabeg

Aydan Köse

Barış Çakır

Bilsev İnce

Boro Dzonov

Burak Kaya

Bülent Saçak

Cemal Şenyuva

Cengiz Çetin

Cenk Demirdöver

Daniel Yankov

Elias Athanasopoulos

Enver Aydın

Erhan Eryılmaz

Erol Benlier

Ersoy Konaş

Fethi Orak

Figen Özgür

Fuat Yüksel

Gaye Taylan Filinte

Gökçe Yıldırım

Hakan Şirinoğlu

Hüseyin Güner

İbrahim Vargel

İbrahim Yıldırım

İsmail Kuran

Konstantinos Manos

Korab Berisha

Mehmet Bayramiçli

Mehmet Dadacı

Mehtap Karameşe

Metin Yavuz

Milica Rajović

Mustafa Keskin

Mustafa Sütçü

Mustafa Yılmaz

Nazım Çerkeş

Necmettin Kutlu

Nenad Stepic

Nihal Durmuş Kocaaslan

Nuh Evin

Osman Akdağ

Ömer Özkan

Özhan Çelebiler

Regina Khater

Reha Yavuzer

Reuf Karabeg

Rezarta Kabaj

Selahattin Özmen

Serhan Tuncer

Smilja Tudjarova

Sokol Isaraj

Sühan Ayhan

Şeyda Evin

Şükrü Yazar

Tahir Gürler

Tuğba Gün Koplay

Ufuk Emekli

Uğur Anıl Bingöl

Uğur Koçer

Uros Ahcan

Vladimir Filaj

Yiğit Tiftikcioğlu

Ylber Zejnnullahu

Zekeriya Tosun

Zeynep Altuntaş



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

PRECONGRESS COURSES AND LIVE SURGERIES PROGRAM

13 September 2023	
09:00	Cleft Lip Repair with Millard Technique: Three decade experience with the modifications – Figen Özgür
09:00	Vertical Technique Reduction Mammoplasty: Reshaping with Tissues (Live Surgery) – İsmail Kuran
09:00	Open Structural Rhinoplasty Live Surgery – Nazım Çerkeş
09:00	How to Navigate Breast Prosthesis?: Breast Augmentation – Akın Yücel
10:00	Tips and Tricks of Hair Transplantation – Zekeriya Kul
10:00	Coldplasm Course - Ali Barutçu
11:00	Facial Lifting with Treads and Fat Grafting – Zafer Atakan
11:00	Ultrasonography Workshop on Face – Fatih Gülşen
11:00	Definitive Surgery for Cleft Lip Nose (Live Surgery) – Zekeriya Tosun



12th

BAPRAS CONGRESS



Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

13 September
Pre Congress Course
14 - 16 September
Congress

SCIENTIFIC PROGRAM

14 September 2023			
08:00 - 09:00	REGISTER		
	KUBADÂBÂD 1	KUBADÂBÂD 2	MİRYOKEFALON
09:00 - 10:30	AESTHETIC BREAST-1 Chairs: Cenk Demirdöver, Mert Ersan Auto-augmentation Mastopexy Cenk Demirdöver Push-up Mammoplasty as a Breast Reshaping and Remodeling Procedure Akın Yücel Technique Selection in Breast Augmentation and Mastopexy Şükrü Yazar Correction of Tuberosus-Tubular Breast Deformities Şükrü Yazar	TENDON INJURIES Chairs: Mustafa Sütçü, Gökçe Yıldırım Primary Flexor Tendon Repair Mert Asfuroğlu Extensor Tendon Injuries Ali Özdemir Principles of Tendon Transfers Muhammet Okkan 2-Stage Tendon Repair Gökçe Yıldırım Flexor Tendon Rehabilitation Elif Balevi Batur	GENERAL PLASTIC SURGERY: ESSENTIALS Chairs: Ali Adwal Ali, Bora Edim Akalın Vacuum Assisted Closure Dressing, Usage and Benefits in Chronic Wounds and SSG Applications Ali Adwal Ali Vacuum Assisted Flap Delay (VAFD) Enver Aydın Different Cases And Our Approach Dilgam Mammadov Different Types of Electrosurgical Devices in Breast Surgery Tuğba Gün Koplay Approach to the Transgender Patient Bora Edim Akalın
10:30 - 11:00	COFFEE BREAK		
11:00 - 12:30	CLEFT LIP AND PALATE Chairs: Mithat Akan, Şeyda Güray Evim Correction of Whistling Deformities Mithat Akan Current Treatment of Alveolar Clefts Erol Kozanoğlu Indications for Orthodontic Preparation and Repair of Alveolar Clefts Bora Edim Akalın Surgical Options in Acquired And Congenital Oral Fistula Management Şeyda Güray Evim Use of the Microscope in Cleft Palate Repair Anıl Demiröz Speech Assessment and Intervention on Velopharyngeal Dysfunction Maviş Emel Kulak Kayıkçı	RHINOPLASTY-1 Chairs: Nazım Çerkeş, Rezarta Kapaj Secondary Rhinoplasty; Structural Reconstruction Nazım Çerkeş Surgical vs Non Surgical Rhinoplasty, Similarities and Differences Rezarta Kapaj, Klaudia Ferko Dome Excision; Crooked Nose, Amorphous Tip Ali Adwal Ali The Most Common Techniques that You Need in Rhinoplasty Haldun Kamburoğlu How to Achieve a Predictable and Stable Tip Position in Rhinoplasty? Haldun Kamburoğlu	TRICKS FOR FREE FLAPS Chairs: Osman Akdağ, Hasan Murat Ergani Uterus Transplantation Özlenen Özkan Evaluation of All Aspects of the Parascapular Flap Çağla Çiçek Superficial Circumflex Iliac Artery Perforator Flap Burak Sercan Erçin Where Do We Use the Radial Forearm Flap? Hasan Murat Ergani An Uncommon Approach in Repairing Knee Defects Süleyman Çeçen



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

12:30 - 13:30	LUNCH		
13:30 - 15:00	BODY CONTOURING-1 Chairs: Mustafa Keskin, Nargiz Ahmadova Chest Wall Contouring in Transmen and Gender-Fluid People Işıl Akgün Demir Body Shaping in High BMI Patients Hasan Ozan Kurt Combination of Lipofilling with Liposuction in the Correction of Pseudo Genu Varus Deformity Ayhan Okumuş Efficiency and Safety of Midline Sub-Scarpa Lipectomy in Abdominoplasty Mustafa Keskin Features of Radiofrequency Liposuction in The Correction of Body Contours Nargiz Ahmadova	REGENERATIVE MEDICINE AND SURGERY-1 Chairs: Perçin Karakol, Nuh Evın Regenerative Medicine: History and Future İbrahim Vargel Long Term Results of Mechanical Stromal-Cell Transfer (MEST) with Ultra-Sharp Blade Systems Eray Copçu Stromal Vascular Fraction and Combined Applications for Reconstruction and Aesthetic Purposes Perçin Karakol Bone Marrow Aspirate Usage for Facial Rejuvenation T. Murad Aktan Activated Fat Grafting: A novel Approach for Enhance Fat Graft Retention and Natural Long-Term Results Eray Copçu	RESIDENTS' OLYMPIADS: BALKAN CUP Hosts: Gökçe Yıldırım Anıl Demiröz Mehmet Dadacı Hasan Murat Ergani
15:00 - 15:30	COFFEE BREAK		
15:30 - 17:00	AESTHETIC BREAST-2 Chairs: Kamuran Zeynep Sevim, Erol Kozanoğlu Cosmetic Breast Surgery with Sedation and Pectoral Nerve Blocks Sibel Atalay Gynecomastia: Surgical Treatment Approaches and the Role of Energy-Based Devices Alper Ural Difficulties of Implant Based Breast Reduction- Problems That No One Likes to Face Kamuran Zeynep Sevim Therapeutic Mammoplasties Erol Kozanoğlu	RHINOPLASTY-2 Chairs: Daniel Yankov, Sultan Tukeshev Fundamentals of Nasal Septoplasty Daniel Yankov Dorsal Preservation with Swinging Door Septoplasty Erhan Coşkun Closed Ligament Preservation Tipplasty Erhan Coşkun Structural and preservation rhinoplasty in Asian patients. Our experience in Kyrgyzstan Sultan Tukeshev Subtotal Septal Straightening in Severely Crooked Noses Zeynep Altuntaş	FACIAL SKELETON Chairs: Horacio Costa, Ersoy Konaş Harmony and Facial Skeleton Horacio Costa Complications in Orthognathic Surgery Ufuk Emekli Prophyloplasty Ersoy Konaş Molding the Bone in Rhinoplasty Ersoy Konaş
17:00	OPENING CEREMONY In Memory of Colic - Ali Barutçu Past President of BAPRAS İbrahim Yıldırım Past President of TSPRAS Cenk Demirdöver President of TSPRAS Zekeriya Tosun President of Congress Metin Aksoy Rector of Selçuk University		



12th

BAPRAS CONGRESS

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

15 September 2023

	KUBADÂBÂD 1	KUBADÂBÂD 2	MİRYOKEFALON
09:00 - 10:30	FACE REJUVENATION Chairs: Akın Yücel, Tunç Tiryaki Multiplanar Approach in Periorbital Rejuvenation Akın Yücel Aesthetic Ear Reduction Ahmet Seyhan Lipolifting: Simplified Rules of Facial Fat Transfer After 3000 Cases for Regeneration, Revolumization and ligamental lifting Tunç Tiryaki Hybrid 3D Face-lift Under Sedation: Combining SMAS Redistribution with Multilayer Fat Transfer Tunç Tiryaki	MISCELLANEOUS-1 Chairs: Ramazan Erkin Ünlü, Anıl Demiröz AI in Life with Case Studies Ahmet Haydar Örnek Fusing Artificial Intelligence and Plastic Surgery: Shaping the Future Hasan Büyükdogan Endoscopic Supraorbital Bone Shaving(SOS procedure) to Restore Upper Lateral Convexity in Deep Set Eyes Özgür Pilancı Management of 57 Assistant Plastic Surgery Clinics Education Standardization Ramazan Erkin Ünlü	MISCELLANEOUS-2 Chairs: Hüseyin Borman, Alp Ercan Recognising the Therapeutic Potential of Exosomes in Plastic Surgery Applications Mert Ersan Cold Plasma & Plastic, Reconstructive and Aesthetic Surgery Ali Barutçu Using Tfl Tendon Sling to Overcome Debilitating Consequences of Long Term Lower Lid Paralysis in Facial Palsy Alp Ercan A new method of osteosynthesis of small bones of the phalanges of the hand in comminuted fractures Sultan Tukeshev Asian blepharoplasty. Our philosophy and approach Sultan Tukeshev
10:30 - 11:00	COFFEE BREAK		
11:00 - 12:30	CLEFT LIP NOSE Chairs: Aret Çerçi Özkan, Mehmet Tapan Costal Cartilage Graft Combination with V-Y Composite Chondromucosal Advancement Flap for Correction of Unilateral Cleft Lip Nasal Deformity Ali Adwal Ali Composite Graft Use in Cleft Lip Nose Deformities Mithat Akan Columellar Reconstruction in Cleft Lip Nose Zekeriya Tosun Approach To Nostril Asymmetries in Cleft Lip Nose Deformity Mithat Akan The Adult Unilateral Cleft-Lip Rhinoplasty Management Aret Çerçi Özkan	ESSENTIALS OF RECONSTRUCTION Chair: Mehmet Veli Karaaltın Upper Extremity Reconstruction Horacio Costa Pedicled Perforator Flaps: Principles and Indications Daniel Yankov Reconstruction of Hand Defects with Free Flaps Hasan Murat Ergani Second Toe to Thumb Transfer for Total Thumb Reconstruction Burak Yaşar Toe to Finger Mehmet Veli Karaaltın	FACELIFT-1 Chairs: Aydın Gözü, Hande Akdeniz ‘Lower Face Lift with Extensive Neck Contouring’ Hüseyin Borman Enhancement of The Lower Face and Neck in Different Age Groups Metin Kerem Extended Superolateral Cheek Lift with A Short Preauricular Scar: A Local Anesthesia - Based Practicabl Technique for the Correction of Moderate-Degree Facial Aging Signs Ayhan Okumuş From Plication to Imbrication: My Experience with MACS Lift Aydın Gözü



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

12:30 - 13:30	LUNCH		
13:30 - 15:00	REGENERATIVE MEDICINE AND SURGERY-2 Chairs: Eray Copçu, Zafer Atakan The Clinical Applications of Micro-Autologous Fat Transplantation (MAFT) in Facial Rejuvenation Linn Tsai-Ming Autologous Fat Transplantation in Aesthetic and Reconstructive Breast Surgery Linn Tsai-Ming How to Avoid the Severe Complications of Fat Grafting and Filler Injection Linn Tsai-Ming Facial Rejuvenation Using Enriched Permanent and Absorbable Threads, As Well As Combined Nano and Micro Fat Grafting Zafer Atakan From SVF Injections to Synthetic and Autologous Exosomes. The New Regenerative Journey Tunç Tiryaki	AESTHETIC BREAST-3 Chairs: Nedim Savacı, Mehmet Dadacı Central Mound Technique in Breast Reduction Aydın Gözü The Twirl Internal Bra Technique for Breast Reduction and Mastopexy Mehmet Veli Karaaltın Musculo-Dermo-Glandular, Axial-Perforator Bi-Pedicle Flap: A New Approach for Medium and Large Breasts After Mastectomy Vagif Galandarov	BREAST RECONSTRUCTION Chairs: Özlem Çolak, Tuğba Gün Koplay Breast Cancer Biology and Decision Process in Reconstruction Hande Köksal Methods for Enhancing the Cosmetic Results of Inferior Pedicle Breast Reconstruction Sibel Atalay Beyond Restoring Confidence: Practices and Trends in Breast Reconstruction Özlem Çolak
15:00 - 15:30	COFFEE BREAK		
15:30 - 17:00	WOUND Chairs: Gaye Taylan Filinte, Burak Özkan Burn Reconstruction of Specialized Areas Gaye Taylan Filinte Free Microvascular Tissue Transfers in Burn Reconstruction Burak Özkan Diabetic Hand and tahe Strategies to Avoid Amputation Gaye Taylan Filinte Diabetic Limb Salvage with SCIP Free Flap Nuh Evin	LOWER EXTREMITY RECONSTRUCTION Chairs: Uğur Anıl Bingöl, Özer Özmut Lower Limb Reconstruction Horacio Costa Foot Reconstruction Uğur Anıl Bingöl Reconstruction in Complex Lower Extremity Injuries Sinan Öksüz Algorithmic Approach to Lower Extremity Injuries Burak Sercan Erçin Reconstruction of Lower Extremity with Free Flaps Burak Yaşar	RHINOPLASTY-3 Chairs: Hakan Şirinoğlu, Süleyman Çeçen Alar Reduction Techniques, Selecting the Best Approach for Different Patients Selahattin Özmen My Approach to Tip Projection and Rotation in Rhinoplasty Ahmet Akatekin The Importance of Nasal Valves Selahattin Özmen Maneuvers for Pitanguy Ligament Repair to Control the Supratip Area in Open Rhinoplasty Hakan Şirinoğlu The Positioning and Shaping the Nasal Tip in the Overprojected Noses Zeynep Altuntaş



12th

BAPRAS CONGRESS



Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

13 September
Pre Congress Course
14 - 16 September
Congress

16 September 2023			
	KUBADÂBÂD 1	KUBADÂBÂD 2	MİRYOKEFALON
09:00 - 10:30	RHINOPLASTY-4 Chairs: Selahattin Özmen, Ayhan Okumuş Tries for Success in Turkish Delight Technique Önur Erol Septal Extension Graft Erhan Eryılmaz No Lateral Osteotomy: Indications and Drawbacks Selahattin Özmen Dorsum Reshaping Zekeriya Tosun Utilization of Diced Cartilage and Fascia or Tutopatch in Nasal Reconstruction Aret Çerçi Özkan	FAT PANEL & GLUTEAL AUGMENTATION Chairs: Yağmur Aydın, Dicle Yaşar Aksöyler BBL and Tummy Tuck Combinations : My Personal Experience Doğuş Yalçın BBL and Safety, Ultrasonography Guided Injection Doğuş Yalçın Secondary BBL: Reasons, Pitfalls and Aims Burak Ersen An Ultimate Patient Safety Protocol for Gluteal Augmentation with Autologous Fat Grafting (The Advanced Safe BBL) Mehmet Veli Karaaltın	GENERAL PLASTIC SURGERY:DISASTERS Chairs: Atilla Arıncı, Burak Yaşar The Role of Social Media in Private Practice and Health Tourism Hakan Şirinoğlu Role Of Surgery in the Treatment of Lymphedema Anıl Demiröz Can We Predict Morbidity of Earthquake Related Crush Injuries with Systemic Inflammatory Indexes? Burak Yaşar Our Plastic Surgery Approaches in the Early And Late Period After the Earthquake Affecting The Large Region Perçin Karakol Principles of Reconstruction in Sternal Dehiscence After Cardiac Surgery Bilgen Can
10:30 - 11:00	COFFEE BREAK		
11:00 - 12:30	HARD CASES Chairs: Ali Emre Aksu, Vakıf Kalenderov Radial club Hand Ali Emre Aksu Combined DAO, DLI, Buccinator Myectomies in Synkinetic Patients Alp Ercan The Body Dysmorphic Disorder in Patients with Plastic Surgery Özer Özmut	TEMPORAL LIFT Chair: Şükrü Yazar Temporal Face Lift - A New Concept for Upper and Mid Face Lifting Hakan Şirinoğlu Hot Topic : Temporal Lift; But How We Can Choose Optimal Patient Mehmet Gencer Temporal Lift + Transoral Subperiosteal Midfacelift Combination, Advantages – Disadvantages Mehmet Gencer Effective Temporal Brow Lift with Hybrid Methods Ahmet Seyhan The effects and advantages of Temporal Face Lift on Other Facial Aesthetic Procedures Hakan Şirinoğlu	BALKAN-ASIA JOINT MEETING Chairs: Hüseyin Güner, Reuf Karabeg Ishida Cartilage-Preserving Pushdown + Polygon Tipplasty Metin Kerem Genital Aesthetics Mehtap Karamişe Ten Steps Blepharoplasty Hüseyin Güner 8 Years of Experience with the New Method of Breast Augmentation (Dual Plane Subfascial) Reuf Karabeg



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

12:30 - 13:30	LUNCH		
13:30 - 15:00	HEAD AND NECK MICROSURGICAL REC Chairs: Erhan Eryılmaz, Enver Aydın Nasal Reconstructions After Carcinoma Excision Daniel Yankov Mandibular Defect Repair with Free Fibula Flep: A New and Easy Planning Method Burak Yaşar Maxilla Reconstruction with Free Flaps Şükrü Yazar Vessel Depleted Neck Dicle Yaşar Aksöyler Head and Neck Reconstruction From Classical to Challenging Approaches Mehmet Veli Karaaltın	FACIAL AESTHETIC PANEL Chairs: Ufuk Emekli, Mehtap Karamişe The Great Challenge of Permanent and Semipermanent Filler Materials Selahattin Özmen Holistic Approach in Facial Filler Applications Akın Yücel Volumetric Shaping of the Face Onur Erol Canthoplasty and Midfacelifting Combination Erhan Eryılmaz The Effect Of Lateral Platysma Incision Level On Face and Neck in Deep Plane Face and Neck Lift Surgery Ummahan Özasan	BREAST RECONSTRUCTION-2 Chair: Metin Yavuz Optimization of Aesthetic Outcomes in Implant Based Breast Reconstruction Akın Yücel Immediately Breast Reconstruction in One Stage Şükrü Yazar The One-Stage Prepectoral Breast Reconstruction with Implants Zeynep Altuntaş
15:00 - 15:30	COFFEE BREAK		
15:30 - 17:00	FREE PRESENTATION SESSION 12 RESEARCH Chair: Hasan Murat Ergani OP 095 Perception of Plastic Surgery in Medical Students Prior to Plastic, Reconstructive and Aesthetic Surgery Training Elif Gündes, Aytac Altın OP 096 Analysis of Patients Operated for Malignant Melanoma in The Last 16 Years Soysal Baş, Furkan Cestepe, Alper Taşan, Kamuran Zeynep Sevim OP 097 The Relationship Between Different Basal Cell Carcinoma Subtypes and Neutrophil to Lymphocyte Ratio, Platelet to Lymphocyte Ratio, and Pan- Immune-Inflammation Value Isıl İrem Turan, Ömer Faruk Akpınar, Erol Kozanoğlu OP 098 Salvage of The Exposed Cardiac Pacemakers With Prepectoral Transposition And Local Fasciocutaneous Flaps Mehmet Fatih Camlı, Nuh Evim, Şeyda Güray Evim OP 099 Assessment of Demographic Characteristics of Earthquake Patients and Psychological Impact of the Social Support Status of Patients with Fasciotomy After Injury Özden Baz, Özer Özmüt, Hasan Murat Ergani, Burak Yaşar, Ramazan Erkin Ünlü		



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP 100 A Very Rare Four-Case
Porocarcinoma Case Series:
Case Reports of Porocarcinoma
with Confusion in Diagnosis and
Literature Summary
Ersin Yavuz,
Servet Yekta Aydın,
Alp Ercan

OP 101 Differing Levels of Protease
Enzymes Between Venous and
Diabetic Ulcers
Ali Barutcu,
Mehmet Gökçelik,
Mustafa Yılmaz,
Sevgi Yıldırım,
Osman Enver Aydın



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

ORAL PRESENTATIONS

Free Presentation Session 1

AESTHETICS

Malazgirt Hall, 14.09.2023 , 09:00-10:30

- OP 001 High Definition Abdominoplasty: Myth or Truth?**
Alpay Duran
- OP 002 Lipoabdominoplasty: Comparing UAL vs UAL/PAL Techniques on Complication Profile and Patient Safety**
Alpay Duran, Hasan Buyukdogan
- OP 003 Breast Auto-Augmentation Technique With Inferior Pedicle Derma-Glandular Flap Redefines Mastopexy and Augmentation Procedures**
Hasan Buyukdogan, Oguz Cortuk
- OP 004 Comprehensive Assessment of the Functional Outcomes of Partial Turbinectomy: A Prospective Clinical Trial**
Murat Çelik, Sinan Kadir Altunal, Uğur Koçer, Arda Kucukguven
- OP 005 Forehead Contouring as an Adjunct to Rhinoplasty: Evaluation of the Effect on Facial Appearance, Personal Traits and Patient Satisfaction**
Oguzhan Demirel
- OP 006 Prevalence of Body Dysmorphic Disorder (BDD) by Body Regions and Demographic Characteristics**
Silan Kanas Seymen, Özer Özmut, Burak Yaşar, Hasan Murat Ergani, Ramazan Erkin Ünlü
- OP 007 Sensory Changes in Nasal Subunits Following Open and Closed Rhinoplasty: A Randomized Controlled Trial**
Sinan Kadir Altunal, Murat Celik, Ugur Kocer, Arda Kucukguven

Free Presentation Session 2

MICROSURGERY - 1

Malazgirt Hall, 14.09.2023 , 11:00-12:30

- OP 009 Examination of Clinical Functional Scores after Reconstruction with Vascularized Fibula Graft in Patients with Bone Tumors**
Mehmet Can Gezer, Mustafa Onur Karaca, Hüseyin Yusuf Yıldız
- OP 010 Gluteal Artery Perforator Flap Reconstructions of Pressure Ulcers**
Murat Enes Sağlam
- OP 011 Management of Chest Wall Defects with Soft Tissue and Bony Defect,**
Murat Muhammed Biner, Ahmet Özgür Alkan, Süleyman Çeçen, Güzin Yeşim Özgenel
- OP 012 Lateral Thoracic Artery Perforator Propeller Flap versus Thoracodorsal Artery Perforator Propeller Flap in Shoulders Defects**
Nuh Evin
- OP 013 Our Kite Flap Experience**
Percin Karakol, Yasin Canbaz, Agit Sulhan, Onur Zengin, Furkan Uysal
- OP 015 Our Experience With Bilateral Pedicled Pectoralis Major Muscle Advancement Flap for Secondary Sternal Defects Following Coronary Artery Bypass Surgery**
Percin Karakol, Yasin Canbaz, Mert Noyan Dabak, Ömer Büyükkaya, Oguzhan Tekin
- OP 016 Reconstruction Procedures in Oncoplastic Surgery: Using Thoracodorsal Artery Perforator Flap and Latissimus Dorsi Myocutaneous Flap**
Saruhan Mahmutoglu, Büşra Güçlü, Murat Doğuş Çerikan, Kamuran Zeynep Sevim, Hüseyin Emre Ulukaya
- OP 017 Flap Surgery Experience of an Orthopedic Hand Surgery Unit on Severely Crushed Extremities of Kahramanmaraş Earthquake Victims**
Uğur Bezirgan, Yener Yoğun, Merve Dursun Savran, Peri Kından, Mehmet Armangil
- OP 018 Fournier's Gangrene, No Matter How Much Flap Options Increase, It Is Still a Frightening Picture**
Percin Karakol, Yasin Canbaz, Mert Noyan Dabak, Zeki Çelik, Osman Şamil Sevindik



12th

BAPRAS CONGRESS
Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Free Presentation Session 3

HAND - 1

Malazgirt Hall, 14.09.2023 , 13:30-15:00

- OP 020 Can ALT Flap Be Rescuer in Upper Extremity Injuries?**
Numan Atılğan, Burak Kuşcu, Mikail Telek, Numan Duman, Özlem Orhan
- OP 021 Evaluation of The Psychiatric Status of Patients With Flexor Zone 5 Injuries**
Minel Nur Ulukan, Özer Özmut, Seyit Ahmet Korur, Burak Yaşar, Hasan Murat Ergani, Ramazan Erkin Ünlü
- OP 022 Demographic and Clinical Features of Earthquake-Related Upper Extremity Injuries That Admitted to The Outpatient Clinic After The Acute Period**
Muhammet Okkan, Zeynel Mert Asfuroğlu
- OP 023 Subtotal Palmar Fasciectomy with Skin Z-Plasty Results in Dupuytren's Disease: Minimum One Year Follow-Up**
Kadir Uzel, Murat Birinci, Mehmet Akif Çağan, Alparslan Uzun, Bilgehan Çatal, Adnan Kara
- OP 024 Comparison of Physical Examination Accuracy in Flexor Zone 5 Injury in Pediatric and Adult Age Group**
Oğuz Kagan Kocak, Gökçe Yıldıran, Zekeriya Tosun
- OP 025 Innovative Use of Rubber Bands in Managing Large Tissue Defects**
Oğuz Eker, Gökçe Yıldıran, Zekeriya Tosun
- OP 026 Surgical Treatment Of High Flow Congenital Arteriovenous Malformation In The Upper Extremity**
Mehmet Işık, Serkan Yıldırım, Niyazi Görmüş

Free Presentation Session 4

WOUND & TUMOR

Malazgirt Hall, 14.09.2023 , 15:30-17:00

- OP 027 Atypical Pressure Sores due to Entrapment under Debris in Earthquake**
Hasan Basri Çağlı, Fatih Berk Ateşşahin, Esra Aydın, İsmail Aksu, Adnan Menderes, Cenk Demirdöver
- OP 028 Combination of Surgical Excision with Pre-Postoperative Radiotherapy in Treatment of Keloids Resistant to Steroid Injections**
Nevra Seyhan, Miray Kalınbaşoğlu
- OP 029 Retrospective Analysis of Patients Over 65 Years of Age Who Underwent Surgery for Skin Cancer**
Soysal Baş, Saruhan Mahmutoğlu, İbrahim Akpınar, Selahattin Galyan, Kamuran Zeynep Sevim
- OP 030 Surgical Management of Basal Cell Carcinoma of the Nose: An Algorithm for Treatment**
Dicle Aksöyler
- OP 031 Determining Factors for Exenteration in Periorbital Skin Cancers**
Mustafa Akyurek, Gunes Hafiz
- OP 032 Clinical Experiences During Application of Maggot Therapy**
Percin Karakol, Yasin Canbaz, Ali Can Aydın, Kurtulus Oz, Berkan Sanli
- OP 033 An Alternative Approach For Reconstruction of Scrotal Defects Due to Fournier's Gangrene: Use of Bilateral Trapezoid-Like Scrotal Flaps**
Yusuf Alper Aytaç, Mustafa Canberk Gürbüz, Emrah Kağan Yaşar, Murat Şahin Alagöz
- OP 034 How Can We Improve Cost-Effectiveness of Vacuum Assisted Therapy for Problematic Wounds**
Katya Ilinova Kalinova, Ivaylo Mourdjev, Nedzhat Ali, Petar Uchikov, Stoyan Bogoev, Hristo Stoev, Konstantin Dimitrov, Zaprın Vazhev
- OP 035 Choosing The Method of Reconstruction of Fasciotomy Defects in Patients Affected by Earthquake**
Ömer Faruk Yıkılmaz, Hasan Murat Ergani, Burak Yaşar, Ramazan Erkin Ünlü



12th

BAPRAS CONGRESS
Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Free Presentation Session 5

BREAST

Malazgirt Hall, 15.09.2023 , 09:00-10:30

- OP 036 Breast Reconstruction for Patients with Poland Syndrome**
Alper Taşan, Kamuran Zeynep Sevim, Ayşin Yeşilada, Sabri Öztürk, Büşra Güçlü, Murat Doğuş Çerikan
- OP 037 Dermal Scoring and Multiple Suture Lift in Central Pedicled Breast Reduction and Mastopexy**
Ertuğrul Karanfil, Emre Güvercin, Berkalp Berker
- OP 038 Surgical Procedure and Schedule for Patients with Latissimus Dorsi Muscle-Skin Flaps and Breast Reconstruction with Implants: Is It the Immediate Period? Is it the Late Period?**
Çağrı Berk Arıkan, Seren Karataş, Gökçe Yıldırım, Mustafa Sütçü, Osman Akdağ, Zekeriya Tosun
- OP 039 Breast Reduction After Breast Conserving Surgery and Radiotherapy: Avoiding Complications**
Erol Kozanoğlu
- OP 040 Nipple-Sparing Mastectomy with Inverted Omega Incision and Reconstruction with Dual Plan Implant Placement**
Tahir Babahan, Ahmet Özdemir, Salih Can Sezer, Merve Özger, Haluk Vayvada, Adnan Menderes
- OP 041 Effectiveness of Perioperative Ultrasound Guided Pectoralis Nerves Block for Pain Control and Reducing Analgesic Dose After Reduction Mammoplasty**
Tuğba Gün Koplay, Betül Kozanhan, Mehmet Nurullah Arıkan
- OP 042 Does the Usage of Drains Create a Risk of Surgical Site Infection During Breast Surgery?**
Tuğba Gün Koplay, Asuman Güzelant
- OP 043 Does Pedicled Transverse Rectus Abdominis Myocutaneous (pTRAM) Flap Perfusion Change with Position in Autologous Breast Reconstruction?**
Bilsevin Ince, Mahmut Tekecik, Yiğitcan Kaya, Mehmet Dadacı

Free Presentation Session 6

MICROSURGERY - 2

Malazgirt Hall, 15.09.2023 , 11:00-12:30

- OP 044 Sensorial Reconstruction of Lower Extremity with Lateral Arm Free Flap**
Furkan Temizayak, Burak Yaşar, Arda Tınaz, Tibet Kaan Yolsal, Harun Güleç, Hasan Murat Ergani, Ramazan Erkin Ünlü
- OP 045 Various Applications of Pedicled Anterolateral Thigh Flap**
Burak Ozkan, Abdullah Kızmaz, Süleyman Savran, Abbas Albayati, Çağrı A. Uysal
- OP 046 Reconstruction Options in Surgical Management and Anatomical Localization of Arteriovenous Malformations**
Atakan Sahiner, İncilay Yılmaz, Alperen Aras, Emrah Kagan Yasar, Murat Sahin Alagoz
- OP 047 Monitor Selection According to the Defect Location in The Medial Femoral Condyle Flap**
Burak Ergün Tatar, Burak Sercan Erçin
- OP 048 Plastic Surgery's Exam With Earthquake: A Case Series Of Management Of Complex Wounds**
Ebru Aşiret, Özer Özmüt, Hasan Murat Ergani, Burak Yaşar, Ramazan Erkin Ünlü
- OP 050 Lower Extremity Defects Reconstruction With Latissimus Dorsi Free Flap**
Harun Güleç, Tibet Kaan Yolsal, Furkan Temizayak, Arda Tınaz, Tuğba Akgün, Rıza Türk, Furkan Yıldırım, Hasan Murat Ergani, Burak Yaşar, Ramazan Erkin Ünlü
- OP 051 Reconstruction of Tubular Composite Tissue Defect of The Ankle With Novel Chimeric Free Vram and Diep Flaps Azerbaijani Flap**
Mahir Aliyev
- OP 052 Venous Insufficiency of Free Flaps: Tolerance, Management, Result Differences Regarding Clinical Data and Animal Study**
Mehmet Emre Yeğin, Shih Heng Chen, Phoebe Tang, Hung Chi Chen
- OP 053 Earthquake Related Pressure Sores Management**
Mert Şen, Tibet Kaan Yolsal, Arslan Güvendik, Burak Yaşar, Hasan Murat Ergani, Ramazan Erkin Ünlü
- OP 054 Double Layer Reconstruction of Exposed Cardiac Implantable Electronic Devices in Elderly Patients**
Burak Ozkan, Süleyman Savran, Abbas Albayati, Çağrı A. Uysal



12th

BAPRAS CONGRESS
Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Free Presentation Session 7

CMF

Malazgirt Hall, 15.09.2023 , 13:30-15:00

- OP 055 Our Experiences With Rigid External Distraction (Red) In Patients With Maxillary Hypoplasia Diagnosis of Clear Palate And Lip**
Mehmet Alperen Bay, Gökçe Yıldırım, Zekeriya Tosun
- OP 056 Usage of Root Mean Square in Mandible Contouring for Gender-Affirming Facial Feminization Surgery**
Mehmet Fatih Okyay
- OP 057 Closed Reduction of Zygomatic Fractures with Towel Clip**
Mehmet Tapan, Yunus Emre Şeker, Vedat Can İşler, Özlenen Özkan, Ömer Özkan
- OP 058 A Novel Technique for Addressing Columellar Deficiencies in Cleft Lip Nose Rhinoplasty**
Oğuz Eker, Gökçe Yıldırım, Zekeriya Tosun
- OP 059 The Only Pre-Bent Plate Template Technique Without Printing Defect And Bone Flap In Mandible And Maxillary Reconstruction With Homemade 3D Printer**
Erden Erkut Erkol, Mustafa Sutcu, Osman Akdag, Zekeriya Tosun

Free Presentation Session 8

HEAD NECK

Malazgirt Hall, 15.09.2023 , 15:30-17:00

- OP 060 Evaluation of Revisions for Functional Improvement in Functional Free Gracilis Muscle Flaps Used in the Head and Neck Region**
Burak Yaşar
- OP 061 Reconstruction of Extensive Defects in the Head and Neck Region Through the Utilization of Combined Local Flaps**
Canberk Gürbüz, Emrah Kağan Yaşar, Murat Şahin Alagöz
- OP 062 Correction of Periorbital Contractures with Different Methods**
Canberk Gürbüz, Emrah Kağan Yaşar, Murat Şahin Alagöz
- OP 063 Our Clinical Experiences in Mustarde Flap Reconstruction**
Furkan Çeştepe, Ömer Faruk Dilek, İsmail Ince, Egehan Güngörmez, Soysal Baş
- OP 064 A Novel Modification of Furlow Palatoplasty: Extended Double Opposing Z-Plasty**
Murat Kara, Figen Özgür
- OP 065 Maxillary Bone Density of Cleft Lip and Palate Patients with Alveolar Clefts: A Comparative Study with The Normal Population**
Sare Demirtas, Gokce Yildiran, Zekeriya Tosun
- OP 066 In Cases of Head and Neck Burns, Fractional Laser is Our Ally for Both Cosmetic and Functional Recovery**
Percin Karakol, Yasin Canbaz, Agit Sulhan, Abdullah Colcinar, Yasin Babacan, Yalcin Akbulut, Mehmet Bozkurt
- OP 067 Recipient Vessel Problems and Solutions for Frontal Scalp Defects**
Yusuf Alper Aytaç, Mustafa Canberk Gürbüz, Emrah Kağan Yaşar, Murat Şahin Alagöz



12th

BAPRAS CONGRESS
Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org

Free Presentation Session 9

HAND 2

Malazgirt Hall, 16.09.2023 , 09:00-10:30

OP 068 Reconstruction Results with Free Pulp Flap, Clinical Experience

Ahmed Şamil Güvel, Ramazan Erkin Ünlü, Burak Yaşar, Hasan Murat Ergani, Özer Özmut, Özden Baz, Rıza Türk

OP 069 Is Implant Selection Important in Metacarpal Shaft Fractures? A Comparison of Open Reduction Internal Fixation and Closed Pinning

Ebubekir Eravsar, Ali Özdemir

OP 070 Management of the Rope Friction Burn and Review of the Literature

Nuh Evvin, Emine Parlak Kapucu, Şeyda Güray Evvin

OP 071 Hand Tumors In Single Center Experience

Furkan Çeştepe, Sabri Öztürk, Burak Arkan, Kamuran Zeynep Sevim, Hüseyin Emre Ulukaya

OP 072 An Entity As Important As The Right Technique In Cts Surgery: Detailed Preoperative Examination

Ibrahim Çaltın, Gökçe Yıldırım, Zekeriya Tosun

OP 073 Our Clinical Experiences in Percutaneous Aponeurotomy and Fat Graft for Early-Stage Dupuytren Contractures

Percin Karakol, Yasin Canbaz, Kurtulus Oz, Serhat Inan, Fatih Cinar

OP 074 The Effect of Triquetrum Bone Excision in Wrist Arthrodesis: When?

Kamil Yamak, Mehmet Tapan

OP 075 Microsurgery Experience In Upper Extremity Traumas Between 2015-2020

Melikhan Tatar, Bilsevin Ince, Mehmet Dadaci

Free Presentation Session 10

LOWER E.

Malazgirt Hall, 16.09.2023 , 11:00-12:30

OP 076 Using a Prophylactic VAC Therapy After Inguinal Lymph Node Dissection

Ismail Tekfiliz, Berkay Cinar, Can Ilker Demir, Emrah Kagan Yaşar, Murat Sahin Alagoz

OP 077 Clinical Experience in The Reconstruction of Soft Tissue Defects in Gunshot Injuries of The Lower Extremities with Reverse Neuroadipofascial Flaps

Elnara Salmanli, Mahir Aliyev

OP 078 Reconstruction of Lower Extremity Defects with a Free Anterolateral Thigh Flap: Evaluation of 17 Patients

Hasan Murat Ergani

OP 079 Sural Artery Flap as an Alternative for Lower Extremity Reconstruction

Bilgen Can, Hatip Dag, Duygu Karakayali, Nehyet Ceri, Betül Gözel

OP 080 A Reconstructive Algorithm for Achilles Tendon and Surrounding Tissue Defects

Osman Enver Aydın, Ender Ceylan, Mustafa Gök, Mustafa Çelik, Harun Karaduman

OP 081 Adjuvant Hyperbaric Oxygen Therapy for Limb Salvage in Crush Injuries: Our Clinical Experience With

Earthquake Patients

Nevra Seyhan

OP 082 Comparative Analysis of Free and Pedicled Flap Options in Foot and Ankle Reconstruction

Sare Demirtas, Ahmet Rifat Dogramaci, Gokce Yildiran, Mustafa Sutcu, Osman Akdag, Zekeriya Tosun

OP 083 Two-Stage Major Transtibial Amputation Technique in Acute Progressive Diabetic Foot Infection: Our Results

Servet Yekta Aydın, Alp Ercan, Cemal Burak Sirkeci, Uğur Çelik

OP 084 Application of Superior Lateral Genicular Artery Perforator Flap for Knee Defects

Süleyman Çeçen, Prof. Dr. Selçuk Akın

OP 085 Lower Extremity Salvage with Free Flap Transfers

Burak Ozkan, Süleyman Savran, Abbas Albayati, Çağrı A. Uysal

OP 086 Reconstruction with Gastrocnemius Flaps in Lower Extremity

Tibet Kaan Yolsal, Mert Şen, Harun Güleç, Furkan Temizayak, Arda Tınaz, Tuğba Akgün, Furkan Yıldırım, Rıza Türk, Ramazan Erkin Ünlü, Burak Yaşar, Hasan Murat Ergani



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Free Presentation Session 11

EXPERIMENTAL

Malazgirt Hall, 16.09.2023 , 13:30-15:00

- OP 087 Investigation of the Effect of Wireless Microcurrent Stimulator (WMCS) on Burn Wound Healing: An Experimental Burn Model in Rats**
Anil Pehlevan, Osman Enver Aydın, Barış Atakan, Serhat Çelikbağ, Ender Ceylan
- OP 088 Impact of Various Factors on Post-Operative Functional Outcomes in Open Treatment of Condylar Neck Fractures Utilizing Rigid Internal Fixation**
Mustafa Akyurek, Orhun Ali
- OP 089 Assessment of the Effectiveness of the Newly Developed Model Microsurgery Education on Plastic Surgery Assistants through Practice**
Ozer Ozmut, Arslan Guvendik, Ahmed Samil Guvel, Seyit Korur, Hasan Murad Ergani, Burak Yasar, Ramazan Erkin Unlu
- OP 090 The Effect of Chrysin on Ischemia Reperfusion Injury in The Rat Inferior Epigastric Artery Skin Island Flap Model**
Simay Erşahin, Nesrin Tan Başer, Narin Karagöz, Gülçin Şimşek
- OP 091 A New Treatment for the Prevention of Radiotherapy Skin Complications; Comparison of Wharton's Jelly Mesenchymal Stem Cell and Conditioning Medium Efficacy**
Ahmet Bilirer, Tahsin Murat Aktan, Selçuk Duman, Zeliha Esin Çelik, Murat Çelik, Çağdaş Yavaş, Mürsel Düzova, Zekeriya Tosun
- OP 092 Low Molecular Weight Heparin Applied Subcutaneously Under the Skins of Rat Abdominal Flaps Suffering Venous Insufficiency Has No Beneficial Effect On Flap Survival**
Bora Edim Akalın, Hüseyin Can Yücel, Erol Kozanoğlu, Dicle Aksoyler
- OP 094 Time-Related Variations in Viability of Random Pattern Skin Flaps: An Experimental Study in Rats**
Osman Enver Aydın, Kadir Cicek, Ender Ceylan, Ayça Tuzcu, Anıl Pehlevan, Necati Demir
- OP 102 Regenerative Perspective on the Effects of Royal Jelly on Anti-aging, Mitochondrial and Osteogenic Differentiation Capacity in Umbilical Cord-derived Mesenchymal Stem Cell**
Gülsemin Çiçek, Fatma Öz Bağcı

Free Presentation Session 12

RESEARCH

Malazgirt Hall, 16.09.2023 , 15:30-17:00

- OP 095 Perception of Plastic Surgery in Medical Students Prior to Plastic, Reconstructive and Aesthetic Surgery Training**
Elif Gundes, Aytac Altın
- OP 096 Analysis of Patients Operated for Malignant Melanoma in The Last 16 Years**
Soysal Baş, Furkan Çestepe, Alper Taşan, Kamuran Zeynep Sevim
- OP 097 The Relationship Between Different Basal Cell Carcinoma Subtypes and Neutrophil to Lymphocyte Ratio, Platelet to Lymphocyte Ratio, and Pan-Immune-Inflammation Value**
İşıl İrem Turan, Ömer Faruk Akpınar, Erol Kozanoğlu
- OP 098 Salvage Of The Exposed Cardiac Pacemakers With Prepectoral Transposition And Local Fasciocutaneous Flaps**
Mehmet Fatih Çamlılı, Nuh Evin1, Şeyda Güray Evin2
- OP 099 Assessment of Demographic Characteristics of Earthquake Patients and Psychological Impact of the Social Support Status of Patients with Fasciotomy After Injury**
Özden Baz, Özer Özmut, Hasan Murat Ergani, Burak Yaşar, Ramazan Erkin Ünlü
- OP 100 A Very Rare Four-Case Porocarcinoma Case Series: Case Reports of Porocarcinoma with Confusion in Diagnosis and Literature Summary**
Ersin Yavuz, Servet Yekta Aydın, Alp Ercan
- OP 101 Differing Levels of Protease Enzymes Between Venous and Diabetic Ulcers**
Ali Barutcu, Mehmet Gökçelik, Mustafa Yılmaz, Sevgi Yıldırım, Osman Enver Aydın



12th

BAPRAS CONGRESS
Selçuklu Convention Center Konya, TÜRKİYE



2023
13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org

POSTER PRESENTATIONS

- PP 001 Velopharyngeal Insufficiency Following Botox Injection for Persistent Bruxism**
Nuh Evin, Melih Kerem Sifil, Turan Mehdizade, Ebru Diana Özcan, Ethem Güneren
- PP 002 Catastrophics Status of Breast Filled with Polyacrylamide Hydrojel During Breastfeeding Period**
Yasin Canbaz, Ömer Büyükkaya, Onur Zengin, Özcan Boztepe, Percin Karakol
- PP 006 A Complication After Radiofrequency Ablation: Skin Necrosis**
Melih Kerem Sifil, Nuh Evin, Can Koç
- PP 007 A Patient Who Developed Lagophthalmos After Rhinoplasty**
Alper Ural, Mustafa Koray Gümüş
- PP 008 Maxillary Giant Cell Tumor: Case Report**
Ali Fuat Görgülü, Safa Eren Atalmış, Erk Evren, Alkan Çetin, Adnan Menderes, Mustafa Yılmaz
- PP 009 Giant Odontogenic Fibroma Case Report and Treatment Approach**
Merve Terzi, Hasan Basri Çağlı, Safa Eren Atalmış, Tahir Babahan, Fatih Berk Ateşşahin, Adnan Menderes
- PP 010 Median Cleft Lip**
Fatih Berk Ateşşahin, Safa Eren Atalmış, Merve Terzi, Tahir Babahan, Adnan Menderes
- PP 012 An Effective Method of Vacuum Assisted Closure**
Esra Aydın, Hasan Basri Çağlı, Fatih Berk Ateşşahin, Kasım İlker Sandıkçı, Mustafa Yılmaz, Haluk Vayvada
- PP 013 Iatrogenic Labial Asymmetry: A Novel Technique For Labium Minus Reconstruction**
Nijat Babaev, Gözde Şakul
- PP 014 Psychological Evaluation of Patients with Upper Extremity Finger Amputation**
Abdullah Buğra Kaya, Özer Özmut, Seyit Ahmet Korur, Burak Yaşar, Hasan Murat Ergani, Ramazan Erkin Ünlü
- PP 015 Diffuse Large B-Cell Lymphoma of The Upper Limb and Face: Two Ends of a Rare Spectrum**
Cemal Burak Sirkeci, Can Ege Yalçın, Servet Yekta Aydın, Alp Ercan, Anıl Demiröz, Hakan Arslan
- PP 018 Free Fibula Flap for Metacarpal Bone Tumor Reconstruction in Pediatric Age Group**
Kaan Kavruk, Mehmet Uğur Okan, Süleyman Çeçen, Selçuk Akın
- PP 019 Scaphoid Pseudoarthrosis Repair with Cancellous Bone Graft From The Radius**
Yasin Canbaz, Ömer Büyükkaya, Ali Can Aydın, Mert Noyan Dabak, Percin Karakol
- PP 020 Two Primary Synchronous and Symmetrical Malignant Melanomas of the Bilateral Upper Extremity**
Özge Eren, Merve Terzi, Abdurrahman Ercan Yurttaşer, Yunus Can Tokgöz, Salih Can Sezer, Adnan Menderes, Haluk Vayvada
- PP 021 Mercury Injection into The Hand: A Case Report**
Salih Can Sezer, Tahir Babahan, Ahmet Özdemir, Merve Özger, Haluk Vayvada, Mustafa Yılmaz
- PP 022 Spontaneous Progressive Necrosis of the Upper Limb: A Case Report**
Ahmet Özdemir, Tahir Babahan, Salih Can Sezer, Hasan Basri Çağlı, Cenk Demirdöver, Mustafa Yılmaz
- PP 023 Classic Experience: Index Finger Littler Flap in Pulpa Amputs**
Percin Karakol, Yasin Canbaz, Zeki Çelik, Muhammed Yasin Babacan, Serhat Inan
- PP 024 Our Experiences in Reconstruction with Free Medial Femoral Condyle Flap in Hand Bone Defects**
Percin Karakol, Eren Tuncer, Ali Can Aydın, Zeki Çelik, Muhammed Yasin Babacan
- PP 025 Orbital Exenteration and Reconstruction in Periorbital BCC**
Arda Tınaz, Tuğba Akgün, Mert Şen, Hasan Murat Ergani, Burak Yaşar, Ramazan Erkin Ünlü
- PP 026 A Retrospective Study of Cases in Which Mass Excision Was Performed with a Prediagnosis of Elastofibroma Dorsi**
Erk Evren, Merve Özger, Özge Eren, Abdurrahman Ercan Yurttaşer, Mustafa Yılmaz, Haluk Vayvada
- PP 027 Microstomia Correction with Gillies-Millard Technique**
Hasan Basri Çağlı, Merve Özger, Özge Eren, Ahmet Özdemir, Esra Aydın, Haluk Vayvada, Mustafa Yılmaz
- PP 028 Rapidly Progressive Non Clostridial Gas Gangrene due to Methicillin-resistant Staphylococcus aureus (MRSA) in a Patient with Nasofarenks Cancer History**
Semih Güner, Ömer Saraç, Şeyda Güray Evin
- PP 029 Lower Limb Amniotic Band Syndrome in a Newborn**
Abdurrahman Ercan Yurttaşer, Merve Terzi, Özge Eren, Yunus Can Tokgöz, Salih Can Sezer, Merve Özger, Cenk Demirdöver



12th

BAPRAS CONGRESS
Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

- PP 032 Amputation of the Penis as a Severe Complication of Circumcision and Management**
Aysel Pashazade, Muhammed Hüseyin Uçar, Süleyman Çeçen, Ramazan Kahveci
- PP 033 Layered Repair In Extensive Sacral Defects: Bilaminar Gluteal Flap**
Safa Eren Atalmış, Merve Terzi, Erk Evren, Ali Fuat Görgülü, Cenk Demirdöver
- PP 034 Surgical Approach of Giant Genital Conyloma Acuminata**
Kasım İlker Sandıkçı, Hasan Basri Çağlı, Fatih Berk Ateşşahin, Esra Aydın, Cenk Demirdöver, Adnan Menderes
- PP 035 Bilateral Osteochondroma at Mandible Condyle: A Case Report**
Furkan Çeştepe, Ibrahim Akpınar, Murat Seven, Egehan Güngörmez, Selahattin Galyan, Ömer Faruk Dilek
- PP 036 Our Approach to Fournier Gangrene Patients**
Sabri Öztürk, Furkan Çeştepe, Alper Taşan, Murat Seven, Aleyna Bulat, Yunus Emre Atmaca, Kamuran Zeynep Sevim
- PP 038 Reconstruction Procedures For Tissue Defects Occuring After Congenital Scoliosis Repair**
Saruhan Mahmutoglu, Ismail Ince, Aleyna Akbulat, Kamuran Zeynep Sevim, Soysal Baş
- PP 039 Propylthiouracil-Induced Necrotizing Vasculitis**
Nuh Evin, Fatih Osman Demir
- PP 040 Cutaneous Necrosis Following Endovascular Embolization by Using Ethylene-Vinyl Alcohol Copolymer for Arterio Venous Malformations**
Yasin Vural, Nuh Evin, Selma Sönmez
- PP 041 Hair-Thread Tourniquet Syndrome: Two Case Reports and Review of The Literature**
Nuh Evin, Joshgun Gasimov, Fatih Osman Demir
- PP 042 Total Glans Penis Amputation During Circumcision**
Perçin Karakol, Yasin Canbaz, Kadir Barış Tiryaki, Muhammet Acar, Muhammed Yasin Babacan, Serhat Inan



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

ORAL PRESENTATIONS



OP-001

High Definition Abdominoplasty: Myth or Truth?

Alpay Duran

Plastic, Reconstructive and Aesthetic Surgery, Private Practice, İstanbul / Türkiye

Introduction

To achieve more satisfactory cosmetic outcomes for body contouring, various energy-based liposuction techniques have emerged. Saldanha et al. introduced the term “lipoabdominoplasty” and adopted a standardized approach that involved selective undermining. However, it is crucial to prioritize safety measures when integrating liposuction into abdominoplasty in order to minimize complications [1]. The current tendency is to combine abdominoplasty and liposuction to improve outcomes. [2] Alfredo Hoyos proposed the techniques of liposuction, to reveal the underlying muscular structures, with the selective removal of fat. This recreates a more athletic body contour, with his high definition abdominoplasty procedure [3] In 2020, Simao published the results of his study, which included 146 patients, on high definition abdominoplasty performed using traditional liposuction techniques. This paper presents the author’s experience with the high definition abdominoplasty technique, with to use of ultrasound assisted liposuction (UAL) (LIPO SAVER, LHBiomed Co, Gangnam-gu, Korea) and power assisted liposuction (PAL) (Microaire, Charlottesville, VA, USA).

Materials and Methods

A retrospective study used patient data and chart reviews in a single surgeon’s private cosmetic practice. The study involved patients who underwent the high definition abdominoplasty technique with a combination of UAL and PAL from October 2018 through February 2023. A total of 102 healthy female were included in the study. Patients with illnesses affecting microcirculation, such as diabetes mellitus type I and II, cardiopulmonary diseases, post-bariatric patients, oral contraceptive usage, hereditary bleeding and thrombotic disorders, herbal product usage and those who had undergone revision abdominoplasties were excluded. Of the patients, 14 were smokers; all ceased smoking 15 days before and 30 days after the operation. The demographic data, operative records, complications, and lipoaspirate volumes of all patients were retrospectively reviewed. (Table I) All patients were operated under general anesthesia.

Skin Markings and Surgical Technique

The patients were marked 7 cm above the vulva while standing to determine the inferior level of the incision. If necessary, the scar line was extended laterally and posteriorly to ensure it remained within the underwear line. The area for excess skin excision was determined after liposuction was performed. The procedure was initiated under general anesthesia with the patient in a supine position. A super-wet solution was used for infiltration, comprising one liter of Ringer’s lactate, 10 cc of 2 % lidocaine, and one cc of 1:1000 epinephrine. The wetting solution was administered using the super-wet technique, followed by UAL/PAL (selected deep and superficial layers). The supraumbilical linea alba, linea semilunaris, and inguinal ligaments are accurately identified by employing 3.0 mm cannulas on the superficial plane and 4.0 mm cannulas on the deep plane.

The superficial skin flap was elevated above the deep fascia. In dissections involving the umbilicus, it was preserved and repositioned. A limited dissection plane was carried out up to the xiphoid process in the midline but not beyond the subcostal margin to maintain flap circulation. Rectus plication was performed in patients with muscle laxity. After bleeding control, two hemovac drains were inserted. The abdominoplasty flap was adapted using deep subcutaneous, close subcutaneous, and intradermal sutures.

Post-operative Follow-up

All patients in the operating room were administered antibiotic prophylaxis, which was then continued for a period of 10 days. Following the surgery, anticoagulant therapy using enoxaparin at a dose of 40 mg per day was initiated on the second day and continued for three days, totaling four doses. Patients were advised to wear a compression body suit and finally, an abdominal binder for at least one month. Subsequently, they were instructed to wear only the body suit during nighttime for an additional week.



Results

Between October 2018 through February 2023, a total of 102 abdominoplasties were performed. The mean age was 32.2 years, the body mass index (BMI) was 26.7 ± 3.3 kg/m², and all patients were female. Of the patients, 78 (76.5 %) underwent isolated high definition abdominoplasty, while 24 patients (23.5%) opted for additional procedures. Simultaneous breast surgery (breast augmentation, breast reduction, mastopexy) was performed in 24 patients. Patients were followed up for a mean period of 14 months (6–28 months). The mean duration of surgery was 174 min for this procedure (ranging from 146 to 210 min). The average aspirated fluid amount was 1440 cc (ranging from 800 cc to 2400 cc). Simultaneous umbilical hernia repair was performed in one patients.

The most common complications seen with high definition abdominoplasty were seroma in 5 patients (4.6 %), minor wound dehiscence in one patients (0.9%), major wound dehiscence in one patients (0.9%), umbilical stalk vascular compromise in one patient (0.9%). Overall complication rate was 7.3 %. Most of the patients (98.2%) were satisfied with their overall surgical outcome from the abdominoplasty procedure. The one patient with seroma and one patient with major wound dehiscence were the only patients who did not report a satisfied surgical outcome.

Discussion

Many surgeons have traditionally taken a cautious approach when considering the simultaneous use of liposuction during abdominoplasty procedures. Nonetheless, previous research indicates that the combination of liposuction and abdominoplasty does not lead to any additional adverse effects. [5, 6]. The safety of lipoabdominoplasty has been proven through a systematic review performed by Xia and colleagues, which involved a significant number of 14,061 patients. The findings of this review indicate that the lipoabdominoplasty group experienced statistically lower complication rates compared to those who underwent a traditional abdominoplasty [7]. Hoyos et al. recently conducted a study on a surgical procedure known as high-definition lipoabdominoplasty. The study involved performing 736 lipoabdominoplasty operations. The researchers reported a low occurrence of seroma (7.3%) and no instances of necrosis or infection. However, they did find that 4.3% of patients experienced flap morbidity (n = 29) [3]. In current study, seroma rate was 4.6%, which closely aligned with the findings of Hoyos et al.

Ghnnam et al. found that an increased BMI significantly increased operative time, hospital stay, and drainage amount, along with an increased risk of minor and major local complications. The incidence of complications following abdominoplasty may be as high as 80% in obese patients. [8] Au et al. reported that patients with a BMI less than 25 kg/m² had a 3.3% risk of developing minor complications (infection, seroma, and minor wound problems) and a 6.7% risk of developing a major complication (significant wound-healing problems, dehiscence, re-operation, and tissue necrosis). At a BMI of 25 to 30 kg/m², a total of 18.2% developed minor complications, while 13.6% developed major complications.[9]

In Simao's study about high definition abdominoplasty, patients with a BMI below 30 kg/m² were included, while patients with high tobacco consumption, poorly controlled diabetes, previous bariatric surgery, prior abdominoplasty, abdominal scars from previous surgeries, and lactating or postpartum women in their first year were excluded. The study successfully achieved favorable outcomes by combining traditional liposuction techniques with high definition abdominoplasty. The early minor complication rate was reported to be 2.74% (primarily seroma), while the major complication rate was also 2.74%. Deep vein thrombosis was detected in two patients, and distal flap necrosis was observed in two patients.[4] In our study it is observed that one patient developed major wound dehiscence (2-5 cm) and one patient developed umbilical stalk vascular compromise.

Conclusion

The high definition abdominoplasty creates a new perspective on the definition of abdominal aesthetic units. Based on previous studies, it is believed that patients with a BMI below 30 kg/m² should be selected for this operation, taking into account the risk factors and considering meticulous patient selection to minimize complication rates.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

References

- 1- Saldanha Or, Azevedo Sf, Delboni Ps, Saldanha Fil- Ho Or, Saldanha Cb, Urnbe Lh. LipoabdominoPlasty: The Saldanha Technique. Clin Plast Surg 2010; 37: 469-481.
- 2- Heller, J. B., Teng, E., Knoll, B. I., & Persing, J. (2008). Outcome analysis of combined lipoabdominoplasty versus conventional abdominoplasty. Plastic and Reconstructive Surgery, 121(5), 1821–1829.
- 3- Hoyos A, Perez ME, Guarin DE, Montenegro A (2018) A report of 736 high-definition lipoabdominoplasties performed in conjunction with circumferential VASER Lipo suction. Plast Reconstr Surg 142(3):662–675
- 4- Simão TS (2020) High definition lipoabdominoplasty. Aesthetic Plast Surg 44:2147–2157
- 5- Huger WE Jr. The anatomic rationale for abdominal lipectomy. Am Surg. 1979 Sep;45(9):612-7.
- 6- Stevens WG, Cohen R, Vath SD, Stoker DA, Hirsch EM. Does lipoplasty real-ly add morbidity to abdominoplasty? Revisiting the controversy with a series of 406 cases. Aesthet Surg J. 2005 Jul-Aug;25(4):353-8.
- 7- Xia Y, Zhao J, Cao DS. Safety of lipoabdominoplasty versus abdominoplasty: a systematic review and meta-analysis. Aesthet Plast Surg 2018. <https://doi.org/10.1007/s00266-018-1270-3>.
- 8- W. Ghnham et al. The effect of body mass index on outcome of abdominoplasty operations World J Plast Surg (2016)
- 9- Au K, Hazard SW 3rd, Dyer AM, Boustred AM, Mackay DR, Miraliakbari R. Correlation of complications of body contouring surgery with increasing body mass index. Aesthet Surg J. 2008;28:425–9.

Keywords: UAL, PAL, lipoabdominoplasty, high definition, abdominoplasty

Table 1

	Complications	High Definition Abdominoplasty
	Number of patients	102 (100%)
Minor complications	Seroma	5 (4.6 %)
	Wound dehiscence 0-2 cm	1 (0.9 %)
Major complications	Hematoma	-
	Wound dehiscence 2-5 cm	1 (0.9 %)
	Incisional Vascular compromise	-
	Pulmonary embolism	-
	Umbilical stalk vascular compromise	1 (0.9 %)
	Pneumonia	-
	Serious infections requiring iv antibiotics	-
Overall Complication		8 (7.3 %)

Observed complication types



OP-002

Lipoabdominoplasty: Comparing UAL vs UAL/PAL Techniques on Complication Profile and Patient Safety

Alpay Duran, Hasan Buyukdogan

Plastic, Reconstructive and Aesthetic Surgery, Private Practice, İstanbul / Türkiye

Introduction

The deformities of the abdominal area, including skin flaccidity, lipodystrophy, and diastasis of the abdominal muscles, present both aesthetic and functional challenges. To attain more satisfactory cosmetic results, liposuction techniques have evolved. Saldanha and his team introduced the term “lipoabdominoplasty” and adopted a standardized approach that involved selective undermining, which was reduced by 30% compared to the traditional technique to preserve the abdominal perforators. In addition, the authors conducted liposuction in the supraumbilical region using a 3–4 mm cannula and were mindful of maintaining an adequate amount of subdermal fat thickness to avoid potential vascular damage. [1] Nevertheless, prioritizing safety measures when integrating liposuction into abdominoplasty is critical to minimize complications.

The lipoabdominoplasty procedure commonly employs two liposuction techniques: power-assisted liposuction (PAL) and ultrasound-assisted liposuction (UAL). The principal goal of these techniques is to preserve the abdominal wall perforators near the rectus abdominis muscles through careful central undermining and selective liposuction. This study intends to assess the complications and outcomes related to the use of UAL (LIPO SAVER, LHBiomed Co, Gangnam-gu, Korea) versus a combination of UAL and PAL (Microaire, Charlottesville, VA, USA) within the abdominoplasty procedure.

Materials and Methods

Patients

A retrospective study used patient data and chart reviews in a single surgeon’s private cosmetic practice. The study involved patients who underwent the lipoabdominoplasty technique with UAL and a combination of UAL and PAL (UAL/PAL) over 4 years from October 2017 through December 2022. A total of 280 patients (272 female, eight male) who underwent standard or fleur-de-lis abdominoplasty due to skin excess, musculofascial laxity, and lipodystrophy were included in the study. Patients with illnesses affecting microcirculation, such as diabetes mellitus type I and II, cardiopulmonary diseases, oral contraceptive usage, hereditary bleeding and thrombotic disorders, and those who had undergone revision abdominoplasties were excluded.

Of the patients, 39 were smokers; all ceased smoking 15 days before and 30 days after the operation. Among the participants, 119 underwent lipoabdominoplasty using UAL, and 161 underwent lipoabdominoplasty using UAL/PAL. No traditional abdominoplasty without liposuction technique was performed on any patient. The demographic data, operative records, complications (Table I), and details of performed liposuction techniques and lipoaspirate volumes of all patients were retrospectively reviewed. All patients were operated on by the senior author under general anesthesia.

Statistical Analysis

The Statistical Package for the Social Sciences (SPSS version 26.0.0.0; IBM SPSS Statistics, IBM Corporation, Armonk, NY, USA) was utilized for the statistical analysis. Descriptive statistics were conducted based on the type and distribution of variables. Continuous variables were described as means \pm standard deviation (SD), while categorical variables were presented with the number of patients and percentages. To compare the percentage of complications between groups, the G-test was performed. A significance level of $P \leq 0.05$ was considered statistically significant.

Results

Between October 2017 and December 2022, a total of 280 abdominoplasties were performed. The mean age was 39.2 ± 14.9 years, the body mass index (BMI) was 28.6 ± 6.9 kg/m², and most patients were women (97.15%). Of the patients, 202 (72.1%) underwent isolated lipoabdominoplasty, while 78 patients (27.9%) opted for additional procedures. Simultaneous breast surgery (breast augmentation, breast reduction, mastopexy, or gynecomastia) was performed in 55 patients (19.6%), and simultaneous extremity surgery was performed in 23 patients (8.2%).



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 15 September
Congress

Eight patients received ES transfusion postoperatively (2.8%). Patients were followed up for a mean period of 22 months (8–38 months). The mean duration of surgery was 154 min for UAL and UAL/PAL abdominoplasty procedures (ranging from 139 to 210 min). The mean duration of combined surgery was 275 min (ranging from 240 to 355 min). The average aspirated fluid amount was 2140 cc (ranging from 800 to 3800 cc). Simultaneous umbilical hernia repair was performed in six patients (2.1%).

The most common complications seen with UAL abdominoplasty were seroma in ten patients (8.4%), minor wound dehiscence in two patients (1.6%), hematoma in two patients (1.6%), incisional vascular compromise in one patient (0.8%), umbilical stalk vascular compromise in one patient (0.8%), confirmed pulmonary embolism in one patient (0.8%), pneumonia in one patient (0.8%), and a serious infection requiring IV antibiotics in one patient (0.8%). On the other hand, the most common complications seen with UAL/PAL abdominoplasty were seroma in nine patients (5.5%), minor wound dehiscence in one patient (0.6%), major wound dehiscence in one patient (0.6%), and incisional vascular compromise in three patients (1.9%). There was no significant difference in surgical duration between the UAL and UAL/PAL groups.

BMI above 30 kg/m² was associated with an increased risk of both minor and major complications in the UAL abdominoplasty group ($P = 0.005$ and 0.001 , respectively). (Table II) On the other hand, BMI over 30 kg/m² was associated with an increased risk of major complications in the UAL/PAL abdominoplasty group ($P = 0.011$). (Table III) BMI over 30 kg/m² was associated with an overall increased rate of minor and major complications in both the UAL and UAL/PAL groups ($P = 0.001$ and 0.001 , respectively). There was no statistical difference between the UAL and UAL/PAL groups regarding complications, but a slight increase in the overall complication rate was observed in the UAL group ($P = 0.061$).

Discussion

Simultaneous liposuction procedures during abdominoplasty operations have long been approached conservatively by many surgeons. However, previous studies have shown that combining liposuction and abdominoplasty does not result in additional morbidity [2].

Vieira and colleagues conducted a retrospective analysis of 9637 cases of lipoabdominoplasty compared to 1553 cases of abdominoplasty. Their findings indicated that lipoabdominoplasty had a significantly lower overall complication rate and a significantly lower seroma rate [3]. The study also revealed that the volume of lipoaspirate was not linked to an increased risk of complications. Similarly, other researchers have also concluded that performing liposuction and abdominoplasty concurrently does not lead to a higher risk of complications [4-6].

Sozer et al. proposed that performing liposuction alongside abdominoplasty presents numerous advantages, in addition to achieving a more aesthetically pleasing body shape and reducing the burden on the tissues supplied by lateral subcostal perforators. In their study, they propose that the success of lipoabdominoplasty relies on preserving the perforators of the deep epigastric vessels in the superior territory of the abdominal wall. By ensuring the preservation of these perforators, liposuction of the flap can be performed with low complication rates.[7]

The safety of lipoabdominoplasty has also been demonstrated in a systematic review conducted by Xia and colleagues. This review involved a substantial sample size of 14,061 patients and found statistically fewer complications in the lipoabdominoplasty group than a traditional abdominoplasty. These studies highlight the safety and benefits of simultaneous liposuction procedures in abdominoplasty operations [8].

Upon evaluation of the results, it was determined that both minor and major complication rates were significantly higher in patients with a BMI over 30 kg/m² in the UAL abdominoplasty group compared to those with a BMI below 30 kg/m². In the UAL/PAL abdominoplasty group, particularly in patients with a BMI over 30 kg/m², significantly higher rates of major complications were observed. When comparing the UAL and UAL/PAL abdominoplasty groups regarding complications, although there was no difference in total complication rates, a slight increase was observed in the UAL abdominoplasty group with a value close to statistical significance.

In a study conducted by Troell comparing UAL and PAL/safe lipoabdominoplasty groups, it was reported that both groups experienced increased complication rates with higher BMI, and the UAL group achieved better aesthetic results and showed reduced bruising compared to PAL technology [9]. In our study, we observed that using the PAL technique in combination with UAL increased the definition of the abdominal area.



In their most recent study, Hoyos et al. conducted “high-definition lipoabdominoplasty” by performing 736 PAL/UAL liposuction operations. They described a low rate of seroma (7.3%) and no cases of necrosis or infection, but 4.3% of patients experienced flap morbidity (n = 29) [10]. In our study, where we compared the use of UAL and UAL/PAL techniques in abdominoplasty, we found a seroma rate of 5.5%, similar to the study conducted by Hoyos et al., where they used the UAL/PAL technique and referred to it as high-definition abdominoplasty. However, in the abdominoplasty group using only UAL, the seroma rate was slightly higher at 8.4%. At this stage, it is believed that due to the long learning curve for both UAL and PAL technologies, especially with the avoidance of aggressive PAL and the limited use of high energy levels (below 80%) with continuous mode during the abdominoplasty, it reduces flap morbidity and bleeding volume. When evaluated specifically in terms of BMI, we observed that the use of PAL technology in the UAL/PAL applied abdominoplasty (high-definition abdominoplasty) group, particularly in the hands of experienced professionals, resulted in lower rates of minor and major complications compared to lipoabdominoplasties performed with UAL and cannula assistance. We believe this is due to a more uniform aspiration with PAL and better adjustment of abdominal flap thickness.

Conclusion

The lipoabdominoplasty surgical procedure with UAL and UAL/PAL offers surgeons a comprehensive set of guidelines for preoperative, intraoperative, and post-operative stages to minimize the occurrence of complications. BMI over 30 kg/m² has been shown to have an adverse effect on the profile of complications in both groups, resulting in an increased risk, especially for major and minor complications such as seroma in the UAL group

References

- 1- Saldanha Or, Federico R, Daher Pf, Malheiros Aa, Carneiro Pr, Azevedo Sf, Saldanha Filho Or, Sal- Danha Cb. Lipoabdominoplasty. *Plast Reconstr Surg* 2009; 124: 934-942.
- 2- Stevens WG, Cohen R, Vath SD, Stoker DA, Hirsch EM. Does lipoplasty really add morbidity to abdominoplasty? Revisiting the controversy with a series of 406 cases. *Aesthet Surg J*. 2005 Jul-Aug;25(4):353-8.
- 3- Vieira BL, Chow I, Sinno S, et al. Is there a limit? A risk assessment model of liposuction and lipoaspirate volume on complications in abdominoplasty. *Plast Reconstr Surg*. 2018;141:892–901.
- 4- Swanson E. Prospective clinical study of 551 cases of liposuction and abdominoplasty performed individually and in combination. *Plast Reconstr Surg Glob Open*. 2013;1:e32.
- 5- Xia Y, Zhao J, Cao DS. Safety of lipoabdominoplasty versus abdominoplasty: a systematic review and meta-analysis. *Aesthetic Plast Surg*. 2019;43:167–174.
- 6- Smith LF, Smith LF, Jr. Safely combining abdominoplasty with aggressive abdominal liposuction based on perforator vessels: technique and a review of 300 consecutive cases. *Plast Reconstr Surg*. 2015;135:1357–1366.
- 7- Sozer, S.O.; Basaran, K.; Alim, H. Abdominoplasty with Circumferential Liposuction: A Review of 1000 onsecutive Cases. *Plast. Reconstr. Surg*. 2018, 142, 891–901.
- 8- Xia Y, Zhao J, Cao DS. Safety of lipoabdominoplasty versus abdominoplasty: a systematic review and meta-analysis. *Aesthet Plast Surg* 2018. <https://doi.org/10.1007/s00266-018-1270-3>.
- 9- Troell RJ. Lipoabdominoplasty: comparing ultrasound-assisted and power-assisted techniques [published online June 15, 2022]. *Am J Cosm Surg*.
- 10- Hoyos A, Perez ME, Guarin DE, Montenegro A (2018) A report of 736 high-definition lipoabdominoplasties performed in conjunction with circumferential VASER liposuction. *Plast Reconstr Surg* 142(3):662–675

Keywords: lipoabdominoplasty, complication, UAL, PAL, BMI



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Table 1

	Complications	UAL with abdominoplasty	UAL/PAL with abdominoplasty
	Number of patients	119-42.5 %	161-57.5 %
Minor complications	Seroma	10-8.4 %	9-5.5 %
	Wound dehiscence 0-2 cm	2-1.6%	1-0.6%
Major complications	Hematoma	2-1.6%	-
	Wound dehiscence 2-5 cm	-	1-0.6%
	Incisional Vascular compromise	2-1.6%	3-1.9%
	Pulmonary embolism	1-0.8%	-
	Umbilical stalk vascular compromise	1-0.8%	-
	Pneumonia	1-0.8%	-
	Serious infections requiring iv antibiotics	1-0.8%	-
Overall Complication		20-16.8%	14-8.6%

Observed complication types

Table 2

BMI	<25	25-30	30-35	>35	P value
Number of patients	11	68	28	12	-
Minor complications	1	2	5 ++	4++	0.005
Major complications	1	1	3 +	3+	0.017
Overall complication	2	3	8 +++	7 +++	0.001

Observed Complications by UAL with Abdominoplasty

Table 3

BMI	<25	25-30	30-35	>35	P value
Number of patients	13	94	39	15	-
Minor complications	1	3	4	3	0.079
Major complications	0	0	2 *	2 *	0.011
Overall complications	1	3	6 ***	5 ***	0.001

Observed Complications by UAL/PAL with Abdominoplasty



OP-003

Breast Auto-Augmentation Technique With Inferior Pedicle Derma-Glandular Flap Redefines Mastopexy and Augmentation Procedures

Hasan Buyukdogan, Oguz Cortuk

Plastic, Reconstructive and Aesthetic Surgery, Private Practice, İstanbul / Türkiye

Introduction

Breast auto-augmentation (BAA) is a surgical approach that involves the use of an inferior pedicle dermoglandular flap to enhance breast fullness and projection during mastopexy (breast lift) procedures. This technique aims to address the desires of women seeking breast enhancement without resorting to the use of breast implants. By redistributing existing breast tissue, BAA achieves a dual purpose of mastopexy and augmentation, making it an intriguing alternative for patients with specific aesthetic goals.

Methods

The study spanned a timeframe from January 2021 to June 2023 and included a total of 222 patients who underwent 444 BAA procedures. The distribution of procedures consisted of 222 bilateral cases, and 9 revisions. These patients presented with a variety of breast conditions, including primary or secondary ptosis and loss of fullness in the upper pole, which were addressed using the BAA technique. Additionally, 48 patients underwent BAA after explantation and capsulectomy procedures. Within the patient pool, 36 individuals (16%) had previously undergone mastopexy, and 24 patients (10%) had undergone reduction mammoplasty. The average age of the patients was 38 years, ranging from 23 to 52 years. Rigorous preoperative evaluations were conducted, involving detailed preoperative markings and photographic documentation. The follow-up period ranged from 6 months to 2 years, with an average follow-up duration of 14 months.

Results

The study's findings revealed a notable range in the elevation of the nipple, spanning from 6 to 10 cm, with an average nipple elevation of 7.5 cm. Encouragingly, the postoperative phase witnessed complete wound healing in the vast majority of cases, with 195 patients (87%) experiencing no complications during the recovery process. However, it is important to note that the study documented three instances of complications. Specifically, 6 cases (3%) involved hematomas, and 3 cases (1%) documented partial necrosis of the nipple-areola complex. As a response to the level of mastopexy achieved, 9 patients (4%) expressed dissatisfaction and subsequently pursued additional corrective procedures.

Discussion

Considering the study's findings, it can be concluded that the application of BAA using an inferior pedicle dermoglandular flap is a versatile and effective surgical technique. This technique caters to the needs of individuals seeking breast enhancement while avoiding the use of implants. The procedure not only addresses breast ptosis and fullness loss but also offers a feasible solution for patients who have undergone explantation and capsulectomy procedures. Importantly, BAA showcases its capability to achieve enhanced breast projection and upper pole fullness, aligning with the aesthetic aspirations of patients.

The study, however, underscores the importance of recognizing the potential for complications, as evidenced by the three reported cases. While the majority of patients experienced successful outcomes, the instances of hematoma formation and partial necrosis emphasize the necessity for meticulous surgical techniques and vigilant postoperative care. Moreover, the study brings to light the subjective nature of patient satisfaction, as a subset of patients sought further intervention to achieve their desired mastopexy outcome.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023
13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org

Conclusions

The study's comprehensive analysis sheds light on the potential of the breast auto-augmentation technique as a suitable alternative for individuals seeking breast enhancement and mastopexy without resorting to breast implants. The study's exploration of both positive outcomes and potential complications underscores the importance of a patient-centered approach, precision in surgical execution, and ongoing research to refine and optimize the procedure's effectiveness and safety.

References

- 1- Hammond, Dennis C., and Elizabeth A. O'Connor. "The lower island flap transposition (LIFT) technique for control of the upper pole in circumvertical mastopexy." *Plastic and Reconstructive Surgery* 134.4 (2014): 655-660.
- 2- Yilmaz, Kahraman Berkhan. "A modified superior pedicle mastopexy technique with an inferolateral-based auto augmentation flap." *Aesthetic plastic surgery* 45 (2021): 884-892.
- 3- Liu, Yue, and Jie Luan. "A Modified Superior Pedicle Mastopexy Technique with an Inferolateral-Based Auto Augmentation Flap." *Aesthetic Plastic Surgery* 46.1 (2022): 552-553.
- 4- Ding, Hao, et al. "The combination of inferior pedicle method and dermal suspension sling technique: one new efficient method for breast reduction." *International Journal of Clinical and Experimental Medicine* 8.4 (2015): 6613.
- 5- Mahboub, Tarek, et al. "Optimization of the dermal wrap in inferior pedicle reduction mammoplasty: an Egyptian experience." *European Journal of Plastic Surgery* 42 (2019): 259-264.
- 6- Graf, Ruth M., et al. "Breast auto-augmentation (mastopexy and lipofilling): an option for quitting breast implants." *Aesthetic plastic surgery* 43 (2019): 1133-1141.
- 7- Ono, Marcelo T., and Bruno M. Karner. "Four-step augmentation mastopexy: lift and augmentation at single time (LAST)." *Plastic and Reconstructive Surgery Global Open* 7.11 (2019).
- 8- Raafat, Sarah Sherif, et al. "Autologous mastopexy and autoaugmentation of the breast." *Plastic and Reconstructive Surgery Global Open* 8.10 (2020).
- 9- Papadopoulos, Sarantos, et al. "Fat grafting and auto-augmentation mastopexy after breast implant removal: technique and evaluation of outcomes using BREAST-Q." *Aesthetic Surgery Journal* 41.6 (2021): NP388-NP401.
- 10- Kirwan, Laurence, Umar Wazir, and Kefah Mokbel. "Simultaneous salvage auto-augmentation: contemporary strategy for management of the breast explantation patient." *Plastic and Reconstructive Surgery-Global Open* 11.3 (2023): e4860.

Keywords: auto-augmentation, breast, dermoglandular flap, implant, mastopexy



OP-004

Comprehensive Assessment of the Functional Outcomes of Partial Turbinectomy: A Prospective Clinical Trial

Murat Celik, Sinan Kadir Altunal, Uğur Koçer, Arda Kucukguven

Ankara Training and Research Hospital, Ankara / Türkiye

Introduction

Septorhinoplasty is a commonly performed surgery to address both aesthetic and functional issues in the nose. While the aesthetic outcomes of the surgery may receive more attention, the functional results are equally important for patient satisfaction [1]. Functional problems include but are not limited to difficulty breathing, sleep disorders, sinus infections, headaches, and a reduced sense of smell [2, 3].

Despite numerous studies on the benefits and complications of inferior and middle turbinate interventions separately [4], there is a lack of prospective clinical studies that comprehensively investigate the long-term functional outcomes of middle and inferior turbinectomy together. To address this gap, a prospective study has been designed to investigate the effects of inferior and middle turbinate surgery on breathing, headaches, sense of smell, and ENS.

Material and Methods

This was a single-center, pragmatic, interventional, prospective study investigating the effect of partial middle and inferior turbinectomies on the patients' breathing, olfaction, headache, and ENS. The study was conducted in our clinic between February 2021 and February 2023. All patients scheduled for septorhinoplasty were enrolled in the study. Patients with a history of septorhinoplasty, turbinate reduction, or turbinectomy, under 18 years of age were excluded from the study.

Patient Selection

The study recruited individuals who applied for septorhinoplasty and evaluated their respiratory problems using The Nasal Obstruction Symptom Evaluation (NOSE) Scale, a widely recognized questionnaire designed to assess nasal obstruction [5]. Patients with a score above 30 were further examined and considered for turbinectomy. Nasal endoscopy and anterior rhinoscopy were conducted before and after applying topical decongestants to assess the size of the inferior and middle turbinates. In this study, the grading system developed by Camacho et al. was utilized to assess the degree of inferior turbinate hypertrophy [6]. Patients with grade 4 (76%–100% of total airway space) inferior turbinates were recommended for inferior turbinectomy, while those with concha bullosa or severely hypertrophic middle turbinates were recommended for middle turbinectomy. A middle turbinate was considered severely hypertrophic if the distance between the septum and middle turbinates was less than 2 mm.

Patients were excluded from the study if they had a history of septorhinoplasty or allergic rhinitis, underwent any intervention on the turbinates, were under 18 or over 65 years of age, or had a NOSE score of less than 30. The study group consisted of patients who had undergone partial inferior or middle turbinectomy, or a combination of both, during septorhinoplasty (Figure 1).

Evaluation of Functional Results

The NOSE scale is useful in identifying changes in breathing before and after surgery and determining the extent of nasal obstruction in the patient.

The ASOF questionnaire, which stands for "The assessment of self-reported olfactory functioning and olfaction-related quality of life," is a validated tool for assessing subjective olfactory functions in normosmic subjects and patients with olfactory dysfunction [7]. Two components of the ASOF were used to evaluate symptoms: Olfactory-related quality of life (ASOF-ORQ), and subjective olfactory capability (ASOF-SOC).



For the assessment of headaches, patients were asked to report the number of headaches they experienced in the previous month, with a range from 0 to 10 attacks. They were also asked to rate the severity of their pain using a visual analog scale (VAS) that ranges from 0 to 10.

To evaluate the development of ENS, patients completed the Empty Nose Syndrome 6-Item Questionnaire (ENS6-Q), which did not have a Turkish version [8]. Patients with post-operative scores above 12 were considered to have ENS.

Patient demographic data, excised turbinates, and postoperative bleeding were also recorded.

Operative Technique

The same surgeon (A.K) used the same surgical technique for partial turbinectomies, including endoscopic examination of middle and inferior turbinates during septorhinoplasty. Partial turbinectomy procedures were carried out on patients with grade 4 hypertrophic turbinates or severely hypertrophic concha bullosa, and submucosal electrocauterization was used for concomitant grade 2 (%26-50) and grade 3 (%51-75) inferior turbinates (Figure 2). All turbinectomy procedures were performed endoscopically, and intraoperative correction of cartilaginous and/or osseous septal deviations was performed on all patients.

For inferior turbinate excision, first, the area was infiltrated with a 1% lidocaine and 1/80000 adrenaline solution. A Freer elevator was used to lateralize and then medialize the inferior turbinate before excision. A Gorney-Freeman serrated scissors were used to partially remove the mucosa, soft tissue, and bone along the entire length of the inferior 1/3 of the inferior turbinate. The amount of excision was based on the size, shape, and position of the turbinate, with care taken to leave approximately 60-65% of the inferior turbinate to prevent complications (Figure 3).

Patients with obstructive middle turbinates had the inferior 2/3 of the middle turbinate or the entire concha bullosa removed along its entire length using Gorney-Freeman serrated scissors. After the area was infiltrated a 1% lidocaine and 1/80000 adrenaline solution excision was carried out. The stalk of the concha bullosa, which corresponds to the upper 1/3 of the middle turbinate, was left intact to prevent anosmia. Bipolar cautery was used to cauterize the rough surface following the partial excision to prevent postoperative bleeding (Figure 4).

Statistical analysis was performed using the R program [9]. Kruskal Wallis test was used to analyze the variance, and Mann Whitney-U test was used to compare medians of the data. Descriptive statistics are used to calculate and summarize the data logically.

Results

Over the course of 2 years, we performed rhinoplasty on 212 patients. 30 of these patients were included in the study, as they underwent partial inferior and/or middle turbinectomy. 3 patients were lost to follow-up and excluded from the study. 27 patients completed the study and their data were analyzed in the study (Figure 5,6). Of the 27 patients included, 8 had unilateral inferior turbinate excisions, 10 had unilateral middle turbinate excisions, and 9 had combined middle and inferior turbinate excisions (Figure 7). The study group had a total of 25 female patients and 2 male patients, with an average age of 26,6±6.

The mean NOSE scores were 61.5±20.4 preoperatively, 34.3 ±20.2 at 1 month, 21.2 ±12.7 at 3 months, 19.4 ±14.6 at 6 months, and 18±20.1 at one year postoperatively (Figure 8). The NOSE scores showed a continuous decline with time. Kruskal Wallis Test showed there was a difference between preoperative and postoperative periods and the Mann-Whitney U test showed this difference was statistically significant ($p<0,05$).

Before the operation, the mean number of headaches was 4.37±3.04. At 1 month, it was 3.63 ±2.5, at 3 months it was 2.74 ±1.93, at 6 months it was 2.7 ±1.71, and at 1 year postoperative, it was 2.15±1.38. A statistically significant difference was found between pre-operative and first-year-postoperative periods ($p<0,05$).

Headache VAS scores were, 5,59±2,44 preoperatively, 4,22 ±2,58 at 1 month, 3,33 ±2,13 at 3 months, 3,56 ±2,04 at 6 months, and 2,56±1,89 at one year postoperatively. A statistically significant difference was observed between all periods, particularly at the 3rd, 6th month, and one year postoperative ($p<0,05$). The severity of headaches was noted to decrease gradually from the pre-operative period until the first year after the operation ($p<0,05$).



The mean ASOF-ORQ scores of all patients did not show any significant difference across all periods. The analysis of 8 patients with smell-related problems affecting their quality of life preoperatively (as indicated by ASOF-ORQ scores below the cutoff point) showed statistically significant improvement between all postoperative periods compared to preoperative results ($p < 0.05$). At the postoperative first month, the number decreased to 5 patients, and at the postoperative third, sixth months, and one year, only one patient reported a smell-related quality of life problem according to their ASOF-ORQ scores.

The mean ASOF-SOC score was worsened postoperative first month compared to before the operation. It gradually got better and there was no difference compared to the preoperative period by the end of first-year post-operatively. Two out of the three patients with abnormal olfactory capabilities showed normal capabilities at the post-operative first year according to their ASOF-SOC scores.

The ENS6-Q scores were measured at different time points after the surgery, and the results were as follows: 6.78 ± 4.92 at 1 month postoperatively, 3.48 ± 2.93 at 3 months postoperatively, 3.04 ± 3.11 at 6 months postoperatively, and 2.22 ± 4.13 at the first year postoperatively. No patients had an ENS6-Q score higher than 12.

No serious bleeding was observed in any of the patients. In the anterior rhinoscopy examination performed at the first year postoperatively, adhesions and abnormal crusting were not observed in any of the patients.

Discussion

In this study, the preoperative mean NOSE score of patients improved significantly, decreasing from 61.5 to 18 at the postoperative first year. This finding showed partial turbinectomy can resolve obstruction problems in nasal airways which correlate with the literature [10]. However, it should be noted septoplasty, submucosal electrocauterization, and functional rhinoplasty might also impact NOSE scores.

Even though the analysis of ASOF-ORQ scores for all patients did not reveal any difference, those with scores below the cutoff points demonstrated a statistically significant improvement. This shows partial turbinectomy can be effective against olfactory disorders in selected patients. This finding also can be considered as a new possible indication for partial turbinectomy but further clinical studies with larger patient groups are needed to support this.

In this particular study, 19 patients had severe concha bullosa and 17 had severe inferior turbinate hypertrophy. The number of headaches decreased significantly at the postoperative first year compared to the preoperative period. Also, VAS scores gradually improved over time, the lowest score being the postoperative first year. This study indicates that turbinectomy surgery can relieve headaches in patients with impaired NOSE scores. This finding may indicate that addressing obstructive elements causing rhinogenic headaches can improve these patients' symptoms. Obstructive elements such as enlarged turbinates and deviated septum should be managed intraoperatively according to patients' preoperative symptoms.

ENS is a feared and controversial complication of excessive turbinectomy surgery, first coined by Kern and Moore [11]. Surgeons must be cautious to avoid this complication, as treatment is not always successful and can greatly reduce a patient's quality of life [12]. No ENS cases were encountered among our patients, perhaps it was because we took care not to damage the surrounding mucosa and performed partial excisions.

Our study had several limitations, including a small sample size, no control groups, and a lack of randomization. The number of patients was limited by the time frame of the study and strict inclusion criteria. The inclusion criteria were very selective, only including patients with advanced middle concha bullosa or severe inferior turbinate hypertrophy. Our results might also have been affected by the functional rhinoplasty and septoplasty procedures. We also did compare the inferior and middle turbinate surgeries separately due to the heterogeneity of our data as we performed isolated or combined partial turbinectomies in our patients.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

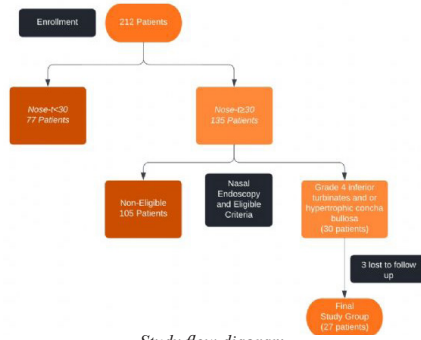
www.balkanplasticsurgery.org

Conclusion

Inferior and middle partial turbinectomy procedures, often done in conjunction with septorhinoplasty, are effective options for treating inferior and middle turbinate hypertrophy. This study showed these procedures can improve breathing, enhance the sense of smell and reduce headaches with correct patient selection. Although there is a risk of the development of ENS, this risk can be minimized with appropriate techniques. Further studies with larger patient groups are needed to clarify and fully demonstrate the safety and effectiveness of partial inferior and middle turbinectomy.

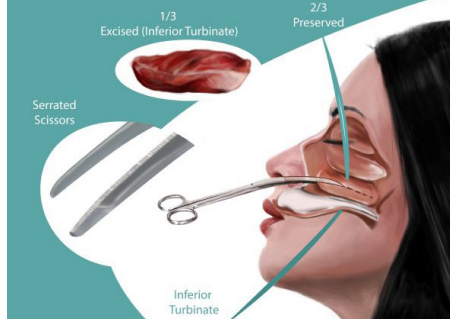
Keywords: Turbinate Surgery, Olfaction, Partial Turbinectomy, Headache, Empty Nose Syndrome

Figure 1



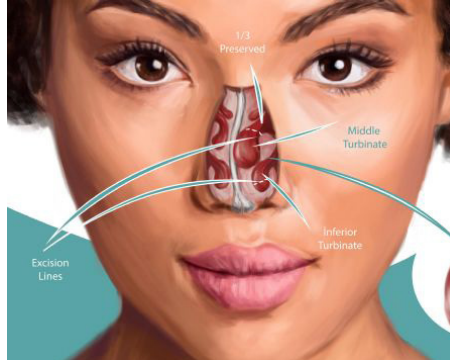
Study flow diagram

Figure 2



Partial Inferior Turbinectomy Technique. Under the vision of nasal endoscopy, Gorney-Freeman serrated scissors were introduced to excise the inferior 1/3 of the inferior turbinate along the entire length

Figure 3



Partial Middle Turbinectomy Technique. Under the vision of nasal endoscopy, Gorney-Freeman serrated scissors were introduced to excise the inferior 2/3 of the middle turbinate while preserving the stalk of the middle turbinate



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-005

Forehead Contouring as an Adjunct to Rhinoplasty: Evaluation of the Effect on Facial Appearance, Personal Traits and Patient Satisfaction

Oguzhan Demirel

Aydın University Medicine School Department of Plastic Reconstructive and Aesthetic Surgery, İstanbul / Türkiye

Background

The nose has a great impact on facial beauty and appearance. Therefore rhinoplasty is one of the most performed procedures worldwide. However, considering the varying degrees of cosmetic operations holistic approach to face is essential to achieve more successful results. In order to this, the forehead is noteworthy with its gender-related features and important relation to the nose. The purpose of this study is to assess the effect of forehead contouring with fat grafting adjunct to rhinoplasty on personal traits, facial appearance and patient satisfaction.

Methods

A total of 15 patients who underwent rhinoplasty and forehead contouring with fat grafting were enrolled in this retrospective study. Facial appearance and personal traits were evaluated via subject Global Aesthetic Improvement Scale (S-GAIS), and patient satisfaction was assessed with custom design Forehead Rhinoplasty Outcome Evaluation Questionnaire (F/ROE-Q). Forehead inclination was calculated as an objective indicator of fat graft survival and contour improvement. Pre- and postoperative photographs were taken and used for evaluation.

Results

According to the F/ROE-Q score, mean total preoperative score was 9,13 and the mean total postoperative score was 24,86 ($p<0,01$). High postoperative satisfaction scores were observed in all patients. Statistically significant improvement was observed in attractiveness, femininity, youthfulness, facial harmony, forehead contour, facial profile view parameters based on S-GAIS assessment. The mean forehead inclination angle was 19,04° preoperatively and 16,74° postoperatively.

Conclusion

With the important benefits such as higher patient satisfaction and improvement on facial appearance and personal traits, forehead contouring with fat grafting was an efficient and applicable procedure adjunct to rhinoplasty.

Keywords: Forehead contouring, Forehead lipofilling, Rhinoplasty, Facial appearance, Personal traits

Figure 1



Anthropometric landmarks and measurement lines

Figure 2



Preoperative and immediate postoperative result of forehead contouring and rhinoplasty in the operation room



12th

BAPRAS CONGRESS
Selçuklu Convention Center Konya, TÜRKİYE



2023
13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org

Figure 3



A 22-year-old patient with severe midfrontal depression, mild forehead flatness and prominent supraorbital ridge. Preoperative and postoperative front, oblique, lateral and basilar view photographs at 12 months after 15 cc fat injection for forehead contouring.

Table 1

Trichion point (Tr)	Intersection between midline of forehead and hairline
Superion point (Sp)	Most superior aspect of the forehead when the forehead is either rounded or angular in contour
Glabella point (G)	Intersection between midline of forehead and most prominent point of inter-eyebrow plane
Forehead anterior point (FA)	The midpoint between trichion and glabella for foreheads with flat contour or the midpoint between superion and glabella for foreheads with rounded or angular contour.

Anthropometric landmarks and their definitions

Table 2

	Mean	Std. Deviation	Minimum	Maximum	Asymp. Sig. (2-tailed)
Attractiveness	4.0667	.96115	2.00	5.00	0.001*
Femininity	3.9333	.70373	3.00	5.00	0.001*
Youthfulness	4.4000	.91026	2.00	5.00	0.001*
Facial harmony	4.2667	.70373	3.00	5.00	0.001*
Forehead contour	4.4667	.91548	2.00	5.00	0.001*
Facial profile view	4.8667	.35187	4.00	5.00	0.000*

Descriptive statistics and p-value for S-GAIS

Table 3

Descriptive statistics	Range	Minimum	Maximum	Mean	Std. Deviation
Preoperative inclination angle	19.50	11.60	31.10	19.0467	6.05060
Postoperative inclination angle	15.30	10.90	26.20	16.7467	4.47132
Pre- and postoperative differences	6.50	.20	6.70	2.3000	2.00107

Descriptive statistics for forehead inclination angle



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-006

Prevalence of Body Dysmorphic Disorder (BDD) by Body Regions and Demographic Characteristics

Silan Kanas Seymen, Özer Özmut, Burak Yaşar, Hasan Murat Ergani, Ramazan Erkin Ünlü

Ankara Bilkent City Hospital University of Health Sciences, Ankara / Türkiye

Background

Body dysmorphic disorder (BDD) is characterized by a preoccupation with one or more perceived imperfections or defects in one's own body appearance that are either invisible or mildly visible. It usually begins during adolescence, but because BDD has not been examined in large epidemiological studies, it can take many years for the disorder to be recognized, and the prevalence of the disorder is largely unknown. The aim of this study was to quantify the prevalence of BDD according to body regions and demographic information.

Methods

In 2023, a face-to-face questionnaire method was applied to 100 patients with an average age of 28 years who applied to the hospital for aesthetic surgery in the preoperative and postoperative period with questions in DSM 5. data measurement was performed with spss 26. The results were evaluated. The prevalence of BDD was evaluated according to the aesthetic request area and demographic characteristics.

Results

In the study conducted on 100 patients with an average age of 28 years, 78% of the patients were women and 22% were men. the majority of the group consisted of patients with rhinoplasty requests. the remaining part consisted of patients with breast and abdominal reconstruction requests.

As a result of the survey conducted with the questions in DSM 5, symptoms of BDD were detected in 58% of the patients who requested aesthetic surgery and underwent surgery. the prevalence of BDD was higher in women in this group compared to men BDD was found in 51% of patients who underwent surgery for rhinoplasty. 81% of patients who underwent surgery for breast reduction or augmentation for breast deformity were diagnosed with BDD. Of the patients who requested abdominoplasty for abdominal deformity, 83% were diagnosed with BDD. There was no significant difference in the prevalence rates of previous psychiatric treatment history, comorbidities, smoking, alcohol, substance use in the prevalence of BDD. the prevalence of BDD was higher in patients with a history of previous plastic surgery. the prevalence of BDD was higher in the low and middle income group.

Conclusion

We observe that patients with breast and abdominal reconstruction requests have a higher BDD rate than patients with rhinoplasty requests. Therefore, patients with breast and abdominal reconstruction should be evaluated better in this respect. The prevalence of BDD is more common in women and it is necessary to evaluate in terms of BDD in the request for aesthetic surgery in women. Since BDD has not been investigated by large epidemiologic studies, its prevalence is largely unknown.

Awareness of the potential for BDD will allow surgeons to better understand their patients' perspectives, discuss realistic expectations and evaluate postoperative satisfaction rates.

Conflict of Interest: None declared

Keywords: BDD, Test, Plastic Surgery, Psychiatry, Psychology, Body image, Aesthetic, Body regions



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-007

Sensory Changes in Nasal Subunits Following Open and Closed Rhinoplasty: A Randomized Controlled Trial

Sinan Kadir Altunal, Murat Celik, Ugur Kocer, Arda Kucukguven

Department of Plastic, Reconstructive and Aesthetic Surgery, Ankara Training and Research Hospital, Ankara / Türkiye

Introduction

The ongoing debate regarding modern rhinoplasty revolves around the relative superiority of its two main techniques: open and closed. It is commonly believed that the closed technique leads to faster recovery and less postoperative swelling [1]. On the other hand, the open technique is often preferred due to its ability to provide greater visibility of the anatomy and easier access to deeper tissues [2].

Skin sensation changes are common after rhinoplasty and can be troublesome for patients postoperatively [3]. Various factors, such as the skin incision technique, surgical modifications, demographic factors, comorbidities and drug use, can contribute to these changes. However, the choice of rhinoplasty technique, particularly the skin incision technique (open or closed), is arguably the most critical factor in predicting sensory changes. The closed technique may be considered as causing less sensory loss compared to the open technique due to its conservative approach, minimal dissection and low tissue damage potential. It is important to evaluate the short- and long-term sensory changes of these techniques on different subunits of the nose. While a number of studies have investigated these effects, few have used today's modern structural rhinoplasty techniques, and no studies have comprehensively used both objective and subjective assessment [4,5,6,7]. To address this gap, a randomized study was planned to compare the sensory changes in the subunits of the nasal skin caused by the two main methods using objective and subjective parameters.

Methods

Study Setting and Participants

The study was designed as a prospective randomized clinical trial. Patients between the ages of 18 and 40 years who had applied to our hospital with a request for primary rhinoplasty between June 2021 and December 2021 were accepted as eligible for the study. Two parallel allocation groups (open and closed technique) were created, and the allocation ratio was 1:1. Patients were divided into open and closed technique groups using a clinical trial randomization tool [8].

Demographic and medical information of the patients was recorded at the time of application. Any history of injury that may affect nasal skin sensation, chronic diseases that may impair nerve healing (such as vitamin B12 deficiency or Diabetes Mellitus) and past surgery to the nose were determined as exclusion criteria. In addition, patients who underwent subcutaneous tissue excision and/or alar base reduction during the operation, which may also affect skin sensation, and patients who were lost in follow-up were excluded from the study.

All the patients were followed up for at least one year.

Surgical Method

The same structural rhinoplasty steps were performed in all the patients in both groups, except for the additional transcolumellar incision in patients who underwent the open technique. Nasal dissection of all the patients was performed on the same surgical plane in order not to adversely affect the study results. The degree of dissection was similar in both groups. Since the instruments used for the osteotomy may affect the study results, the same instruments were used in all the surgeries.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Outcome Measurement

In the analysis of the patients, the nose was divided into seven subunits: nasion, rhinion, nasal tip, left alar wing, right alar wing, infratip lobule and columella base (Fig. 1). It was conducted using the Semmes–Weinstein monofilament test (SMWT) before and one, three, six and twelve months after the operation. They were instructed to lie in a supine position with their trunk flexed at a 45-degree angle and to close their eyes. Monofilaments of increasing thicknesses were randomly applied to one of the seven subunits of the nose while the surgeon determined the order of the subunits to be tested. Each touch was applied for at least 1.5 seconds with equal pressure after the monofilament bowed. Patients were asked whether they felt the touch and were required to correctly identify the subunit location. The lightest value felt by the patient is recorded (Fig. 2). The secondary outcomes were subjective evaluations. Sensory changes of each nasal unit compared to the preoperative period in the postoperative first, third, sixth and twelfth month were subjectively evaluated by the patients on a three-point Likert scale (no sensation, decreased or similar with one, two or three points, respectively). The study was non-blinded because of the nature of the surgery (columellar incision or no incision).

Statistical Analysis

Primary and secondary outcomes were statistically analyzed within and between the groups using the SPSS 24 (IBM Corp., Armonk, NY). The results with a P value less than 0.05 were considered statistically significant. Normal distribution was checked using skewness and kurtosis. Differences within the groups were evaluated using a one-way repeated measures ANOVA test for normally distributed data, as well as the Friedman test if the normal distribution was not present. In the post hoc analysis, the Tukey HSD and the Wilcoxon signed-rank tests were used.

Results

After the application of exclusion criteria, a total of 62 Caucasian patients were included in this randomized prospective study. The open group had 32 patients (25 females, and 7 males, with a mean age of 27.2 years, ranging from 20 to 46 years), while the closed group had 30 patients (24 females and 6 males, with a mean age 26.6 years, ranging from 19 to 42 years). There was no statistically significant difference in the mean age, gender distribution and SWMT values of the nasal subunits ($p > 0.05$) between the open and closed groups in the preoperative period. The SWMT values showed a decrease in sensation in the nasal tip and infratip lobule of the open group one month after surgery ($p < 0.05$), but this decrease did not differ significantly from the preoperative state at the third postoperative month ($p > 0.05$). No significant changes in sensation were observed in other subunits of the nose in the open group. In the closed group, no significant differences were observed between the preoperative and postoperative sensory values for nasal subunits according to the SWMT results across all periods (Table 1). When the patients were asked to evaluate the sensory change on a three-point Likert scale, it was observed that there was a statistically significant decrease in sensation in the nasal tip and infratip lobule units in the first month postoperatively compared to the preoperative period in the open group ($p < 0.05$). There was no significant change in the postoperative sensory values of the other units in the open group and in all subunits of the patients who underwent the closed technique (Table 2).

According to both the SWMT and the three-point Likert scale, it was statistically significant that the decrease in sensation in the nasal tip and infratip lobule was higher in the open group compared to the closed group in the first month postoperatively (Fig. 3).

Discussion

Today, open and closed techniques continue to be compared with each other. This comparison is made on both the intraoperative differences and the postoperative recovery period. Changes in nasal skin sensation are among the most common adverse conditions postoperatively [3].

While the infratrochlear nerve supplies the sensation of radix, the sensation of the nasal tip is supplied by the external nasal branch of the anterior ethmoidal nerve. The sensory supply of the alar wings comes from the nasal branches of the infraorbital nerve [9]. The sensation of columella is provided by the external nasal nerve near the tip and by the labial branches of the infraorbital nerve at the base [10]. Damage to these nerve branches that provide the sense of the nasal skin causes a decrease in sensation [7]. Although all the differences between open and closed rhinoplasty are beyond this study, we aimed to reveal the sensory difference and sensory recovery times in the postoperative period.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 15 September
Congress

There are two common methods for the numerical evaluation of tactile sensation: the two-point discrimination test and the monofilament test. Studies have shown that although monofilaments can be affected by heat and erode over time, it is more reliable than the two-point discrimination test [11]. Therefore, the SWMT was used for objective sensory evaluation. Patients were asked questions on a three-point Likert scale to evaluate the change in nasal skin sensation. By making subjective evaluations, it was aimed to reveal how much the results obtained with the SWMT overlap with the answers of the patients about the nasal skin sensation.

Both the objective and subjective data showed a decrease in sensation in the nasal tip and infratip lobule at the first month postoperatively in the open rhinoplasty technique compared to the preoperative period, indicating that the nerve fibers involved in the sensation of these regions were more damaged in the open technique. The findings obtained in the subjective sensory evaluation support the results of the monofilament test.

Since type (blunt-sharp), plane and degree of the dissection and osteotomies can affect the degree of these nerve injuries, to eliminate these discrepancies, in our study, the same degree and plane of the dissection were carried out in both groups. The only difference between the groups was the columellar skin incision.

In a study conducted by Bafaqeeh et al. a decrease in sensation was noted in the area innervated by the external nasal nerve (nasal tip and infratip lobule) in the early postoperative period after open rhinoplasty, which correlates with our findings. The researchers stated that the nerve could be injured during subcutaneous dissection as it passes between the nasal bone and the upper lateral cartilage [5]. Oneal et al. state that this nerve can be injured during intercartilaginous and cartilaginous split incisions in closed rhinoplasty [10].

Considering the similar wide dissections done in both groups in our study, we can conclude that the columellar branch coming from the infraorbital nerve also plays a major role in the tip and infratip lobule innervation as there was no decrease in sensation in these subunits in the closed group, whereas there was a significant loss of sensation in the same subunits in the open group in the early postoperative period.

Regardless of the technique, it is obvious that the greater the degree of dissection, the longer the sensory recovery will take. When the degree of dissection remains the same, we attribute the greater decrease in sensation to the incision in the columella, the degree of intraoperative trauma to the tissues and the postoperative edema.

In a study by Okur et al., it was found that the sensation of the nasal tip and infratip lobule decreased with the damage caused by an incision made in the open technique, similar to our results. They found that these sensations were regained by the first month after the surgery [7]. It should be highlighted that there was no dissection of the lower lateral cartilages in their closed rhinoplasty group. They made intercartilaginous incisions to dissect only the upper laterals and nasal bones. Therefore, their sensory findings around the nasal tip may not be considered accurate as tip surgery is a key step in modern structural rhinoplasty.

In a study by Akyigit et al. it was found that there was a statistically significant decrease in sensation in all nasal subunits in revision rhinoplasty compared to primary rhinoplasty. Similar to our results, a greater reduction in sensation of the tip and infratip was noted in patients with primary rhinoplasty[4].

Our study has certain limitations. Because of the easy detectability of the columellar skin incision, no blind evaluation was possible for the SWMT. Even though the SWMT is used as an objective test for the evaluation of skin sensation, the results are dependent on patient statement.

Conclusion

While a decrease in sensation was observed in the tip and infratip lobule in the open technique by the first month postoperatively, this loss of sensation returned to a normal level by the third month. In the closed technique, however, no significant loss of sensation was detected in the postoperative period. In light of our findings, surgeons now have a better insight into postoperative sensory changes in the subunits of the nasal skin, making them safer and more reassuring when there are concerns regarding altered sensation after rhinoplasty.

Keywords: Rhinoplasty, Open rhinoplasty, Closed rhinoplasty, Tip numbness, Nasal subunits



12th

BAPRAS CONGRESS

2023

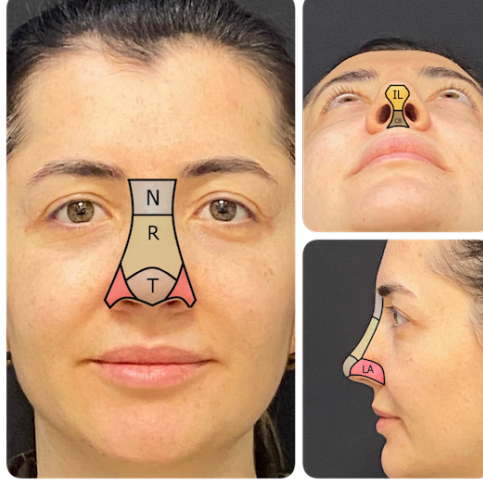
Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Figure 1



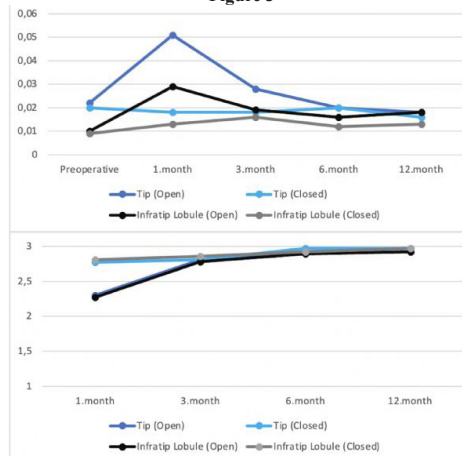
Nasal subunits: Nasion (N), Rhinion (R), Tip (T), Left Alar Wing (LA), Right Alar Wing (RA), Infratip Lobule (IL), Columellar Base (CB)

Figure 2



Application of Semmes-Weinstein monofilament test

Figure 3



According to both SWMT (above) and three-point Likert scale (below), it was statistically significant that the decrease in sensation in the nasal tip and infratip lobule was higher in the open group compared to the closed group at the first month postoperatively.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Table 1

		Pre-operative	Post-operative 1. month	Post-operative 3. month	Post-operative 6. month	Post-operative 12. month
Nasion	Open	0,02	0,016	0,015	0,018	0,016
	Closed	0,02	0,018	0,018	0,02	0,016
Rhinion	Open	0,019	0,017	0,014	0,017	0,016
	Closed	0,015	0,013	0,016	0,016	0,015
Tip	Open	0,022	0,051*	0,028	0,02	0,018
	Closed	0,02	0,018	0,018	0,02	0,016
Left alar wing	Open	0,01	0,009	0,01	0,009	0,012
	Closed	0,009	0,009	0,008	0,01	0,01
Right alar wing	Open	0,01	0,008	0,008	0,008	0,009
	Closed	0,008	0,009	0,009	0,008	0,01
Infratip lobule	Open	0,01	0,029*	0,019	0,016	0,018
	Closed	0,009	0,013	0,016	0,012	0,013
Columellar base	Open	0,009	0,011	0,009	0,009	0,01
	Closed	0,009	0,011	0,008	0,01	0,009

*p<.05

Evaluation of the sensation values of groups according to SWMT (g/mm2)

Table 2

		Post-operative 1. month	Post-operative 3. month	Post-operative 6. month	Post-operative 12. month
Nasion	Open	2,97	3	3	3
	Closed	3	3	3	3
Rhinion	Open	2,91	2,91	2,97	3
	Closed	2,92	2,97	3	3
Tip	Open	2,3*	2,81	2,92	2,97
	Closed	2,77	2,81	2,97	2,97
Left alar wing	Open	2,94	2,97	3	3
	Closed	2,92	3	3	3
Right alar wing	Open	2,92	2,97	3	3
	Closed	2,97	3	3	3
Infratip lobule	Open	2,27*	2,78	2,89	2,92
	Closed	2,81	2,86	2,92	2,97
Columellar base	Open	2,92	3	3	3
	Closed	3	3	3	3

*p<.05

Evaluation of the sensation of groups according to 3-point Likert scale



OP-009

Examination of Clinical Functional Scores after Reconstruction with Vascularized Fibula Graft in Patients with Bone Tumors

Mehmet Can Gezer, Mustafa Onur Karaca, Hüseyin Yusuf Yıldız

Ankara University Faculty of Medicine Department of Orthopedics And Traumatology, Ankara / Türkiye

Various treatment methods have been presented from past to present for the treatment of bone segment losses. Surgeries such as trauma, osteomyelitis, congenital anomalies, skeletal system tumor resection, arthroplasty and spinal surgery may cause loss of bone segments. Most frequently preferred surgical techniques for reconstructive surgeries are; autogenous bone graft, bone allograft surgery, distraction osteogenesis and free-vascular bone grafting. Among these surgeries, free-vascular bone grafting is the most commonly used technique, as it provides the continuation of biology.

In our study, we retrospectively investigated the relationship between the functional and quality of life outcomes and the healing time after reconstruction of segmental bone defects caused by tumors using free vascularized fibula grafts in Ankara University Faculty of Medicine Department of Orthopedics and Traumatology between 2005 and 2021. Clinical scores were analyzed using the visual analog scale (VAS), Musculoskeletal Tumor Society (MSTS) scale, and Short Form-36 (SF-36) quality of life scale.

Due to its user-friendly nature and its suitability for evaluating extremity function following musculoskeletal oncological surgery, the Musculoskeletal Tumor Society (MSTS) is widely utilized as an acceptable assessment system for patient-centered outcomes. Additionally, the MSTS has standardized clinician-reported outcomes for limb-preserving procedures. However, some authors have criticized its limitation in capturing objective movements such as sitting and standing, and in certain studies, MSTS has been deemed to have a moderate correlation with physical performance, unable to accurately score certain significant differences in limb functions.

We also believe that a more comprehensive functional assessment of the patient, encompassing physical, mental, emotional, and social functionality, along with pain and overall health evaluation, should be conducted using the SF-36 in conjunction. This assessment can be self-administered by the patient. In our study, the scores of SF-36 subscales were higher before surgery, and this difference was statistically significant.

Of 47 patients, 21 were female and 26 were male, with a mean age of 31.3 (min:10-max:74). Eighteen and 29 patients were reconstructed with SDFG due to for upper and lower extremity tumors, respectively. Of the patients who were operated on the upper extremity, 11 had tumors in the humerus and 7 in the radius. In the lower extremity, 14 of the tumors were located in the femur and 15 in the tibia. The mean amount of defect measured during the operation was 13,73 cm (min: 6.07 max: 22.44). The mean follow-up period of the patients was 50 months (min:24- max:147), and 9 patients (19.15%) died during follow-up. When the imaging methods used during the follow-up of the patients, including direct radiographs and computed tomography used in some patients, were examined, it was observed that there was consolidation in the graft in 45 out of 47 patients, and the average consolidation time was 6.7 (min:2- max:14) months. When the pain and functions of the patients were examined, the mean VAS score of 47 patients was 3.57 (min:0 - max:10) and MSTS score was 21.12 (min:5- max:35). When the SF-36 questionnaires of the patients were examined, preoperative scores were lower in all patients compared to the postoperative period.

Forty-five patients were divided into 2 groups; union duration shorter and longer than 6 months. The effects of patient gender, extremity difference, tumor location, amount of defect, preoperative and/or post-operative ChT and/or RT status, presence of distant metastases, development of postoperative complications, and duration of hospitalization on the duration of union were investigated. In the analysis of these parameters, it was observed that the duration of bone union in the upper extremity was earlier and the duration of bone union was prolonged in patients with postoperative complications ($p=0.03$, $p=0.007$, respectively). The effect of same parameters on MSTS scores was not statistically significant.

We also examined the relationship between union time and age, VAS score and MSTS score. Since not all values are parametric, we compared groups with Spearman's rho test. It was observed that as the age of the patients decreased, consolidation occurred faster, and as the MSTS score increased, the VAS score was lower. At the end of 24 months, a negative correlation was observed between the consolidation time and the MSTS score of the patients, but it was not statistically significant.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

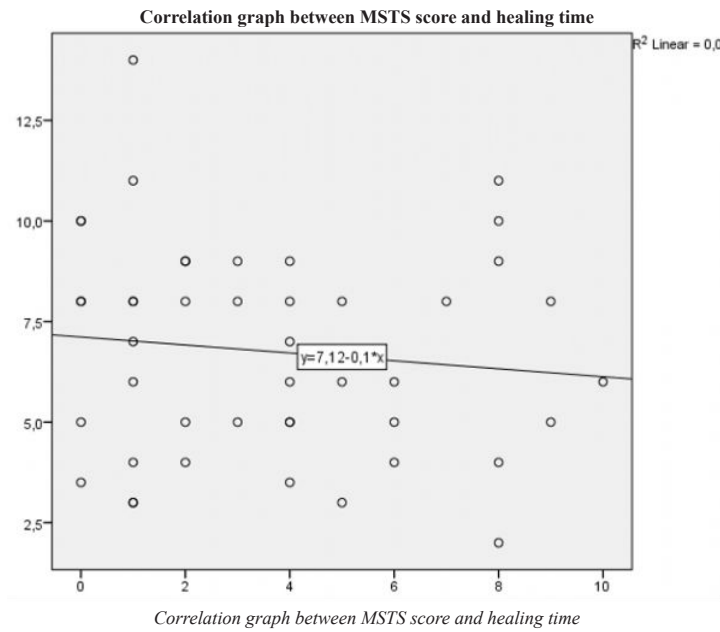
13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

In our study, the scores of the SF-36 subheadings were higher in the postoperative period and this was statistically significant. The presence of preoperative and/or postoperative chemotherapy or radiotherapy did not lead to a statistically significant difference in graft consolidation time ($p=0.88$) and MSTS ($p=0.22$) scores in our patients. Our study demonstrated that the time to bone consolidation was not significantly affected by the use of chemotherapy and/or radiotherapy. Additionally, patient-centered outcomes remained largely unchanged from chemotherapy and/or radiotherapy, as evident from the examination of MSTS scores.

Free-vascular fibula grafts are biological reconstruction methods that accelerate union. Although the mean duration of bone union is 6 months and 9-12 months in prolonged cases with this method, the functional scores of the patients at the end of two years are similar and both their mood and extremity functions are higher compared to the preoperative period.

Keywords: Fibula, Autografts, Tumors, Bone, Reconstruction





OP-010

Gluteal Artery Perforator Flap Reconstructions of Pressure Ulcers

Murat Enes Saglam

Ankara City Hospital, University of Health Sciences, Ankara / Türkiye

Introduction and Aim

Pressure ulcers, also known as decubitus ulcers, are caused by prolonged compression of the skin and subcutaneous tissues in the bony protrusions of the body. Patients with spinal cord injury, the immobile period after major surgery, a history of prolonged intensive care unit stay, and cachectic patients are at risk for pressure ulcers. In immobile patients, these ulcers can quickly occur in a short period of time if the position is not changed repetitively. These wounds, which are easier to prevent than treat, can be in different stages. Stage I is treated with simple dressings in patients where low pressure is eliminated. In patients with advanced stages and where the pressure will continue, flap transfer to the ulcer area is required for a durable reconstruction with tissue that has a high vascular supply following adequate debridement. Musculocutaneous flaps with known good tissue nutrition are used to reconstruct these defects. Donor site morbidity of musculocutaneous flaps has been reduced with the identification of perforator flaps, and more than twenty perforators have been identified in the gluteal region, providing more options for flap design (1). This study aimed to investigate the perforator flaps used to reconstruct pressure ulcers and the reconstruction results.

Material and Methods

Patients operated on for decubitus ulcers between 2019 and 2023 in our clinic were analyzed. Patients reconstructed with a perforator flap that met the inclusion criteria were included in the study. Patients who underwent reconstruction with other flaps were excluded from the study.

Preoperative Evaluation

The pressure ulcer was examined, and the stage of the ulcer, subcutaneous pouch of the ulcer, presence of fistula, previous operations, and scars were documented. In cases where the physical examination was insufficient, modalities such as magnetic resonance imaging (MRI) with contrast were utilized. The perforator flap type was decided according to the location of the decubitus ulcer. While designing the perforator flap, the posterior superior iliac spine, great trochanter, coccyx, and ischial tubercle were marked in the prone position. The piriformis muscle was marked with a line drawn from the midpoint of the line between the posterior superior iliac spine and the coccyx to the great trochanter. A line was drawn from the posterior superior iliac spine to the great trochanter for the superior gluteal artery perforator flap. The intersection of the upper third and middle third of this line indicates the location of the superior gluteal artery. Perforators originating from the superior gluteal artery are densely located superior the piriformis muscle around this region. For the inferior gluteal artery perforator flap, a line is drawn between the posterior superior iliac spine and the lateral edge of the ischial tuberosity. The inferior gluteal artery is located at the intersection of the lower third and middle third of this line. Perforators originating from the inferior gluteal artery are found intensively inferior the piriformis muscle around this region. Perforators are marked with the assistance of a handheld doppler [Figure 1].

Surgical Procedure

Following appropriate debridement of pressure ulcers, the perforator flap is designed intraoperatively according to the defect pursuing the markings. After the skin incision, dissection is performed with a monopolar cautery up to the muscle fascia. After the muscle fascia is included, the perforators are visualized from lateral to medial with blunt dissection in the subfascial plane under loupe magnification for the previously marked perforators. All perforators found in the first stage are preserved. Perforators whose accompanying veins cannot be visualized under magnification and whose diameter is less than 1 mm are sacrificed. After all, incisions are made, the transfer of the flap to the defect in the form of rotation or advancement is rehearsed. Perforators not allowing this flap movement can be sacrificed at this stage. Following hemostasis, after it is seen that the flap advances to the defect without tension, the subcutaneous and skin of the donor area is closed primarily thanks to the elasticity of this area. The flap is then adapted to the defect, and one drain is placed in the donor and recipient areas [Figures 2 and 3].



Results

Between 2019 and 2023, 13 patients underwent perforator flaps for pressure ulcer reconstruction in our clinic. Of these, 9 were superior gluteal artery perforator flaps, and 4 were inferior gluteal artery perforator flaps. The mean age of the patients was 27 years. 8 patients were male, and 5 were female. The sacral defect of 9 patients was reconstructed, and the ischial defect of 4 patients was reconstructed. The average defect size was 12x8 cm. No circulatory failure or flap loss was observed in 13 flaps. 6 patients had early postoperative complications. In 4 patients, minor dehiscence occurred in the flap suture lines. Recovery was achieved with bedside debridement and suturing. In 1 patient, the postoperative hematoma was observed. The hematoma was drained under operating room, hemostasis was achieved, and the flap was adapted to its place. In 1 patient, a seroma was observed in the late period following drain removal. The seroma was drained, and conservative treatment was performed.

Discussion

Decubitus ulcers are recurrent, challenging defects to reconstruct in plastic surgery. The possibility of recurrence should be considered in patients who will continue their lives immobile. When considering reconstruction options, using reliable perforator-based flaps rather than large fasciocutaneous rotation flaps, where all options are used simultaneously, allows different fasciocutaneous and muscle flaps in subsequent pressure ulcers. It should also be remembered that some patients may gain mobility with newly developed treatments. Using a muscle flap, the movements of the mobile patient can be restricted. In addition, in cases where muscle flaps are used, it has been observed that while the muscles fill the cavity in the first place, the denervated muscle becomes thinner and loses its properties (2). Perforator flaps reduce the donor site morbidity of muscle flaps in this area. Especially in sacral defects, the superior gluteal artery perforator flap from one side allows superior gluteal artery flap elevation from the opposite side for the defect in the same area that may occur later. When the inferior gluteal artery perforator flap is performed, it allows elevating fasciocutaneous random pattern flaps or musculocutaneous flaps from the same side at different times. Literature reviews comparing perforator flaps used in pressure ulcers with other flaps found no difference in complications and recurrence (3). When elevating perforator flaps, it should be kept in mind that this area is also a kind of injury zone in pressure ulcers. There may be cases where the fascial plan is unclear during flap elevation. At this stage, subfascial elevation of the perforator flap is easier than suprafascial elevation. It is also expected to have fibrotic bands around the dissected perforators due to fibrosis. Therefore, careful dissection under magnification is essential. In the flaps used in this study, we prefer flap adaptation as advancement and rotation flaps over multiple perforators. However, if the flap is planned as a propeller flap, the flap must be elevated through a single perforator for rotation. After selecting the dominant perforator, it is essential to relieve it with intramuscular dissection to prevent kinking of the accompanying veins.

Conclusion

We conclude that gluteal perforator flaps are safe to be used in pressure ulcers and can be easily applied by reconstructive surgeons with experience in perforator dissection because the gluteal region is anatomically rich in perforators, unnecessary muscle is not sacrificed and the design is flexible.

References

- 1- Koshima I, Moriguchi T, Soeda S, Kawata S, Ohta S, Ikeda A. The gluteal perforator-based flap for repair of sacral pressure sores. *Plast Reconstr Surg.* 1993 Apr;91(4):678-83. doi: 10.1097/00006534-199304000-00017. PMID: 8446721.
- 2- Nola GT, Vistnes LM. Differential response of skin and muscle in the experimental production of pressure sores. *Plast Reconstr Surg.* 1980 Nov;66(5):728-33. doi: 10.1097/00006534-198011000-00008. PMID: 7001518.
- 3- Sameem M, Au M, Wood T, Farrokhhyar F, Mahoney J. A systematic review of complication and recurrence rates of musculocutaneous, fasciocutaneous, and perforator-based flaps for treatment of pressure sores. *Plast Reconstr Surg.* 2012 Jul;130(1):67e-77e. doi: 10.1097/PRS.0b013e318254b19f. PMID: 22743956.

Keywords: Perforator flap, Pressure Ulcer, Superior Gluteal Artery, Inferior Gluteal Artery, Sacral Defect, Ischial Defect



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

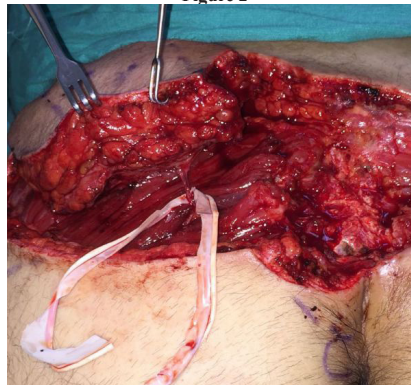
www.balkanplasticsurgery.org

Figure 1



Markings of superior gluteal artery perforator flap

Figure 2



Dissection of perforator

Figure 3



Postoperative result



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-011

Management of Chest Wall Defects with Soft Tissue and Bony Defect, a Clinical Experience

Murat Muhammed Biner, Ahmet Özgür Alkan, Süleyman Çeçen, Güzin Yeşim Özgenel

Bursa Uludağ University, Faculty of Medicine, Department of Plastic Reconstructive and Aesthetic Surgery, Bursa / Türkiye

Introduction

The chest wall comprises vital organs and vasculature. It covers and shields these structures with the sternum, ribs, attached muscles, and overlying fascia and skin. In addition to this, the sternum, ribs, and muscles help inspiration as accessory elements.

Reconstruction requiring chest wall defects is due to trauma, tumors, infection, and radiation. (1)Chest wall wounds may include surface defects, structural elements loss, and dead space in the thoracic cavity. (2) As mentioned earlier, each wound would have different portions of the loss, and each lost tissue will need a different reconstruction perspective.

Skin grafts or local skin flaps are primary but good options for chest wall defects without full-thickness involvement. Regional muscle flaps, such as pectoralis major, latissimus dorsi, rectus abdominis, external oblique, serratus anterior, or omental flaps, are essential options in case of significant soft tissue defects, dead space obliteration, or coverage for prosthetic material. (3)

Significant ablative surgery or devitalized tissue debridement defects may cause substantial local tissue defects. In these cases, distant microsurgical tissues may provide appropriate coverage of vital organs, prosthetic materials, and dead space fill. Lower abdomen-originated flaps such as rectus abdominis myocutaneous flap with different skin paddle orientation, deep inferior epigastric artery perforator flap (DIEP), and anterolateral thigh (ALT) flap (with or without tensor fascia lata fascial extension, vastus lateralis muscle) provide tissue blocks for composite defects.

This study aimed to examine the patients who needed reconstruction due to full-thickness defect in the chest wall and their results.

Material and Methods

Between February 2019- February 2023, 24 patients had operations due to chest wall defects for various reasons. Nine patients out of 24 patients had both soft tissue and bony defect situated on the anterior and lateral sides of the chest wall. Eight patients' defects were due to the tumor ablation, and one was secondary to the bypass surgery.

Results

Four of the nine patients were women. While our youngest patient was 33 years old, the oldest was 80, with a mean age of 51.6 years. While four defects were located anteriorly on the chest wall, six were located laterally on the chest wall. Seven patients' defects were reconstructed with regional muscle flaps, and the rest of them were reconstructed with free tissue transfers. For regional muscle flap choices, latissimus dorsi, pectoral muscle, and rectus abdominis muscle were used. DIEP, latissimus dorsi muscle, and ALT flap were used for free tissue transfers. The mean defect size was 251,09 cm² (100- 375 cm²). In total, eleven reconstructive procedures were performed in nine patients. Three different procedures were performed on one patient, which will be mentioned in the discussion as the first case. Other details are in Table 1.



Age Gender Etiology Location Type Flap Defect Size

1	51	E	Breast cancer	Lateral Free	DIEP	300
2	53	E	Chondrosarcoma	Lateral Pedicled	Pectoral myocutaneous	225
3	80	E	SCC	Anterior Pedicled	Pectoral myocutaneous	225
4	44	K	Leiomyosarcoma	Anterior Pedicled	LD	112
5	33	K	Breast cancer	Lateral Pedicled	LD	375
6	62	K	Breast cancer	Lateral Pedicled	LD	300
7	33	K	Breast cancer	Lateral Free	ALT	300
8	59	E	Iatrogenic- after bypass surgery	Anterior Pedicled	Rectus muscle	100
9	50	K	Breast cancer	Lateral Pedicled	LD	225
10	70	K	Chondrosarcoma	Anterior Free	LD	300
11	33	K	Breast cancer	Lateral Free	LD	300

Table 1; Patient data

No total loss was observed in other flaps except the loss of one free flap that was due to cardiopulmonary arrest. In two patients who underwent latissimus dorsi flap, the skin graft performed in the first session had lysis due to infection and was re-grafted with adequate granulation after the follow-up.

Discussion and Conclusion

Reconstruction needs may arise in the thoracic wall for various reasons, including tumor excision, trauma, and radiotherapy. These factors can result in defects of varying depth and width. Therefore, when a reconstruction need is identified in the thoracic wall, a careful analysis should be conducted to assess the losses incurred as a result of previous surgeries or radiotherapy and to determine the remaining viable structures. This analysis allows for the identification of the required tissue characteristics and the preparation of suitable recipient vessels.

Initially, superficial defects can be repaired if the wound bed is suitable for graft application or if local fasciocutaneous flap options are available from surrounding tissues. Among the local options, perforator flaps with an axial pattern, which can be identified around the defect, are also significant. These flaps may originate from the internal mammary artery, anterior or lateral intercostal artery, or superior epigastric artery.

However, in full-thickness defects that may occur in the thoracic wall, mere wound coverage will not be sufficient. The creation of structural support, closure of dead space, and coverage of essential structures need to be considered during reconstruction.

Regional muscle flaps are essential for defects on the thoracic wall's anterior, lateral, or posterior aspects. Among these, the primary choices are pectoral, serratus anterior, latissimus dorsi, and rectus abdominis. Additionally, the omental flap is an essential option for dead space closure. (4)

Priority should be given to providing structural support regardless of location in full-thickness defects of the thoracic wall. Semi-rigid or rigid stabilization techniques are used for this purpose. Various synthetic prosthetic and biological materials are available for semi-rigid stabilization, each with advantages and disadvantages. (3)

Thorough debridement of all necrotic structures in thoracic wall defects is as crucial as successful reconstruction. Failure to perform adequate debridement may lead to mediastinal or thoracic cavity infections, which are undesirable scenarios. After appropriate debridement and stabilization of the thoracic wall, suitable reconstruction options can be considered for covering all structures.

Due to their proximity to the anterior chest wall and mediastinum-associated defects, the options of pectoralis, serratus anterior, and rectus abdominis muscles take precedence. The pectoralis muscle can be utilized for turn-over based on the internal mammary artery to reconstruct defects in the anterior chest wall and mediastinal areas and obliterate dead spaces.

The rectus abdominis muscle and a large skin island can also be employed vertically or horizontally, based on the superior epigastric artery, for the same purpose. However, caution should be exercised to ensure the integrity of the pedicles of both internal mammary arteries. In the event of injury to both internal mammary arteries, the pectoralis muscles can be based on the thoracoacromial artery. In this scenario, the pectoralis muscle can only be used for coverage in the mediastinal area.

The usability of the rectus abdominis muscle, on the other hand, depends on the intactness of the superior epigastric artery. The latissimus dorsi muscle can easily reach defects located on the anterior-lateral aspect of the chest wall, but adequate mobilization will be required for anteriorly situated defects. The latissimus dorsi, serratus anterior, and pectoralis muscles can be utilized for anterior-lateral defects of the chest wall.



Although regional muscle flaps are valuable options for chest wall reconstruction, their usability may be limited by previous surgeries, injuries, and radiotherapy. Particularly, procedures such as axillary dissection or radiotherapy associated with breast surgery, pre-existing scars on the back and trunk, thoracotomy incisions, and chest tube use should be considered as potential sources of pedicle injury. Preoperative contrast-enhanced computed tomography, color Doppler, or handheld Doppler can be used to evaluate flap options. Moreover, perioperative imaging is essential. Extensive surgical excision and pedicle injury are not distant possibilities. Therefore, free tissue transfers should always be considered as a contingency plan. In such cases, anterolateral thigh flap, latissimus dorsi muscle flap, TRAM flap, or DIEP flap are some of the initial options that come to mind. (1) (3) (4) (5)

Two patient cases with anterior and anterolateral chest wall defects will be discussed as examples. The first case has a history of extensive excision and reconstruction with skin grafting and radiotherapy due to breast cancer. After recurrence, extensive excision of the left chest wall was planned, and Gore-Tex was applied for structural support. For coverage of the significant defect and foreign material, a latissimus dorsi myocutaneous flap was planned on the same side. However, the applied skin graft and almost half of the flap were lost following surgical site infection. After debridement, the patient underwent vacuum therapy and wound dressing, and a free right-sided latissimus dorsi muscle flap was transferred. Unfortunately, marginal necrosis developed, leading to the need for reconstruction of the wound. In this instance, a free ALT flap was performed using a saphenous vein graft. (Figure 1)

Figure 1: Perioperative of First case after second free flap

Due to the patient's poor overall condition, they experienced cardiac arrest and received CPR, subsequently being admitted to the intensive care unit. After approximately half an hour of resuscitation efforts, it was observed that the flap had no circulation. However, no further procedures were planned due to the patient's general condition. After debridement of the necrotic flap, the patient was followed up with dressings, and surgery was not scheduled until suitable granulation tissue formed. Subsequently, a graft was applied, and the patient was discharged. Despite the defect being covered with a graft, it is evident that the chest wall support remains inadequate.

The second case was a patient with a malignant tumor over the sternal region, and appropriate preoperative imaging was performed before surgery, planning for possible scenarios. As seen in Figure 2, a defect was encountered. The defect extends not only to the right side of the chest wall but also to the left, involving the anterior chest wall and internal mammary arteries, even injuring the right-side thoracoacromial pedicle.

Figure 2; Perioperative view after tumor ablation

After confirming the suitability of the thoracoacromial pedicle for microsurgery, the size of the defect was measured. It was observed that the defect's width was too wide for the primary closure of the ALT flap donor site. Due to its rich vascularity and extensive surface area, a latissimus dorsi myocutaneous flap was prepared. After the flap was adequately prepared, anastomoses were performed, and the flap was transferred to the defect area. Due to the patient's unstable condition, grafting of the muscle surface was postponed to the next stage and performed one week later. (Figure 3) Figure 3 shows that disruption of the vascular pedicle of the internal mammary artery and thoracoacromial artery necrosis limited to the nipple-areolar complex was observed. Figure 3; Second operation for skin grafting

In patients who may require such surgical interventions, their existing comorbidities, nutritional status, and history of radiotherapy are crucial parameters. Moreover, previously undergone surgeries and radiation therapy may result in unhealthy and insufficient local tissues or reduced vascularity, making them susceptible to infection. Furthermore, the recurrent tumor can act as a focus of infection, indicating the area. The extent of the planned surgery, the depth of the defect, and the exposure of essential structures all play individual roles in the decision-making process. The integrity of nearby regional options and vascular pedicles should be individually assessed. Taking into consideration the conditions mentioned earlier, reconstruction options should be evaluated.



References

- 1- Salo JTK, Tukiainen EJ. Oncologic resection and reconstruction of the chest wall: A 19-year experience in a single center. In: Plastic and Reconstructive Surgery. Lippincott Williams and Wilkins; 2018. p. 536–47.
- 2- Zhou B, Long Y, Li S, Lv C, Song D, Tang Y, et al. Reconstruction of chronic radiation-induced ulcers in the chest wall using free and pedicle flaps. Front Surg. 2022 Nov 8;9.
- 3- Isaac K V., Elzinga K, Buchel EW. The Best of Chest Wall Reconstruction: Principles and Clinical Application for Complex Oncologic and Sternal Defects. Plast Reconstr Surg. 2022 Mar 1;149(3):547E-562E.
- 4- Netscher DT, Baumholtz MA. Chest reconstruction: I. Anterior and anterolateral chest wall and wounds affecting respiratory function. Vol. 124, Plastic and Reconstructive Surgery. Lippincott Williams and Wilkins; 2009.
- 5- Thng CB, Kok YO, Feng J, Wong AW-J. Single stage chest wall soft tissue reconstruction with ipsilateral pectoralis major turnover flap, rhomboid skin flap, and inferior nipple transposition. J Surg Case Reports. 2022 Dec 1;2022(12).

Keywords: Anterolateral thigh flap, Chest wall resection, Complications of chest wall resection, Prosthetic reconstruction, Oncological chest wall reconstruction

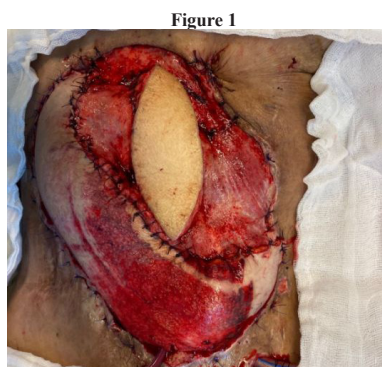


Figure 1
Perioperative of First case after second free flap

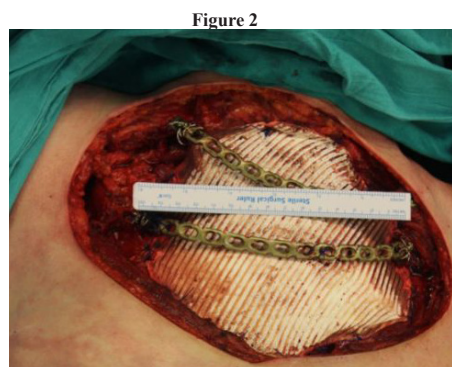


Figure 2
Perioperative view after tumor ablation

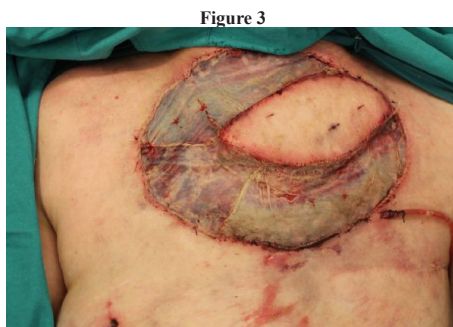


Figure 3
Second operation for skin grafting

Table 1

	AGE	GENDER	ETHIOLOGY	LOCATION	TYPE	FLAP	DEFECT SIZE
1	51	E	Breast Cancer	Lateral	Free	DIEP	300
2	53	E	Chondrosarcoma	Lateral	Pedicled	Pectoral myocutaneous	225
3	80	E	SCC	Anterior	Pedicled	Pectoral myocutaneous	225
4	44	K	Leiomyosarcoma	Anterior	Pedicled	LD	112
5	33	K	Breast Cancer	Lateral	Pedicled	LD	375
6	62	K	Breast Cancer	Lateral	Pedicled	LD	300
7	33	K	Breast Cancer	Lateral	Free	ALT	300
8	59	E	Iatrogenic - after bypass surgery	Anterior	Pedicled	Rectus muscle	100
9	50	K	Breast Cancer	Lateral	Pedicled	LD	225
10	70	K	Chondrosarcoma	Anterior	Free	LD	300
11	33	K	Breast Cancer	Lateral	Free	LD	300

Patient data



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

OP-012

Lateral Thoracic Artery Perforator Propeller Flap versus Thoracodorsal Artery Perforator Propeller Flap in Shoulders Defects

Nuh Evin

Department of Plastic, Reconstructive and Aesthetic Surgery, Bezmialem Vakıf University, İstanbul / Türkiye

Introduction

Shoulder defects usually develop due to trauma, oncological resections of bone and soft tissue tumor, instrumental exposure due to infection or wound healing problems with the main reconstruction goal being to create a functionally acceptable upper extremity. Primary suturing, skin grafts, or local flaps are usually sufficient to repair small or split-thickness defects. Well-vascularized and stable regional and distant flaps are essential for both dead space obliteration and secondary functional surgeries in the repair of large and full-thickness shoulder defects accompanied by exposed bone, joint, and neurovascular structures. For this purpose, fasciocutaneous flaps (lateral and medial arm flaps, lateral thoracic flaps, scapular and parascapular flaps), muscle flaps (deltoid, trapezius, serratus, pectoralis and latissimus dorsi muscle flaps) and free flaps are used for large shoulder defects. (1, 2, 3, 4, 5)

After identification of branches and perforators of the thoracodorsal and lateral thoracic arteries, these regional flaps have become one of the important options for the reconstruction of large shoulder defects.

The aim of this study is to compare the results of lateral thoracic artery perforator propeller (LTAPP) flaps and thoracodorsal artery perforator propeller (TDAPP) flaps in the reconstruction of shoulder defects.

Material and Methods

Twenty patients with full-thickness shoulders defects following trauma and oncologic resection were included in this study. Pediatric patients and burns-related injuries were not included in this study. Patient demographic characteristics, comorbidities, etiology, localization and dimensions of the defects and flaps, surgical duration, and postoperative complications were recorded. All patients provided their verbal and written informed consent to participate in the study, which was conducted in accordance with the Declaration of Helsinki on ethical guidelines.

Eight defects were reconstructed with LTAPP flaps in the supine position of the patient. The closest and loudest perforator of lateral thoracic artery was marked using a handheld Doppler. Appropriate width, length and axis flaps were designed according to the defect width and 'tissue pinch' test. An incision was made on the lateral edge of the flap. The flap pedicle was dissected at the lateral side of the pectoralis major muscle. The medial edge of the flap was incised and the flap was elevated over the perforator, and rotated and adapted to the defect. The donor site was primarily closed (Figure 1). Twelve defects were reconstructed with TDAPP flaps in the lateral decubitus position. The landmarks of the latissimus muscle were marked and the perforators of thoracodorsal artery were identified using a handheld Doppler. The perforator was localized in the central part of the flap. The flap was elevated as a musculocutaneous flap. Then, the flap was adapted to the recipient area by passing through a subcutaneous tunnel in the axillary area. The donor defect was closed by combining of purse-string suturing and a split-thickness skin graft (Figure 2). Patient's position and extremity elevation were applied without disturbing the flap circulation. The patients were followed up for an average of 15.4 months.

Before and 12 months after surgery, functional limitations of the upper extremity were evaluated using the Disabilities of the Arm, Shoulder, and Hand Score (DASH) questionnaire.

At 12 months post-surgery, donor scars were evaluated by patients and two observers who were selected from independent plastic surgeons with at least five years of experience using patient and observer scar assessment scale (POSAS).



Result

Twenty patients, 3 female and 17 male with a mean age of 44.7 ± 16.4 years, were included. Six patients were smokers; two had hypertension; two had diabetes. The etiologies of the defects included mesenchymal tumors ($n=13$), sarcomas ($n=5$) and crush trauma ($n=2$). 9 patients underwent radiotherapy and 7 patients had a history of previous surgery. The surgical margins of the skin cancer were tumor-free. No local recurrence or distant metastasis was observed during follow-up. The mean dimensions of defects in LTAPP and TDAPP flaps were 132.7 ± 26.6 and 257.3 ± 93.9 cm², respectively. The mean flap dimensions of LTAPP and TDAPP flaps were 165.3 ± 60.8 and 257.3 ± 93.9 cm², respectively. The mean pedicles lengths of the TDAPP flap was 10.5 ± 2.8 cm. The mean surgeries duration of LTAPP and TDAPP flaps were 76.6 ± 15.8 and 105.2 ± 24.8 minutes. Three patients experienced postoperative complications, including partial flap necrosis ($n=1$), donor dehiscence ($n=2$). All the donor area healed uneventfully. The mean patient and observer scar scores were 2.5 ± 0.3 in LTAPP flaps and 4.2 ± 0.6 in TDAPP flaps, with significant differences. Mean pre and post-operative DASH score was 54.8 ± 13.6 and 14.7 ± 5.3 in LTAPP; 69.6 ± 21.3 and 23.5 ± 7.2 in TDAPP.

Discussion

Reconstruction of shoulder defects is challenging due to the wide range of motion of the shoulder joint and the lack of sufficient tissue reserve around shoulder. Therefore, regional or distant flap options are frequently used in shoulder defects. TDAPP flaps have some advantages; safe, easy to dissection, well vascularized, long pedicle, and sufficient thickness and size. However, the need for muscle sacrifice or intramuscular dissection, sacrifice of the trochodorsal vascular system that can be used in secondary surgeries, donor site morbidity and need to skin graft, and position change during surgery are the main disadvantages of TDAPP flaps. LTAPP flaps have some advantages; 1 or 2 high caliber perforators, close localization to the shoulder and upper arm, minimal donor site morbidity, preservation of the thoracodorsal artery for secondary surgeries, and shorter surgical times in the supine position. However, perforator dissection, anatomical variations of perforators, breast distortion, and enlargement of the donor site scar are some disadvantages of LTAPP flaps. (1, 2, 3, 4, 5)

In our study, the majority of patients had a defect after oncological resection. Patients with large defects, those who underwent surgery from the anterior chest region were repaired with TDAPP flaps. Smaller defects were reconstructed with LTAPP. There was a significant improvement in extremity functions of the patients after both techniques. The LTAPP group had fewer donor site problems and shorter surgical time. However, our study had some limitations; patients and defects were not standardized, there were few patients.

References

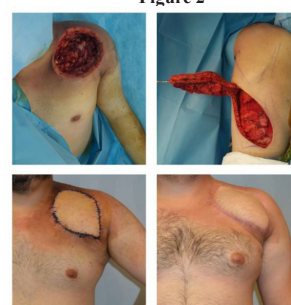
- 1- Teo WL, Ong YS, Tan BK. Radical Surgical Excision and Use of Lateral Thoracic Flap for Intractable Axillary Hidradenitis Suppurativa. Arch Plast Surg. 2012 Nov; 39(6): 663–666.
- 2- Hamdi M, Van Landuyt K, Hijjawi JB, Roche N, Blondeel P, Monstrey S. Surgical technique in pedicled thoracodorsal artery perforator flaps: a clinical experience with 99 patients. Plast Reconstr Surg 2008; 121:1632e41.
- 3- Angrigiani C, Grilli D, Siebert J. Latissimus dorsi musculocutaneous flap without muscle. Plast Reconstr Surg 1995; 96:1608-14.
- 4- Baghaki S, Cevirme M, Diyarbakirli M, Tatar C, Aydın Y. Locoregional Use of Lateral Thoracic Artery Perforator Flap as a Propeller Flap. Ann Plast Surg. 2015 May;74(5):532-5.
- 5- Perignon D, Qassemyar Q, Benhaim T, Robbe M, Delay E, Sinna R. From Tansini to Angrigiani: improvement and refinement of the thoracodorsal flap. Annales de chirurgie plastique et esthetique. 2011;56:149–55.

Keywords: Lateral Thoracic Artery Perforator Propeller Flap, LTAPP Flap, Thoracodorsal Artery Perforator Propeller Flap, TDAPP Flap, Shoulders Defects

Figure 1



Figure 2





OP-013

Our Kite Flap Experience

Percin Karakol, Yasin Canbaz, Agit Sulhan, Onur Zengin, Furkan Uysal

Plastic, Reconstructive and Aesthetic Surgery, Health Science University, Basaksehir Cam ve Sakura City Hospital, İstanbul / Türkiye

Introduction

Hand soft tissue injuries, which are very common due to being a very open area to trauma, have emerged in the literature over time with different flaps and autologous tissues. The choice of reconstructive procedure for the thumb depends on the amount and types of tissue lost. Options are secondary healing, repair with skin grafts, v-y advancement flaps, lateral advancement flaps, (First Dorsal Metacarpal Artery) FDMA flap (Kite), cross finger flaps, and neurovascular island or radial sensory-innervated cross finger flaps. While skin grafts or tendons are exposed, the dorsal metacarpal artery flap (Kite Flap) requested by Holevitch and Foucher, except for defects where tendon, bone or vascular environment is exposed in the hand 1. Finger, the arteriovenous system originating from the radial artery in the 1st web interval is mainly lifted. 2. It is one of the most useful flaps used for thumb reconstruction by being lifted from the dorsal of the proximal phalanx of the finger together with the skin Island. With appropriate imaging, it can be used in volar defects of the thumb as well as dorsal defects. Proximal and distal limits are Metacarpophalangeal (MP) and Proximal interphalangeal (PIP) attachments, respectively, to prevent scar contracture.

Material and Methods

14 patients with soft tissue defects in the dorsal and dorsolateral after trauma, including 8 on the right thumb and 6 on the left thumb, were included in our study. Defect sizes ranging from 1x1 cm to 2x3 cm were in the distal proximal interphalangeal joint with bone opening and only 3 cases belonged to crush type and multiple injuries.

After debridement of the defects in all patients, radial artery and FDMA were evaluated with the help of hand doppler. FDMA was taken from the radial side of the metacarpophalangeal joint at the base of the first and second metacarpal. Looking at its anatomy, the FDMA flap has a pedicle length of approximately 7 cm, so it is long enough to cover the pulp defects of the thumb. While FDMA gives three branches, a radial branch, an ulnar branch, and an intermediate branch, a cutaneous branch is also seen, which may originate from the radial artery or FDMA. FDMA receives current from the skin of the dorsum of the proximal phalanx, especially the index and middle fingers, FDMA and branches of the second dorsal metacarpal arteries, both found in 90% and 97% of the hands. FDMA arises from the radial artery or fuses around the base of the second metacarpal with the dorsal carpal arch, posterior interosseous artery, deep palmar arch, and the ulnar digital artery of the thumb. Venous drainage is provided by the subcutaneous vein. All patients were operated under general or local anesthesia, and after esmach bandaging, they were placed on a tourniquet. The 1st dorsal metacarpal artery-based skin flap was elevated with full-thickness dissection from distal to proximal, along with the 1st interosseous muscle fascia, and the dorsal vessels and sensory nerve were dissected from the insertion of the flap on the ulnar border of the metacarpophalangeal joint to the pivot point at the junction of the first and second metacarpals. The tourniquet was released and flap vascularity was evaluated, and it was inset into the defect areas by tunneling from the dorsal hand. The digital nerves of the donor finger were preserved, and the donor skin area was repaired with a full-thickness skin graft. There was no flap circulation disorder in any of the patients postoperatively, and only 1 patient had to open the tunnel because the pedicle was compressed in the dorsum. In the same patient, decreased mobility in the postoperative metacarpophalangeal joint was noticed, and he was referred to physical therapy in the early period.

Discussion and Conclusion

Hand 1. Finger, especially in dorsal facial defects, although the flap options that can be used are wide, it does not require immobilization for a long time, allows the defect to be closed without shortening the bone, has a pedicle diameter that will feed the large skin island, can reach the defect area without kinking due to the absence of pedicle branching, It should be kept in mind as a good option due to the low donor site morbidity and the fact that it is a single-session intervention. Functional positive results are limited in thumb volar facial defects.

Keywords: Flap, First dorsal metacarpal arter, hand trauma, soft tissue injury, microsurgery



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

OP-015

Our Experience With Bilateral Pedicled Pectoralis Major Muscle Advancement Flap for Secondary Sternal Defects Following Coronary Artery Bypass Surgery

Percin Karakol, Yasin Canbaz, Mert Noyan Dabak, Ömer Büyükkaya, Oğuzhan Tekin

Plastic, Reconstructive and Aesthetic Surgery, Health Science University, Basaksehir Cam ve Sakura City Hospital, İstanbul / Türkiye

Introduction and Aim

Like all surgical procedures, after sternotomy and coronary artery bypass surgery, secondary defects can occur in the sternum due to factors hindering personal wound healing and multifactors related to surgery. After sternotomy the incision site's wound infection and the subsequently developed soft tissue defects in the sternal area result in both increased morbidity and mortality. Following sternotomy, the incidence of wound infection ranges from 0.8% to 8%, and the mortality rate after infection development is reported to be between 7% and 23.5% (1,2). The majority of patients being overweight and diabetic can lead to the rapid infection and further expansion of these defects, potentially resulting in mortality. The most preferred flap options for defects following sternotomy include pectoralis major muscle advancement flap, latissimus dorsi flap, rectus abdominis flap, and omental flap (6). For tissue defects that arise after sternotomy, bilateral pectoralis major flap is commonly chosen (7,8). Some authors have used rectus abdominis flap in addition to bilateral pectoralis major flap for patients with lower 1/3 sternal defects. Omentum flap, due to its large size and good vascularity, is used for wide sternal defects (3,4,5). Omentum flap accelerates wound healing and fills dead space thanks to its strong vascularity and immunological properties.

However, as it requires laparotomy, there is a potential to introduce additional morbidity in these patient groups. Furthermore, there is a risk of transferring infection from the sternal wound to the abdomen. Another reliable option is the latissimus dorsi muscle flap. While this flap has good vascularity, its disadvantages include the need for positional changes during the operation, long operation duration, and donor site morbidity. For defects in the anterior chest wall, abdominal muscle flaps like the rectus abdominis muscle flap are another option. These flaps do not require positional changes, but they can create disadvantages such as donor site morbidity like abdominal wall weakness. The reasons for our preference of the pedicled bilateral pectoralis major muscle advancement flap in our study are as follows: it has reliable vascular circulation, it is close to the defect area, it can easily cover the defect, and the operation duration is short.

Material and methods

Following coronary artery bypass surgery, 23 patients with defects varying in size from 12.5x6 cm to 18x22 cm at the sternotomy incision site, involving skin and subcutaneous tissue, infectious, with exposed wire or plate, presented to our clinic at around the 2nd month of post-surgery. Patients were taken under VAC therapy. All patients were classified as type 3 sternal infection according to Pairolero et al.'s classification. Patients were started on appropriate antibiotic therapy based on antibiograms, and their blood glucose levels were regulated. They were prepared for surgery with wound site cleaning and serial debridements. Surgical procedures to be performed on all patients were explained along with potential complications. Informed consents were obtained. All patients were operated on under general anesthesia. Left Internal Mammary Artery was used for all 23 patients for coronary bypass surgery. Bilateral pedicled Pectoralis Major muscle advancement flaps were performed for patients with healthy granulation tissue. The sternal wires of 4 male patients were removed without disrupting stabilization. All patients received 10 sessions of 60-minute hyperbaric oxygen therapy at 2.5 ATA pressure during the postoperative period.

Results

Among patients who received daily silver dressings under antibiotic therapy after surgery, 3 male patients experienced minimal wound dehiscence that healed at the skin level during the secondary process. The defect areas did not recur in the remaining 13 male patients. In 7 female patients, the breast tissue flap support prevented recurrent defects. No patient required reoperation. Patients discharged from hospital at an average of 1 week were followed up by our clinic for 6 months. No signs of reinfection were observed during the 6-month follow-up.



Discussion and Conclusion

Primary closure after sternotomy and coronary bypass surgery, especially in male patients, is not always feasible, and secondary defects with sternum bone opening and easy access for infectious agents to the cardio-pulmonary cavity increase morbidity and mortality. Repairing the defect using a bilateral pedicled Pectoralis Major muscle advancement flap is a good alternative.

References

- 1- Ridderstolpe L, Gill H, Granfeldt H, Ahlfeldt H, Rutberg H. Superficial and deep sternal wound complications: incidence, risk factors and mortality. Eur J Cardiothorac Surg 2001;20:1168-75.
- 2- Borger MA, Rao V, Weisel RD, Ivanov J, Cohen G, Scully HE, David TE. Deep sternal wound infection: Risk factors and outcomes. Ann Thorac Surg 1998;65: 1050-6.
- 3- Lee AB, Schimert G, Shaktin S, Seigel JH. Total excision of the sternum and thoracic pedicle transposition of the greater omentum; useful stratagems in managing severe mediastinal infections following open heart surgery. Surgery 1976; 80: 433.
- 4- Patel NV, Woznick AR, Welsh KS, Bendick PJ, Boura JA, Mucci SJ. Predictors of mortality after muscle flap advancement for deep sternal wound infections. Plast Reconstr Surg 2009;123: 132-8.
- 5- Lopez-Monjardin H, De-la-Pena-Salcedo A, Mendoza- Munoz M, Lopez-Yanez-de-la-Pena A, Palacio-Lopez E, Lopez-Garcia A. Omentum flap versus pectoralis major flap in the treatment of mediastinitis. Plast Reconstr Surg 1998;101:1481.
- 6- Merritt RE. Chest wall reconstruction without prosthetic material. Thorac Surg Clin 2017; 27:165-9.
- 7- Spartalis E, Markakis C, Moris D, Lachanas E, Agathos EA, Karakat Sani A, Karagiouzis G, Athanasiou A, Dimitroulis D, Tomos P. Results of the modified bi- pectoral muscle flap procedure for post-sternotomy deep wound infection. Surg Today 2016;46:460-5.
- 8- Brito Jde D, Assumpção CR, Murad H, Jazbik Ade P, Sá MP, Bastos ES, Giambroni Filho R, Souza e Silva R. One- stage management of infected sternotomy wounds using bilateral pectoralis major myocutaneous advancement flap. Rev Bras Cir Cardiovasc 2009;24: 58-63.

Keywords: coronary bypass, sternal defect, bilateral pedicled pectoralis major flap, vacuum, reconstruction

Photo 1



Photo 2





12th

BAPRAS CONGRESS 2023
Selçuklu Convention Center Konya, TÜRKİYE



13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org

OP-016

Reconstruction Procedures in Oncoplastic Surgery: Using Thoracodorsal Artery Perforator Flap and Latissimus Dorsi Myocutaneous Flap

Saruhan Mahmutoğlu, Büşra Güçlü, Murat Doğuş Çerikan, Kamuran Zeynep Sevim, Hüseyin Emre Ulukaya
Şişli Hamidiye Etfal Training and Research Hospital, İstanbul / Türkiye

Introduction

Nowadays, the importance of breast reconstruction after mastectomy is increasing. This is due to the rising socio-cultural awareness, leading patients to seek breast reconstruction as a means to overcome the psychological trauma they experience after mastectomy. Additionally, advancements in surgical techniques and personalized care have enhanced the options available for patients, making the decision-making process more tailored and effective. 1- 2

The latissimus dorsi muscle-skin flap is one of the most reliable flaps. The scar formed in the donor area is acceptable in appearance and does not cause significant morbidity problems such as marked muscle weakness and loss of function. 3 - 4. The latissimus dorsi muscle-skin flap can be used in conjunction with silicone breast implants to create sufficient volume. 5- 6

Prosthetic exposure can occur in patients undergoing breast reconstruction with implants after breast cancer surgery. The purpose of this study is to present Thoracodorsal Artery Perforator Flap (TDAP) and Latissimus Dorsi Myocutaneous Flap (LD) procedures as salvage treatments in patients who experienced complications with breast implants at our clinic.

Materials and Method

In our clinic, 24 out of 116 patients who underwent immediate tissue expander reconstruction after subcutaneous mastectomy between 2014 and 2023 experienced wound dehiscence in the breast antero-inferior region. Out of the total patients, 15 of them were treated with Latissimus Dorsi muscle flap, while 9 patients received the TDAP procedure as their reconstruction choice. These patients had factors that prevented the use of abdominal flaps (such as obesity, scarring, and patient preference). Depending on the patients' needs, the flap skin paddles were planned in a horizontal, vertical, or oblique manner.

Out of the 24 patients included in the study, 17 were diagnosed with invasive ductal carcinoma, and 7 were diagnosed with lobular carcinoma. 14 of the patients also underwent axillary lymph node dissection. All patients had received adjuvant chemotherapy or radiotherapy. The average length of hospital stay was 6 days.

The postoperative follow-up period is approximately 10 months (ranging from 3 to 22 months). None of the patients experienced complications such as seroma, infection, hematoma, or flap loss during the postoperative period.

Discussion and Conclusion

Synthetic implants or autogenous tissues can be used for breast reconstruction after mastectomy. However, the use of synthetic implants can sometimes present disadvantages. These may include foreign body reactions, capsule formation around the implant, and distortion in the external appearance of the breast. 1- 2

Additionally, the lack of sufficient tissue after mastectomy or prior radiation therapy can limit the use of implants. In such cases, non-alloplastic autogenous tissues should be the first choice. 7-8

Muscle flaps are flaps classified into specific patterns (such as type 1 to type 5) with specific vascular structures. Due to their volume and blood flow support, they are the best reconstruction option for chronic defects. 9 10 Experimental studies have shown that muscle and muscle-skin flaps are more resistant to bacterial invasion in chronic wounds and provide better bacterial eradication due to their well-developed vascular support compared to skin and fasciocutaneous flaps. 5 6

Autologous breast reconstruction began with the use of the musculocutaneous latissimus dorsi flap. This method, first used by Tarsini in 1856, was popularized by Bostwick and colleagues. 3-9



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

In the early complications related to the Latissimus dorsi muscle flap transfer, infection (5-8%), seroma (6-9%), and partial flap necrosis of less than 10% (3-6%) of the flap area are included.. 10

The most common reasons for implant removal are capsular contracture and wound dehiscence. The frequency of implementing salvage procedures with autologous tissue after implant-based reconstruction is reported to be 0-6% in the literature.

Reconstruction with autogenous tissue allows achieving a well-vascularized repair, resulting in a natural breast that is similar to the other breast in terms of color, texture, and softness.

The primary goal of breast reconstruction after mastectomy is to restore breast volume, shape, and symmetry. In most cases of mastectomy, bringing well-vascularized soft tissue to the chest wall is necessary to replace the lost tissue, and the Latissimus

Dorsi muscle-skin (LDMS) flap is one of the flaps that fulfills this requirement. Planning for reconstruction again after a complicated breast reconstruction presents various challenges for both the patient and the surgeon.

Aydın et al. recommend placing a breast prosthesis under the flap at least 6 months after adapting the latissimus muscle flap to the mastectomy defect.¹⁰ The belief that this method could be feasible for small breasts has been adopted. On the other hand, Moore and Farrell have recommended breast reconstruction using LDMS flaps and immediate breast implant placement.⁸

After the persuasion process with the patients, determining the type and amount of tissue deficiency before reaching the stage of implant loss and planning reconstruction with priority given to neighboring tissues, such as the Latissimus Dorsi myocutaneous flap and TDAP, is a good choice among reconstruction options.

Keywords: oncoplastic surgery, latissimus dorsi, thoracodorsal perforator artery, breast reconstruction, flap surgery



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

OP-017

Flap Surgery Experience of an Orthopedic Hand Surgery Unit on Severely Crushed Extremities of Kahramanmaraş Earthquake Victims

Uğur Bezirgan, Yener Yoğun, Merve Dursun Savran, Peri Kından, Mehmet Armangil

Ankara University Medical Faculty, Orthopedics and Traumatology Department, Ankara / Türkiye

Aim

Earthquakes stand as the most devastating form of natural disaster and Türkiye, situated within fault zone has witnessed numerous catastrophic earthquakes throughout its history. On February 6th, a powerful earthquake with a magnitude of 7.7 Mw occurred in Kahramanmaraş and severely impacted eleven cities in the southeastern part of the country, whose combined population exceeds 16 million. The aim of this study is to evaluate the treatment management of a specific group of patients who were initially recommended amputation but opted against it and subsequently referred to our clinic for further care.

Method

This is a single-center retrospective analysis focusing on 15 patients with 17 flaps. Patients with closed injuries, and open wounds that could be managed without the necessity of microsurgery were excluded. Age, gender, condition of the extremities at the time of admission, duration under the debris, number of debridement surgeries performed until flap surgery, time elapsed from admission to flap surgery, details of the anastomosis, laboratory values at admission and just before the flap surgery, BT angiography results, reoperation status within the first 72 hours, total time for complete wound closure, complications, flap failure, duration of hospitalization, cases of amputation and death were recorded.

Results

Out of the 15 patients, 8 were female (53.33%) and 7 were males (46.67%). The average age was 30.67 ± 18.51 , with 5 of the patients being pediatric (33.33%). The average time spent under debris is 41.77 ± 40.68 hours and average time to tertiary center admission is 11.40 ± 5.80 days. Average debridement count before the flap surgery is 4.41 ± 3.02 and average time from admission to flap surgery is 21.06 ± 18.24 days. The average duration for complete closure of all open wounds is 37.93 ± 37.58 days and average duration of hospitalization is 77.33 ± 36.67 . Out of 15 patients, 7 (46.67%) received hyperbaric oxygen treatment as a supportive measure. There are 3 ALT flaps, 6 latissimus dorsi + serratus anterior flaps, 3 sural artery free flaps and 5 pedicled flaps. There are no fails with ALT or sural artery flaps. Latissimus dorsi + serratus anterior flaps were for larger defects, required more blood product replacements and fraught with difficulties. 5 of the flaps were failed, 3 patients needed amputation despite all efforts, and 1 patient has died.

Conclusion

The intricate nature of microsurgery, and “worse than it seems” nature of earthquake victims, due vascular and infectious considerations necessitate utmost caution and attention to detail. Recognizing that the vasculature of the earthquake victim may be more compromised than indicated in imaging, the selection of proximal anastomosis whenever feasible, vigilant monitoring for potential venous complications, meticulous execution of debridement procedures plus VAC therapy and the judicious use of adjuvant treatments such as hyperbaric oxygen therapy are of paramount importance.

Keywords: Earthquake, crush injury, microsurgery, ALT flap, latissimus dorsi flap



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-018

Fournier's Gangrene, No Matter How Much Flap Options Increase, It Is Still a Frightening Picture

Perçin Karakol, Yasin Canbaz, Mert Noyan Dabak, Zeki Celik, Osman Şamil Sevindik

Plastic Reconstructive and Aesthetic Surgery, Health Science University, Başakşehir Çam ve Sakura City Hospital, İstanbul / Türkiye

Introduction

Fournier's gangrene is a serious condition associated with subcutaneous capillary thrombosis that can manifest with local skin findings and systemic symptoms ranging from sepsis. This condition, characterized by high morbidity and mortality, is defined as necrotizing fasciitis that develops rapidly after suppurative infections in the genitourinary, perineal, or anorectal areas. Diabetes mellitus, local traumas, malnutrition, chronic alcoholism, perirectal, and perianal infections are among the predisposing factors, and the source of infection is usually a combination of anaerobic and aerobic microorganisms.

Objective

Between June 2014 and June 2019, 116 male patients aged 34-79 with various-sized genitourinary and perineal tissue defects were referred to us after urology clinic visits. After daily surgical debridements, the patients underwent defect repair surgery on average around the 12th day, following the visualization of vitalized tissues and the expected decrease in CRP and acute infection parameters in the subacute period. Among these patients, 82 had diabetes, and their blood glucose levels were unregulated during the admission process. In 9 cases, unilateral orchiectomy was performed, and 5 cases required colostomy for fecal and urinary diversion to prevent contamination of the wound. 72 patients in better overall condition were directed to hyperbaric oxygen therapy for necrosis limitation in the preoperative period. 100 patients underwent intermittent vacuum therapy after debridements.

Conclusion

Among 116 patients with lesions frequently located in the scrotum, penile shaft, and perianal region, 19 underwent partial-thickness skin grafting, 15 received scrotal flaps, 12 had abdominal advancement flaps, 17 underwent unilateral, and 10 underwent bilateral medial thigh fasciocutaneous flaps, 17 cases were closed with pudendal artery perforator flap and 26 cases were closed with MCFA perforator flaps. In the postoperative period, wound dehiscence occurred in 10 patients, with 3 requiring repeat flap repair. Two patients with extensive defects were ex in the intensive care unit, and the average length of hospital stay was recorded as 20 days.

Discussion

Even the slightest erythema involving the perineal area should raise suspicion of Fournier's gangrene, irrespective of etiology. Given the rapid progression of the defect, achieving complete anatomical reconstruction becomes increasingly challenging and should not be overlooked.

Keywords: Fournier's Gangrene, MCFA, Flap, Rekonstruction, Pudendal artery flap



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-020

Can ALT Flap Be Rescuer in Upper Extremity Injuries?

Numan Atılğan¹, Burak Kuşcu², Mikail Telek³, Numan Duman⁴, Özlem Orhan⁵

¹Gaziantep Special Deva Hospital, Gaziantep / Türkiye

²Kahramanmaraş Pazarcık State Hospital, Kahramanmaraş / Türkiye

³Hakkari Çukurca State Hospital, Hakkari / Türkiye

⁴Üsküdar University, İstanbul / Türkiye

⁵Harran University, Şanlıurfa / Türkiye

Objectives

The upper extremity contains a variety of functional structures therefore re-establishing soft tissue coverage in large-scale injuries is a challenging procedure. Microsurgery has made progress in reducing donor morbidity and achieving a functional and aesthetic appearance in recent years. This study aimed to apply ALT flap to tissue defects in the upper extremity and to discuss the results.

Material and Methods

Twenty-two patients who were admitted to our hospital with upper extremity trauma and underwent ALT flap surgery due to soft tissue defect between the dates of 2020-2022 were included in the study. Patient's demographic data, the applied surgical procedure, the development of postoperative complications, and postoperative functional results were evaluated.

Results

Twenty-two patients were included in the study. 95.5% (n=21) of the patients were male and 4.5% (n=1) were female. The mean age of the patients was 29.73±11.95 (min: 10, max: 53). The injury occurred in the right upper extremity in 68.2% of the patients and the left upper extremity in 31.8%. The flap was taken from the right thigh in 50% of the patients and from the left thigh in 50% of the patients. Of the injuries, 40.9% (n=9) were firearm injuries, 27.3% (n=6) were occupational accidents, 18.2% (n=4) were traffic accidents, 13.6% (n=3) occurred due to electrical burns. There was no total flap loss after surgery in any of the patients. Donor site healing was completed uneventfully with primary suturing or skin grafting. No weakness or restriction of movement was observed in the lower extremity from which the flap was removed.

Conclusion

For experienced surgeons, the ALT flap can be used successfully in the treatment of soft tissue defects of variable size in the upper extremity.

Keywords: ALT flap, Upper Extremity, Injury, hand surgery, microsurgery



12th

BAPRAS CONGRESS

2023

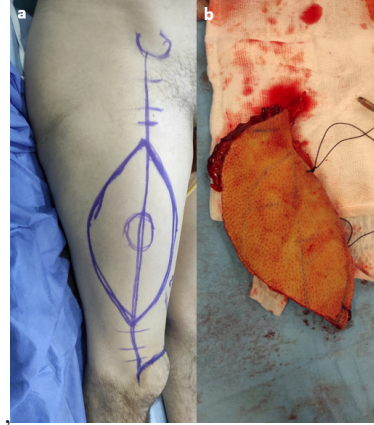
Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Figure 1



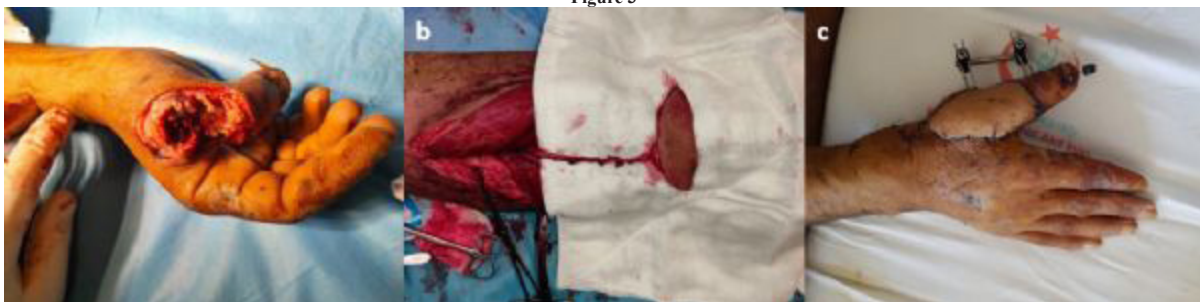
Preoperative flap preparation

Figure 2



Tissue defect after gunshot injury in the dorsal wrist, image after debridement and bone fixation, postoperative image of ALT flap applied to the wrist

Figure 3



ALT flap application to the open fracture that creates a soft tissue defect in the thumb, early results of ALT flap application to open fracture causing a soft-tissue defect in the thumb.



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

OP-021

Evaluation of The Psychiatric Status of Patients With Flexor Zone 5 Injuries

Minel Nur Ulukan, Özer Özmüt, Seyit Ahmet Korur, Burak Yaşar, Hasan Murat Ergani, Ramazan Erkin Ünlü

University of Health Sciences- Ankara Bilkent City Hospital, Ankara / Türkiye

Background

Wrist cuts represent a distinct category of urgent cases within the field of hand surgery. In providing treatment of this group of patients and ensuring the control of additional comorbidities, it is important to evaluate the patient's psychiatric clinic. This study aims to compare the psychiatric conditions of the patients with flexor zone 5 wrist injuries, which were injured by household accident, self-injury, fight, traffic accident, and industrial accident. The characteristics of the injuries and injured parts of the patients are identified and associated with each other.

Patients and Methods

We reviewed 30 patients with wrist injuries who were treated in our medical center from November 2021 through July 2023. We investigated differences in the demographic characteristics of patients, clinical characteristics, and the psychological evaluation of the patients.

Results

The majority of the patients were male ($n = 18, 60\%$), with a male to female ratio of 3:2. 13/30 (%43,3) of patients cut themselves with glass, and this is the most common injury mechanism in our study. We have found that 50% of patients have an injury in their left hand. Most frequently injured anatomical structures are the FCR and FCU (both 43.3%). 13/30 (43.3%) of the patients have depression, and 11/30 (36.6%) of the patients have anxiety. 3/30 (10%) of patients had a history of child abuse, and all of these 3 patients had a suicidal attempt.

Conclusions

A multidisciplinary approach is required to treat this kind of patient. These patients may have underlying psychiatric conditions that need to be cared for, and the surgeon should be aware of this problem and should consult the patient to a psychiatrist after the treatment of the injury.

Keywords: Flexor zone 5, wrist injuries, psychiatry, depression, anxiety



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-022

Demographic and Clinical Features of Earthquake-Related Upper Extremity Injuries That Admitted to The Outpatient Clinic After The Acute Period

Muhammet Okkan, Zeynel Mert Asfuroğlu

Department of Orthopedics and Traumatology, School of Medicine, Mersin University, Mersin / Türkiye

Introduction and Aim

Earthquakes are unpredictable phenomena that can have a devastating impact on a population, causing widespread destruction of property and essential services as well as heavy human casualties and substantial economic losses (1-2). Crush injuries from falling objects are a leading cause of death during earthquakes. In addition, the distance from the earthquake's epicenter correlates negatively with the severity of injuries. There is a correlation between earthquake magnitude, ground motion, and structural damage, and the resulting number of casualties (3). Crush injuries, including limb lesions and comorbid lacerations, severe external hemorrhages, rhabdomyolysis, and compartment syndrome, are injuries of an emergency nature that occur immediately after an earthquake (2). However, the impact of the earthquake on the healthcare systems is not limited to the acute period. After the acute period, secondary interventions such as tendon, bone, and nerve reconstructions are possible for numerous of the earthquake-related injuries (4).

In comparison to the rest of Europe, the Balkan Peninsula is a seismically active region with a relatively greater earthquake risk (5). This region has experienced numerous catastrophic earthquakes throughout history (6). The earthquakes that occurred in Kahramanmaraş on 6th of February, 2023 affected many provinces and are considered among the most destructive earthquakes in the history of Türkiye.

Mersin University is the hand surgery referral center nearest to the earthquake's epicenter. For this reason, many patients who required secondary intervention for hand and upper extremity injuries in the post-earthquake period were referred to our institute.

The primary aim of this study was to assess the demographic and clinical features of upper extremity injuries that admitted to the outpatient clinic after the acute period of the earthquake.

Material and Methods

The study was planned retrospectively. Outpatient admissions to the hand surgery department 1 March 2023 and 1 June 2023 were scanned through the hospital digital archive system between. Patients admitted to the outpatient clinic after the acute disaster period and patients with earthquake-related hand and upper extremity injury were included from the study. Patients with missing clinical data, injuries unrelated to the earthquake and injuries of an emergency nature were excluded from the study. Demographic characteristics of the patients, mechanisms of injury and time interval from injury to admission were recorded. Diagnoses were classified according to the structure requiring reconstruction (Nerve, soft tissue, bone, tendon). The continuous variables were expressed as means \pm standard deviation, and the categorical variables were expressed as numbers and percentages.

Results

A total of 31 (16 female and 15 male) patients' data were analyzed. The mean age was 34.8 ± 15.3 (range: 6-60) years. The mean time from initial injury to admission was 41.4 ± 21.8 (range: 22-102) days. Unilateral extremities affected in all patients. Nerve injury was observed in 14 (45%) patients, soft tissue defect in 7 (23%) patients, bony injury in 7 (23%) patients, tendon injury in 3 (9%) patients. 8 (26%) patients treated non-surgically while 23 (74%) patients treated surgically. The details of injuries and treatments were given in table 1.



Discussion

Medical demands in earthquake zones are dynamic and constantly changing. During the acute period, medical response is most disorganized, support from external sources is not probable, and intervention focuses on triage and immediate treatment of life-threatening injuries. After the acute period, musculoskeletal problems become the primary concern. In the months after the earthquake, while the frequency of orthopedic surgery decreases, procedures such as definitive wound closure and soft tissue reconstruction become dominant. In addition, the intervention of injuries that do not require intervention in the acute period and do not threaten life can be delayed until this period. (7). During this period orthoplastic approach that uses a combination of orthopedic and plastic surgery principles is important for treatment. Hand surgery is one of the most significant examples of the orthoplastic approach and can be an effective treatment modality not only during the acute period, but also months after natural disasters such as earthquakes. The main purpose of the present study was to reveal the role of hand surgery during the disaster period.

In the present study, admissions to the emergency department were excluded and only late outpatient admissions were included. The mean time to hospital admission after injury was 41.4 days. The most important reason for applying to the hospital so late was that people focus more on life-threatening injuries after the earthquake. When we were asked about the reasons for the late admissions, it was understood that most of the relatives of victims lost their lives, and the individuals postponed their own injuries.

Crush extremity injuries were the most common type of injury reported in the literature among people rescued alive from earthquake rubble. However, there is no study on which injuries are more common in the late period. In the present study nerve injuries were most common type of injury during the late period. All nerve injuries were sequelae of crush injury. We interpret this situation as the long-term effects of acute injuries.

It is stated that among earthquake-related injuries, lower extremity injuries are more common than upper extremity injuries (8). In the present study no comparison was made between upper and lower extremity injuries. However, we think that the incidence of upper extremity injuries may be higher in the late period. The reason for this is that upper extremity injuries are less life-threatening comparing to the lower extremity injuries.

According to the literature bone fixation is the most common treatment for earthquake-related injuries in the acute period (9, 10). Our treatment algorithm was adaptable based on the patient's requirements. For example, non-surgical treatment was performed in patients with closed nerve injuries, repair (primary or with graft) was preferred in tendon and nerve injuries after sharp laceration. Fixation was performed in patients with bone fractures. In complex soft tissue defects, orthoplastic treatment was performed. (Table 1). According to our experience, we think that the decision to treatment modality can be made more easily during the acute period, but many factors such as patients' expectation and functional status should be considered for late-onset upper extremity injuries.

Conclusion

In conclusion, earthquake-related injuries can occur not only in the acute period, but also months after the earthquake. Late admissions require reconstructive and sophisticated treatment methods. These injuries should be handled multidisciplinary by orthopedics, plastic surgery, and hand surgery departments.

Keywords: earthquake, injury, late admissions, orthoplastic approach, upper extremity



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Table 1

Patients No	Diagnosis	Treatment method
1	Total brachial plexus injury	Non-surgically
2	Radius distal fracture	Open reduction and internal fixation
3	Forearm level, radial median, and ulnar nerve injury	Neurolysis
4	Volar forearm soft tissue defect (skin, nerve, and flexor tendons)	Skin graft and tendon transfers
5	Radial nerve injury (sensory branch)	Non-surgically
6	Radius shaft fracture	Open reduction and internal fixation
7	Radial nerve injury (sensory branch)	Non-surgically
8	Radius distal and first metacarpal fracture	Open reduction and internal fixation
9	Forth metacarpal fracture	Closed reduction and percutaneous fixation
10	Dorsal forearm soft tissue defect (skin and extensor tendons)	Skin graft and tendon transfers
11	Total brachial plexus injury	Non-surgically
12	Total brachial plexus injury	Non-surgically
13	Fifth finger, flexor digitorum profundus injury	Primary tendon repair
14	Third finger, soft tissue defect (only skin)	Homodigital island flap
15	Second, third and fourth finger, flexor digitorum profundus and superficialis injury	Primary tendon repair
16	Distal radius fracture	Open reduction and internal fixation
17	Forearm level, radial median, and ulnar nerve injury	Non-surgically
18	Dorsal forearm soft tissue defect (only skin)	Vacuum assisted closure and skin graft
19	Volar forearm soft tissue defect (skin, nerve, and flexor tendons)	Skin graft
20	Radial nerve injury (sensory branch)	Non-surgically
21	Distal radius fracture	Open reduction and internal fixation
22	Dorsal hand soft tissue defect (only skin)	Vacuum assisted closure and skin graft
23	Third finger, proximal phalanx fracture	Closed reduction and percutaneous fixation
24	Third and fourth finger, extensor digitorum communis injury	Primary tendon repair
25	Forearm ulnar nerve injury	Nerve repair with sural nerve autograft
26	Total brachial plexus injury	Non-surgically
27	Forearm level, radial median, and ulnar nerve injury	Primary nerve repair
28	Forearm level, radial median, and ulnar nerve injury	Nerve repair with sural nerve autograft
29	Dorsal forearm soft tissue defect (only skin)	Local flap
30	Forearm level, radial median, and ulnar nerve injury	Neurolysis
31	Forearm level ulnar nerve injury	Nerve repair with sural nerve autograft

The details of diagnosis and treatment methods of the patients.



OP-023

Subtotal Palmar Fasciectomy with Skin Z-Plasty Results in Dupuytren's Disease: Minimum One Year Follow-Up

Kadir Uzel, Murat Birinci, Mehmet Akif Çağan, Alparslan Uzun, Bilgehan Çatal, Adnan Kara

Istanbul Medipol University, Department of Orthopedics and Traumatology, İstanbul / Türkiye

Introduction

Dupuytren's disease is a chronic progressive disease that affects the connective tissue and may cause functional restriction by causing significant contractures in the metacarpophalangeal (MCP) and proximal interphalangeal (PIP) joints as a result of abnormal thickening of the palmar and digital fascial bands. 1,2) The most common locations are 4th and 5th fingers but all fingers may be affected.3,4) Etiology is not fully understood but there are many risk factors including genetic predisposition, ethnicity, sex and age as well as smoking, alcohol consumption, diabetes and environmental factors like hand trauma. 5,6) Its frequency is reported between 2% and 42%. 7)

Treatment modalities for Dupuytren's disease may vary from non-surgical options such as steroid injection, needle aponeurotomy and collagenase injection to surgical interventions such as percutaneous fasciectomy, limited (subtotal) fasciectomy, dermofasciectomy and total fasciectomy.8-10) Flexion contracture more than 30 degrees in MCP joints and any degree of flexion contracture in PIP joints are considered as surgical candidate by various authors. Choice of the surgical technique to treat Dupuytren's disease changes depending on the surgeon's preference and experience. Each surgical technique has its own advantages and disadvantages. Subtotal palmar fasciectomy is one of the most commonly used and popular method.11)

The aim of this study was to evaluate short to mid-term functional results, recurrence rates and complications in patients treated with subtotal palmar fasciectomy (SPF) and skin lengthening procedure with Z-plasty for Dupuytren's disease.

Materials and Method

In this study, 5 women and 13 men who have been operated due to Dupuytren's disease from 2018 to 2021 are retrospectively analyzed. Patients who had a minimum follow-up of 1 year, who attended their controls regularly, and who completed the scoring were included in the study. This study was approved by the Ethical Committee of the İstanbul Medipol University School of Medicine (registration number: E-10840098-772.02-4797).

Patients were informed about preoperative risks, benefits, alternative treatment and complications. Informed consent was obtained from the patients. All patients were operated under anesthesia with laryngeal mask and pneumatic tourniquet. After performing subtotal palmar fasciectomy, skin lengthening with z-plasty at the level of the palmar creases were performed during closure (Figure 1). The surgical procedures were performed by a single experienced specialist. Postoperative splint was applied to affected fingers in extension. In the second week, range of motion exercises were initiated following suture and splint removal. The splint usage was continued for 6 weeks at night.

Clinical condition of the hand was examined and noted preoperatively and postoperatively. Level of the contracture was noted by determining the involved finger and the joint.

Function and patients reported outcomes were evaluated with Quick Disabilities of the Arm, Shoulder and Hand Questionnaire (QDASH) consisting of 11 questions. Evaluation is made out of 100 points and higher points show more functional disability.12) In the postoperative period, the patients were asked how well the operated extremity fulfilled their expectations functionally on their daily and/or professional life and how satisfied they were with this situation questionnaire. They were requested to mark a scoring card ranging from 0 (not satisfied at all) to 10 (very satisfied) to determine their satisfaction scores. This allowed for the determination of patient satisfaction scores regarding the extent to which their functional expectations were met postoperatively.

Return-to-work, preoperative and postoperative range of motions, complications (wound complications, recurrency, injuries to vessels and nerves, flap or graft requirement) were noted. Re-contracture of MCP joint more than 30, and PIP joint more than 5 degree are considered as recurrence.



Statistical analysis was performed using SPSS for Windows, version 15.0 (IBM Corp, Armonk, NY, USA). The Kolmogorov-Smirnov test was used to verify the normal distribution and homogeneity of variances of data. Pre- and postoperative data were analyzed using a paired t tests or Wilcoxon test. Statistical significance was considered at $P < 0.05$.

Results

Two patients were not included in the study. One patient was excluded because she did not come for follow-ups, and the other patients follow-up period was less than 1 year. Average age of the remaining 16 patients was 60,1 (range:43-77). Average follow up time was 20,7 months (range 12-31). 32 fingers and 40 joints were treated. (Table 1)

Preoperative mean MCP joint flexion contracture degree was 42,8 (range:30-70 degree) while the postoperative mean was 2 (range: 0-30). The difference was statistically significant ($p < 0.05$). There was a recurrence of 15 degrees in 2 fingers of 1 patient and 30 degrees in 1 finger of 1 patient. Complete recovery was achieved in other patients.

Preoperative mean PIP joint flexion contracture degree was 42,2 (range:20-90 degree) while the postoperative mean was 7.5 (range: 0-30). The difference was statistically significant ($p < 0.05$). Recurrence of 10 degrees in 1 finger of 1 patient, 20 degrees in 1 finger of 1 patient (who also had 30 degree of recurrence in MCP joint), 30 degrees in 1 finger of 1 patients was observed. Other patients was completely recovered. There were no need for reoperation.

Mean preoperative QDASH score decreased from 44 (range:32.5-50) to 9.6 postoperatively (range:7.5-12.5). The difference was statistically significant ($p < 0.05$). Also, the postoperative patient satisfaction score was 8.6 postoperatively. Mean return to work was 41,25 days.

Superficial skin necrosis on surgical wound area was observed in 2 patients without any flap or graft need. The wounds were healed by secondary wound healing. Postoperatively, mild hypoesthesia in 3 fingers of 3 patients was developed. However since digital neurovascular structures were visualized and protected intraoperatively this hypoesthesia was considered as neuropraxia and all were recovered spontaneously during the follow up period. No wound infections was noted.

Discussion

Despite the increased preference for percutaneous releasing procedures, presence of advantages such as low recurrence rates and visualization of released tissues makes SPF to be one of the most commonly used surgical alternatives for Dupuytren's disease. In this study, we observed significant improvement in both clinical results and satisfaction scores in patients who have undergone SPF.

Dupuytren's disease significantly affects hand functions and can cause rigid deformities frequently in PIP and less often in MCP joints. Although different invasive and non-invasive techniques are present, aims in both are to reach maximum range of motion and to get a functional extremity. In a study involving 34 patients and 52 joints, limited fasciotomy (LF) has been performed and patients were followed up for an average of 9,2 years. Except for one patient, contractures of MCP joints have regressed from 35 degrees to 0 (full extension) while from 52 degrees to 25 in PIP joints.13) In a randomized controlled cohort with 93 patients' 5 year-follow-up results, percutaneous needle aponeurotomy (PNA) and limited fasciotomy were compared. LF was found to be superior to PNA in this study which has considered as success for extension lag up to 5 degrees.14) On the other hand, Kan et al. reported in their 80 patient-series that there is no difference between LF and PNA in terms of both recurrence rates and postoperative range of motion. 15) We observed release in contractures in our patient group, parallel to literature. In 32 MCP joints the mean release was from 43 degrees to 2 while it was from 41 degrees to 7,5 in 8 PIP joints.

Each technique has its own advantages and disadvantages. Although the amount of release in contractures is not so different between PNA and LF in short-term, it is reported up to 80% for PNA in long-term. 16) On the other hand, it is reported in the literature that the probability of recurrence during follow-up period is between 5 and 54% in spite of successful LF and release in early period. 3,17,18) Lack of a criteria for recurrence might be the reason why reporting data are in such a wide range. Different degrees of contractures are considered to be recurrence in different publications. 17) We accepted it as recurrence when there are re-contractures more than 5 degrees in PIP and more than 30 degrees in MCP. There were recurrences in PIP joints of 3 fingers (38%) and in MCP joint of 1 finger (3%). Patients didn't prefer to have a new surgical intervention, because they pointed that they are satisfied with the first procedure despite the re-contractures.



12th

BAPRAS CONGRESS

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Pain and functional restrictions due to contracture affect daily activities of patients and cause dissatisfaction. The effectiveness of the procedures can be assessed by PROMS. Budd et. al. reported a correlation between preoperative range of motion and QuickDASH score in 69 patients who have undergone a surgical intervention for Dupuytren's disease. 19) In a cohort study of 30 patients who have been followed with a night splint for 24 weeks after limited fasciotomy, the mean QuickDASH scores were decreased from 61,5 to 8,5. The time to return to work after Dupuytren's surgery is also affected by the treatment modality and patient population. Blake et. al. analyzed the return to work time and cost of 1385 patients who had been treated by percutaneous releasing or limited fasciotomy. They stated that 50% of the patients got back to work the first 2 weeks, 75% within 4 weeks and 90% within 10 weeks while 11 patients didn't return to work. 20) In our patient group, we found that the mean return to work time was 41 days (30-50) and the mean QuickDASH score decreased from 44,2 to 9,7. Also, patient satisfaction score was 8.6. Our QuickDASH scores are consistent with literature but the patients return to work later. We think that this difference may be related to the fact that most of our patients were handworkers and our public insurance system is different from that of other countries.

Besides all the good results, the development of complications is inevitable as nature of the all surgical interventions. Skin necrosis which may need flap or skin graft and numbness at the incision site are the most common complications.14,21) In addition to these complications, infection, regional pain syndrome, hematoma, digital artery and nerve injury and flexor tendon injuries are reported. In a review which investigated 28 patients who have undergone fasciectomy, it has been reported that the complication rates are between 3,6-39,1%. 14) In a 6-week follow-up study comparing PNA and limited fasciotomy, 117 operated hands were examined and it was stated that 23% paresthesia, 2% hematoma, 2% digital nerve damage and 2% infection developed in the LF group. Superficial skin necrosis has developed at the incision border in 2 patients(12%) and they are healed well without a secondary intervention. 3 patients (18.5%) showed mild hypoaesthesia during postoperative period. However, it is considered as neuropraxy because digital neurovascular structures were identified, protected and retracted during operation. Neuropraxy is dissolved in all patients at postoperative follow-ups. No major complications have been developed. We think that it is a good option to reduce the tension between the wound borders by increasing the skin surface with small Z-plasties while closing the incisions to minimize the risk of skin necrosis and recurrence. Unlike Brunner incision, skin lengthening procedures are performed during closure as needed, not during the incision.

Retrospective nature of the study, small sample size, non-homogeneity and absence of control groups are limitations of the study. Short follow up period might have caused the low recurrence rates. Unknown duration of functional limitation before operation is also a limitation. Prospective studies with a larger number of patients and comparing the long-term results of different surgical methods should be designed.

Keywords: Hand, contracture, Dupuytren's disease, subtotal palmar fasciectomy, Z-plasty



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org

Figure 1



a. Determination of the preoperative longitudinal incision of the patient who was operated for approximately 70 degrees of flexion contracture b. Demonstration of preservation of the integrity of the digital nerves after subtotal palmar fasciectomy (blue arrows) c. Reducing the tension in the incision by applying Z plasties at the level of palmar crises d. Image after closure of the incision

Figure -2



a. First-year control of the patient who was operated for the contracture in the 4th finger, palmar view. b. Side view.

Table-1

Finger (n)	Number of MCP joints	Number of PIP joints
Index Finger (1)	1	0
Middle Finger (6)	6	1
Ring Finger (16)	16	5
Small finder (9)	9	2
TOTAL	32	8

Distribution of Contractures according to fingers and joints



OP-024

Comparison of Physical Examination Accuracy in Flexor Zone 5 Injury in Pediatric and Adult Age Group

Oguz Kagan Kocak, Gökce Yildiran, Zekeriya Tosun

Plastic, Reconstructive and Aesthetic Surgery Department, Selçuk University Faculty of Medicine, Konya / Türkiye

Introduction

Flexor zone 5 extends from the transverse carpal ligament to the musculotendinous junction. This region contains 12 tendons, 3 nerves, and 2 arteries.¹ Injuries to flexor zone 5 account for 26% to 48% of all flexor tendon injuries. ^{2,3} The fact that the tendons and neurovascular structures are very close to each other in this region paves the way for combined injuries. In addition, there is no correlation between the size of the incision and the severity of the injury, i.e., the number of damaged anatomical structures.⁴ Accuracy of physical examination in flexor tendon zone 5 injuries; The outcome of trauma depends on many factors, including patient arousal, intellectual level and adaptation, and surgeon knowledge and experience. Flexor zone 5 injuries present challenges for diagnosis and surgical exploration.⁵ The purpose of this study is to compare the accuracy of physical examination of distal flexor zone 5 injuries in children and adults.

Materials-Method

A total of 102 patients who presented to our clinic and underwent surgery between July 2021 and June 2023 were included in the study. Patients aged 7 to 18 years were classified as children and patients older than 18 years were classified as adults. Patients aged 7 years and older who were able to cooperate with the basic hand examination and who had injuries at the distal ½ flexion zone 5 were included in the study. Patients younger than 7 years of age, with flexion zone 1 to 4 injuries, multiple cuts in flexion zone 5, crush injury and bony pathologies were not included in the study. A physical examination was performed preoperatively on all patients included in the study using the checklist routinely used in our hospital. The examination was performed by 3 plastic surgery residents. Patient demographics and injury etiology were recorded. During the physical examination, 12 volar forearm tendons, 2 nerves (median nerve and ulnar nerve), and 2 arteries (radial artery and ulnar artery) were examined. A simple hand examination was performed to examine the tendons and nerves, and the Allen test was used to examine the arteries. Surgical exploration was performed in all patients with damaged volar forearm fascia, as per routine procedure in our clinic. After surgery, the damaged structures and repair techniques were properly documented by the operating surgeon. The accuracy of the physical examination was calculated for tendons, nerves, and arteries separately for the pediatric and adult groups. All tests were performed in duplicate to avoid false positive results. Results were analyzed with the Mann-Whitney U test using SPSS version 22.0 (IBM Corp., Armonk, NY, USA). A value of $p < 0.05$ was considered statistically significant.

Results

102 patients who underwent surgery for distal ½ flexor zone 5 injury were included in the study. A total of 30 patients, 23 males (76.6%) and 7 females (23.3%) in the pediatric group and a total of 72 patients, 57 males (79.1%) and 15 females (20.8%) in the adult group were included in the study. The mean age of the pediatric patient group (13.28 ± 3.13) was calculated as the mean age of the adult patient group (34.30 ± 11.30). The most common mechanism of injury in both groups was stab wounds (43%). In the pediatric patient group, a total of 48 tendon injuries, 10 nerve injuries, and 12 arterial injuries were detected. In this group, the mean physical examination accuracy was calculated for tendon injuries ($96.66 \pm 6.78\%$), nerve injuries ($83.33 \pm 23.97\%$), and arterial injuries ($80 \pm 24.91\%$). In the adult group, a total of 127 tendon, 49 nerve, and 38 arterial injuries were identified. In this group, the mean accuracy of physical examination was calculated for tendon injuries ($96.35 \pm 7.19\%$), for nerve injuries (90.41 ± 19.82), and for arterial injuries (91.78 ± 18.65). When the results were analyzed using the Mann-Whitney U test, it was found that the hit rate for physical examination was significantly higher in the adult group than in the pediatric group ($p < 0.05$). No significant difference was found for tendon and vascular injuries.



Discussion and Conclusion

Lacerations in the flexor zone 5 are challenging for physical examination and surgical exploration and repair of damaged tendons and neurovascular structures. Although a detailed physical examination during surgery is very informative, special attention should be paid to exploration of the major neurovascular structures and tendons. Injuries to the distal ½ flexor zone 5 are important because of their proximity to the transverse carpal ligament. Pediatric patients in particular may have difficulty adjusting to physical examination because of trauma-related agitation, pain, and anxiety. In this study, the age group of 7- to 18-year-olds was included to increase cooperation during the physical examination. The accuracy of physical examination for tendon injuries was similar in both groups. However, for physical examination of nerve and arterial injuries, hit rates were lower in the pediatric age group than in adults. It is suggested that the reason for this is that the pediatric group is less sensitive to the pressure applied when performing the Allen test. Therefore, the use of Doppler ultrasound in arterial testing could be quick, convenient, and more comfortable for the patient. There was a significant difference in parameters belong to nerve injury between the two groups. This can be explained by the fact that nerve examination is more subjective than arterial and tendon examination. Consequently, patients with flexion zone 5 injuries should undergo a detailed physical examination, and nerve and arterial injuries should always be considered during surgical exploration, especially in the pediatric age group.

References

- 1- Kleinert HE, Spokevicius S, Papas NH. History of flexor tendon repair. J Hand Surg Am. 1995;20:S46-S52.
- 2- Lister GD, Kleinert HE, Kutz JE, Atasoy E. Primary flexor tendon repair followed by immediate controlled mobilization. J Hand Surg Am. 1977;2(6):441-451.
- 3- Singer M, Maloon S. Flexor tendon injuries: the results of primary repair. J Hand Surg Br. 1988;13(3):269-272.
- 4- Hudson DA, de Jager LT. The spaghetti wrist. Simultaneous laceration of the median and ulnar nerves with flexor tendons at the wrist. J Hand Surg Br. 1993;18(2):171-173.
- 5- Gibson TW, Schnall SB, Ashley EM, Stevanovic M. Accuracy of the preoperative examination in Zone 5 wrist lacerations.

Keywords: Flexor tendon injury, zone 5, pediatric hand injury, physical examination, exploration



OP-025

Innovative Use of Rubber Bands in Managing Large Tissue Defects

Oğuz Eker, Gökçe Yıldırım, Zekeriya Tosun

Plastic, Reconstructive and Aesthetic Surgery Department, Selçuk University, Konya / Türkiye

Introduction

Large open wounds are common in the field of plastic surgery and often result in physical limitations and complications for patients that ultimately require surgical intervention. These wounds can occur in various locations and sizes throughout the body and are characterized by the inability to approximate the wound edges by pinching. Such extensive tissue defects may arise from fasciotomy closures, large burns, trauma, skin tumors, pressure ulcers, vascular disease, and other similar conditions. Such wounds frequently lead to increased mortality, morbidity, and treatment costs while causing aesthetic and functional impairment for the patient.(1)

Addressing these complex wounds requires the use of a range of closure techniques tailored to the complexity of the wound, including primary closure, skin grafting, and local or distant flaps.(2) However, when the wound edges cannot be approximated and the wound remains open, the healing process occurs through secondary intention. This approach is associated with prolonged wound healing, frequent dressing changes, protein and electrolyte losses from the wound, increased risk of infection, and the formation of unsightly scars.(2)

Skin grafts are used by many physicians as a standard treatment to close such open wounds. Although skin grafts accelerate the healing process, they may lead to donor site morbidities, an insensitive graft area, potential graft failure and contractures, and result in an aesthetically unfavorable outcomes, contributing to patient discomfort and dissatisfaction.(3)

The objective of this study is to present the advantageous outcomes of large wounds managed with external tissue expansion using rubber bands in our clinic and to assess the efficacy of this method.

Materials and Method

This study includes patients who underwent surgery for closure of extensive tissue defects with rubber bands by external tissue expansion in our clinic between February and July 2023. This technique, which was initiated after the earthquake in Kahramanmaraş/Türkiye on February 6, 2023, has been employed for the closure of extensive fasciotomy defects in our clinic and subsequently tested for use in other large tissue defects as well. The technique of external tissue expansion using the rubber band method has been employed, as previously described in the literature by Acartürk TO. and colleagues.(4) Patients whose tissue defects were closed with skin grafts, local and distant flaps, and tissue expanders were excluded from the study. The demographic characteristics of the patients, etiology, defect size, anatomic location, hospital stay, complications, and revisions were recorded. Evaluation of wound healing, hypertrophic scarring, and wound dehiscence was based on preoperative, intraoperative, and postoperative 1-month photographs of the patients.

Surgical Technique:

All surgeries were performed by the same plastic surgeon. Open and extensive wounds were surgically debrided, and necrotic tissue was removed from the wound site. Rubber bands were used only after ensuring complete wound debridement and confirming that there were no visible signs of active infection. After preparing the wound for closure, one rubber band was applied to the wound edges, starting from the wound apex to the wound base, using staples placed at approximately 10 mm intervals perpendicularly to the wound. Prior to each stapling, the rubber band was twisted back-and-forth to provide tension. In selected cases, wound closure was performed in stages, gradually increasing the staple spacing according to the tension of the wound and the size of the defect, leaving the center of the wound open. This approach allowed partial closure of the wound before complete closure was achieved. After complete closure of the wound with the rubber band, a 7-day dressing period was observed, during which the wound edges were monitored for signs of impaired perfusion, infection, wound dehiscence, or other potential complications. The rubber bands were covered with a chlorhexidine gauze dressing (Bactigras, Smith & Nephew), and patients were treated with antibiotics until definitive closure. If no complications were detected, the wound edges were primarily sutured.



Results

In our study, a total of six patients, three males and three females, with a mean age of 34.8 years (1.5 – 59), had nine tissue defects closed with rubber bands. These included one patient with bilateral defects following brachioplasty, one patient with a tissue defect in the donor area of the great saphenous vein after coronary artery bypass grafting, and four patients in whom a total of six fasciotomy-related defects were closed with the rubber band method. The etiology of the fasciotomy defects included extravasation injury in two cases and compartment syndrome due to crush injury following entrapment during earthquake-related collapse in two cases. The anatomical distribution of the nine closed defects included one in the lower extremity (thigh), two in the upper extremity (arm), and six in the upper extremity (forearm). Two-stage rubber band application at 1-week intervals was used in four strained defects, whereas the remaining five defects underwent single-stage rubber band application followed by definitive wound closure.

Case Example 1: A 59-year-old female patient presented with a defect in the donor area of the saphenous vein following a coronary artery bypass graft surgery.

Case Example 2: A 33-year-old female patient presented with a defect after brachioplasty operation.

Discussion

Despite the numerous methods and products available for the management of extensive wounds, failures remain common. One of the significant challenges in the treatment process is the complexity of skin closure, which poses the risk of infection and other coexisting health issues, leading to prolonged hospitalization and hindering overall treatment.

The initial application of wound closure with elastic bands was described by Cohn et al. in the closure of fasciotomy defects. (5) Since then, this technique has gained increasing popularity and has been documented in the literature for various types of wounds such as extensive burn injuries, compartment syndrome, open fractures, and others. (4,6–8)

Although skin grafts are widely used and effective for covering fasciotomy defects, they are associated with numerous comorbidities, including donor site morbidity, potential graft failure, graft contracture, suboptimal aesthetic results, and tissue and contour abnormalities. (3) Utilizing the tissue expansion method with a rubber band, instead of relying on skin grafts, allows for a superior cosmetic outcome and eliminates the risk of additional donor site morbidity, enabling the possibility of delayed primary closure.

For healing larger wounds of the body wall, elastic bands used to pull the wound edges are an efficient tool. Taking advantage of the elastic property of skin, it is stretched to close the wound. (8) When the skin is loaded, the tissue gradually stretches so that the force necessary to maintain tension gradually decreases due to the organization of the collagen fibers. (9)

In summary, the use of rubber banding is a promising solution that harnesses affordable and easily accessible resources. This innovative approach has demonstrated remarkable achievements in achieving primary wound closure that results in aesthetically pleasing linear scars while avoiding significant complications or the need for subsequent corrective surgery. The rubber band technique is particularly effective in patients with surgical wounds and fasciotomy, where conventional methods such as STSG or flap coverage would have been the norm, and is a successful alternative.

Keywords: External tissue expansion, Rubber band, Wound closure, Fasciotomy, Large wounds, Surgical wounds



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Figure



Saphenous vein donor area defect, A: after serial debridement, B: rubber band closure, C: after 1-week definitive closure

Figure 2



Brachioplasty wound defect, A: after serial debridement, B: the first stage rubber band, C: the second stage rubber band, D: definitive wound closure



OP-026

Surgical Treatment of High Flow Congenital Arteriovenous Malformation in The Upper Extremity

Mehmet Işık, Serkan Yıldırım, Niyazi Görmüş

Necmettin Erbakan University, Cardiovascular Surgery, Konya / Türkiye

Introduction

An abnormal communication between an artery and a vein is known as an arteriovenous malformation (AVM) or arteriovenous fistula (AVF). An AVM or AVF can be congenital or acquired. Congenital vascular anomalies are classified in two groups as haemangiomas and vascular malformations. The definition of venous malformation is generally used as an inclusive name in the literature.

Haemangiomas are characterised by benign neoplastic proliferation of vascular endothelial cells and an increase in mast cells, whereas vascular malformations are characterised by progressive ectasia of the vessels without cellular hyperplasia.¹

Congenital AVMs (CAVM) are caused by a defect during differentiation of the embryonic vascular system. Exactly how they develop is unknown.² They are rarely symptomatic at birth and mostly become symptomatic with advancing age. Because of their late presentation, they may be assumed to be acquired diseases. Although it is mostly seen in the extremities, head, neck and internal organs may be involved. Pulsation, thrill and murmur in the lesion area are clinical findings that are suspicious for AVM. Definitive diagnosis is made by angiographic imaging methods. If left untreated, AVMs may cause symptoms leading to heart failure due to high flow rate.

Materials and Methods

Arteriovenous malformations (AVM) are rare congenital anomalies. It occurs when there is a direct connection between the artery and vein without a capillary structure. If left untreated, it may cause symptoms leading to heart failure. In this case report, we present a 10-year-old male patient with congenital AVM in the left upper extremity. The patient had complaints of palpitations and dyspnoea for the last three months. The large shunt between the radial artery and deep vein was treated by primary closure through the deep vein. There are endovascular or surgical treatment options for AVM treatment. In this study, we aimed to present what should be considered in the choice of AVM treatment method.

Result

A 10-year-old male patient had complaints of palpitations and dyspnoea on exertion that started three months ago. Physical examination revealed palpable pulsation and thrill in the antecubital region of the right arm. On detailed questioning, it was learnt that no blood sampling or any other interventional procedure had been performed in this region before. She had a history of atopic dermatitis. Her family history was unremarkable. MR angiography was performed after Doppler ultrasonography revealed high flow venous flow. MR angiography report showed a high-flow AVM between the proximal right radial artery and basilic vein (Drawing 1).

A 10-year-old male patient had complaints of palpitations and dyspnoea on exertion that started three months ago. Physical examination revealed palpable pulsation and thrill in the antecubital region of the right arm. On detailed questioning, it was learnt that no blood sampling or any other interventional procedure had been performed in this region before. She had a history of atopic dermatitis. Her family history was unremarkable. MR angiography was performed after Doppler ultrasonography revealed high flow venous flow. MR angiography report showed a high-flow AVM between the proximal right radial artery and basilic vein (Drawing 1).

The opening of the lesion to the deep vein was closed with 7/0 polypropylene without narrowing the radial artery (Drawing 3). The vein was then sutured with 7/0 polypropylene. Postoperative thrill and pulsation disappeared. The opening of the lesion to the deep vein was closed with 7/0 polypropylene without narrowing the radial artery (Drawing 3). The vein was then sutured with 7/0 polypropylene. Postoperative thrill and pulsation disappeared.



Discussion

AVMs may be congenital or acquired. It would also be appropriate to use the term vascular malformation to encompass all vascular malformations, regardless of the amount of blood passing through the arterio-venous shunt. Vascular malformations occur in approximately all benign tumours. It constitutes 7 per cent of the total.³ Approximately 3% of it is congenital.

Clinical findings vary according to the size, duration, location and distance from the heart of the shunt between the artery and vein. In the arterial system distal to the shunt, pain, ischaemic findings and atrophy of the extremities may develop due to decreased blood flow. Symptoms of heart failure may be observed in large shunts with high flow.⁴ AVMs that cause venous ulceration in the lower extremities due to the presence of more than one connection point have also been reported.⁵ Symptomatic and rapidly growing AVMs should be treated because of possible complications. Asymptomatic cases can be followed up according to the growth rate.⁶ In this case, the decision for surgical treatment was taken because the patient was symptomatic and MR angiography showed a large shunt.

AVMs are often confused with haemangiomas in the differential diagnosis. Imaging modalities such as CT angiography or MR angiography are required for the definitive diagnosis of both anomalies. As a radiological difference, AVMs usually have multiple and large diameter feeding arteries, whereas haemangiomas have a small and single feeding artery. In AVMs, murmur is a more prominent clinical finding because of the large diameter artery. On pathological examination, hemangiomas show endothelial hyperplasia whereas AVMs show normal endothelial cell kinetics.^{1,7}

Endovascular intervention and surgical methods are alternatives to each other as treatment options. Endovascular methods include embolisation or stent placement at the lesion site. In surgical treatment, primary closure, ligation, division, end-to-end anastomosis, graft interposition and patch repair methods can be used. Treatment decision should be made by taking into account the localisation of the AVM, size and accessibility of the shunt, mobility of the extremity, age, and comorbid conditions for anaesthesia. In large diameter shunts, the embolising agent may pass into the venous system and cause pulmonary embolism. In young patients and mobile extremities, surgical treatment should be preferred because stents may be a source of thrombus in the long term.⁸ It should be kept in mind that endovascular stents to be used in children will cause diameter inappropriateness with growth. Endovascular treatment options may be appropriate in elderly patients with comorbid conditions or in cases where surgical access to the lesion is difficult. While endovascular systems shorten the duration of hospital stay, there is still the problem of high cost for our country.

The aim of treatment should be to terminate all connections of the AVM. Otherwise, recurrences may occur due to pulsatile flow. Surgical treatment has the advantage of visualising the lesion in all dimensions and removing all side branch connections. In addition, in cases where primary repair can be performed, permanent foreign material that may cause new complications is not used. One of the important complications of surgery is haemorrhage. Therefore, blood should be supplied preoperatively. Another undesirable situation is damage to the nerve or surrounding tissues during the removal of the lesion. These complications can be prevented with adequate arterial control and good dissection of the surrounding tissue. The disappearance of preoperative thrill after surgery is one of the findings indicating the success of the operation.

In our study, the patient had no history of blood sampling, needle stick or trauma in the right arm. Therefore, we characterised our patient as CAVM. We preferred surgical treatment as the primary method for the closure of CAVM. The patient's childhood age, the ease of access to the lesion, the high flow rate of the shunt, the lesion's

The fact that the lesion was located in the region with high mobility such as the antecubital region was a factor in our preference for surgical treatment. Since the lesion did not have enough neck, the shunt area was closed from the inside by opening the vein in order not to narrow the radial artery. The vein and artery could have been repaired separately by cutting the connection area. In this case, there was a possibility of narrowing both vascular structures.

In cases with multiple connections that cannot be clearly evaluated by imaging methods, surgical treatment is advantageous because it provides good control. When deciding on endovascular or surgical treatment, we believe that a good profit and loss calculation should be made by taking into account factors such as the patient's age, comorbid conditions, whether the lesion is located in mobile localisations such as the joint region and the difficulty of surgical access, and the most appropriate treatment method should be preferred.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



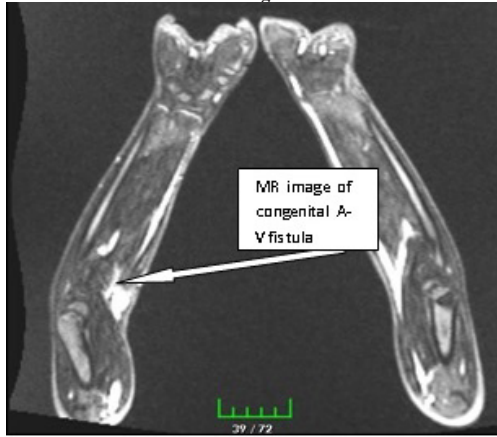
13 September
Pre Congress Course
14 - 15 September
Congress

Referanses

- 1- Enjolras O, Mulliken JB. Vascular tumours and vascular malformations (new issues). Adv Dermatol. 1997;13:375-423
- 2- Riles TS, Rosen RJ, Berenstein A. Peripheral arteriovenous fistulae. In: Rutherford RB, ed. Vascular Surgery. Philadelphia: Saunders 1995:1211-1218.
- 3- Cappabianca S, Del Vecchio W, Giudice A et al. Vascular malformations of the tongue: MRI findings on three cases. Dentomaxillofac Radiol. 2006;35:205-8.
- 4- Toker ME, Eren E, Akbayrak H et al. Combined approach to a peripheral congenital arteriovenous malformation: surgery and embolisation. Heart Vessels. 2006;21:127-130.
- 5- Isik M, Gunerhan Y, Ege E. Chronic Leg Ulcer Due to Arteriovenous malformation: A case report. EJCM. 2018;6(2):96-99
- 6- Odabaşı D, Başel H, Ekim H. Surgical treatment of arteriovenous malformation of the finger: A case report. Van Medical Journal. 2011;18(2):113-116.
- 7- Lee BB. New approaches to the treatment of congenital vascular malformations (CVMs)-A single centre experience. Eur J Vasc Endovasc Surg. 2005; 30: 184-97.
- 8- Isik M, Tanyeli Ö, Dereli Y et al. Gradual treatment of arteriovenous fistula in femoral vessels as a complication of coronary angiography. Braz J Cardiovasc Surg. 2018;33(6):631-3.

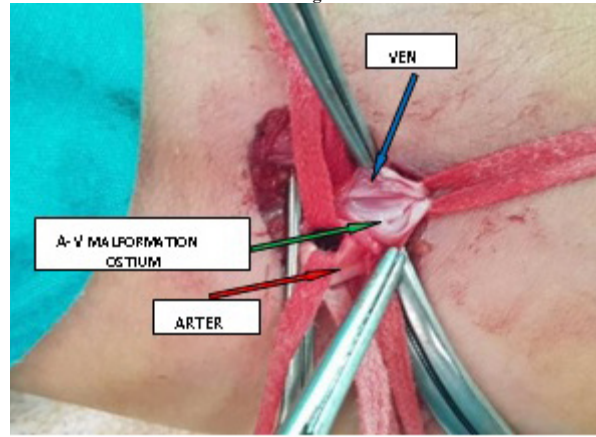
Keywords: Arteriovenous malformation, congenital, endovascular, fistula, vascular

Figure 1



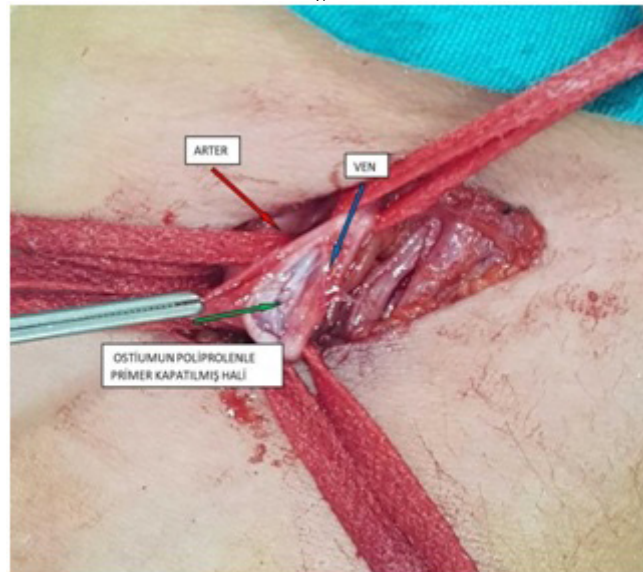
Magnetic resonance imaging angiography image

Figure 2



Peroperative visualisation of A-V malformation.

Figure 3



Primary sealed shape.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-027

Atypical Pressure Sores due to Entrapment under Debris in Earthquake

Hasan Basri Çağlı¹, Fatih Berk Ateşşahin¹, Esra Aydın¹, İsmail Aksu², Adnan Menderes¹, Cenk Demirdöver¹

¹The Department of Plastic, Reconstructive and Aesthetic Surgery, Dokuz Eylül University Hospital, İzmir / Türkiye

²Department of Plastic, Reconstructive, and Aesthetic Surgery of Seyhan Public Hospital, Adana / Türkiye

Aim

The purpose of this study was to reveal that pressure sores are an important health problem in earthquake survivors.

Material and Methods

After the Kahramanmaraş-centered earthquakes, the patients with pressure sores due to entrapment under debris were evaluated. Demographic data of the patients, hospitalization reasons, duration of, stages and localizations of pressure sores were recorded. And, earthquake-related pressure sores discussed in terms of pathophysiological process, patients' age distribution, localizations of pressure sores and treatment response compared to patients with pressure ulcers in the normal population.

Results

A mean age of 30.3 (4-67) years, 19 patients, 10 (52.6%) male and 9 (47.4%) female, had a total of 37 pressure sores, with a mean of 1.9. The distribution of pressure sores' stages was as 15 sores stage 2 (40.5%), 8 sores stage 3 (21.6%), 4 sores stage 4 (10.8%) and 10 sores unstageable (27%). And, they were seen in many different and atypical localizations like frontal area, lumbar area, thigh, leg.

Conclusion

Earthquake-related pressure sores are a common health problem that should be included in the diagnosis and treatment algorithm for the earthquake survivors. Surgical treatment may be considered in the forefront for these patients since factors in the pathophysiology of pressure sores have eliminated by getting out of the debris.

Keywords: Crush injury, decubitus ulcer, earthquake, pressure injury, pressure sore

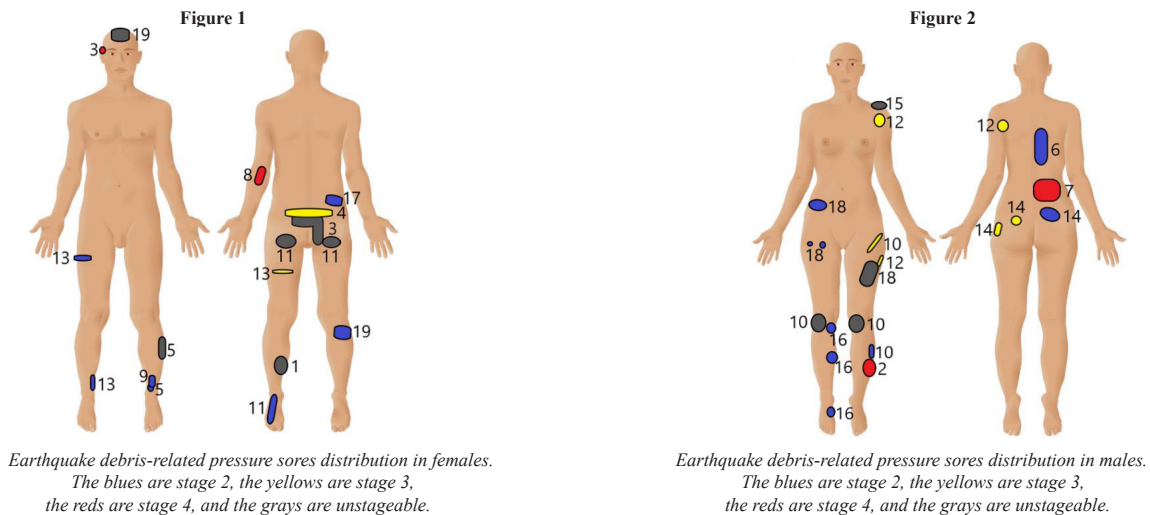


Figure 3



12th

BAPRAS CONGRESS
Selçuklu Convention Center Konya, TÜRKİYE



2023
13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org



Some pressure sores due to entrapment under debris. Lumber area (A), sacrum (B), elbow (C), knee (D), frontal area (E), thigh (F).

Table 1

Patients	Age	Gender	Number of days under debris	Number of pressure sores	Localizations	Stages
1	4	Male	3	1	Leg	Unstageable
2	5	Female	4	1	Leg	4
3	6	Male	3	2	Sacrum Ear	Unstageable 4
4	13	Male	3	1	Lumbar	3
5	13	Male	4	2	Leg Leg	Unstageable Unstageable
6	14	Female	2	1	Back	2
7	15	Female	2	1	Lumbar	4
8	21	Male	4	1	Elbow	4
9	24	Male	2	1	Leg	2
10	27	Female	4	4	Knee Knee Leg Thigh	Unstageable Unstageable 2 3
11	33	Male	4	3	Foot Ischium Ischium	2 Unstageable Unstageable
12	34	Female	4	3	Shoulder Shoulder Thigh	3 3 3
13	38	Male	3	3	Thigh Thigh Ankle	2 3 2
14	45	Female	3	3	Buttock Buttock Buttock	3 3 2
15	52	Female	2	1	Shoulder	Unstageable
16	52	Female	2	3	Knee Leg Foot	2 2 2
17	52	Male	3	1	Lumbar	2
18	62	Female	3	3	Thigh Thigh Abdomen	2 2 2
19	67	Male	3	2	Frontal Leg	Unstageable 2

The patients with earthquake-related pressure sores.



OP-028

Combination of Surgical Excision with Pre-Postoperative Radiotherapy in Treatment of Keloids Resistant to Steroid Injections

Nevra Seyhan, Miray Kalınbaşoğlu

Gülhane Training and Research Hospital, Plastic Surgery Department, İstanbul / Türkiye

Introduction and Objectives

Keloids occur as a result of aggravation of normal wound healing process (1). The most common etiological factors that cause formation of keloid are; ear piercing, trauma, infection and burn. The incidence of earlobe keloids after ear piercing is approximately 2.5 % (2). The main distinction from hypertrophic scar is that the keloids grow laterally beyond the border of the wound but hypertrophic scars do not (3). Keloids are often resistant to treatment and have a high recurrence rate (4). Multiple treatment modalities have been advocated including pressure therapy, cryotherapy, intralesional corticosteroids, radiation treatment, topical silicone and laser treatment (5). Radiation therapy has evolved as an important adjuvant therapy for keloid scars and currently keloid scars are the most common type of benign disease treated by radiotherapy (6). Our aim is to show the efficacy of the combination of surgical excision with radiotherapy before and after the operation in patients with keloids resistant to other treatments.

Materials-Methods

We retrospectively reviewed all patients with keloids resistant to steroid injections admitted to Plastic Surgery Department and treated by radiotherapy before and after surgical excision method between January 2018 and December 2020. The diagnosis of keloid was confirmed based on Japan Scar Workshop (JSW). Informed consent is obtained from all patients. We included 10 patients in the study (90% were female). All patients received RT the day before and the after the surgical excision. The total dose of RT ranged 10 to 12.5 Gy. We used Visual Analog Scale (VAS) and Manchester Scar Scale (MSS) for evaluation of the scar quality, patient satisfaction and response to treatment.

Results

All of the patients had received intralesional steroids for the keloid at least three sessions or more but they did not respond to the treatment. The age range of the patients were 18-26 (mean 21.6). The most common reason for keloid appearance was piercing. All surgically excised specimens were undergone histopathological examination and reported as keloid scar tissue. The scores from Manchester Scar Scale ranged from 5 to 11 (mean 7.2). The scar quality of 4 patients (40%) were evaluated as excellent and score 5 points in MSS. The scores obtained in VAS were between % 0-50. The average follow up time was 1.5 to 2 years (mean 1.6). We observed no complications related to RT during the follow up time. In %50 of the patients, complete remission were observed and evaluated as %0 in VAS. We obtained satisfactory results. (figure 1-2)

Discussion

Histopathologically keloid consists of a large number of fibroblasts, inflammatory cells and collagen fibers (7). Various cytokines have been shown to promote inflammatory response, cell migration and proliferation, and production of extracellular matrix while inhibiting its degradation. Besides they induce neovascularization and decrease the production of collagenase. While the peripheral areas of keloids contain blood vessels, fibroblasts, and collagen, the central areas are characterized by hypoxia, apoptosis and abundant collagen (8). The main role of RT for keloids in the adjuvant setting by significantly reducing the risk of pathological scar recurrence after surgical excision. Radiotherapy acts by slowing down angiogenesis and reducing the proliferation of new fibroblasts, leading to hampered collagen deposition (9).

Patients with keloid generally seek treatment because of cosmetic reasons and also itching, pain and tenderness. Keloids are prone to certain anatomical body areas, one being the earlobe. They are common among patients between 10 and 30 years of age (10). Our patient group is consistent with the literature in respect for that the most common etiological factor was ear piercing and age variance.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Conclusion

Keloids are real concern of cosmetic disfigurement. Surgical excision alone is not sufficient to prevent recurrences. We obtained satisfactory results by applying RT pre and postoperatively. We suggest this protocol as an alternative treatment modality in steroid injection resistant keloid patients.

References

- 1- Ogawa R. Keloid and hypertrophic scars are the result of chronic inflammation in the reticular dermis. Int J Mol Sci 2017 18(3):606.
- 2- Simplot TC, Hoffman HT. Comparison between cartilage and soft tissue ear piercing complications. Am J Otolaryngol.1998; 19:305-310.
- 3- Mustoe TA, Cooter RD, Gold MH et al. International clinical recommendations on scar management. Plast Reconstr Surg 2002; 110(2):560-571.
- 4- Alster TS, Tanzil EL. Hypertrophic scars and keloids: Etiology and management. Am J Clin Dermatol.2003; 4:235-243.
- 5- Lawrence Wt. In search of the optimal treatment of keloids: Report of a series and a review of literature. Ann Plast Surg.1991; 27:164-178.
- 6- Botwood N, Lewanski C, Lodwell C. The risk of treating keloids with radiotherapy. Br J Radiol.1999; 72:1222-1224.
- 7- Lee JY, Yang CC, Chao SC, Wong TW. Histopathological differential diagnosis of keloid and hypertrophic scar. Am J Dermatopathol 2004; 26(5):379-384.
- 8- Liu W, Wang DR, Cao YL. TGF-beta: a fibrotic factor in wound scarring and a potential target for anti-scarring gene therapy. Curr Gene Ther.2004; 4(1):123-136.
- 9- Levy DS, Salter MM, Roth RE. Postoperative irradiation in the prevention of keloids. AJR Am J Roentgenol
- 10- Crockett DJ. Regional Keloid susceptibility. Br J Plast Surg.1964; 17:245-253.

Keywords: Keloid, Radiotherapy, surgical excision, Intralesional steroid resistance, combination therapy

Figure 1a-b



a-keloid is observed in the helix and earlobe. b-the appearance after the patient received combination therapy

Figure 2a-b



a-large keloid is seen on the ear of the patient b-the aesthetic appearance is acceptable



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

OP-029

Retrospective Analysis of Patients Over 65 Years of Age Who Underwent Surgery for Skin Cancer

Soysal Baş, Saruhan Mahmutoglu, Ibrahim Akpınar, Selahattin Galyan, Kamuran Zeynep Sevim

Şişli Hamidiye Etfal Training and Research Hospital, İstanbul / Türkiye

Introduction

Skin cancers have become one of the most common and serious health problems in humans, with a growing population of elderly patients, and their incidence is on the rise. These cancers are more prevalent on exposed parts of the body that are exposed to the sun. Management of cutaneous malignancies has become a bigger challenge, especially in the elderly population with multiple comorbid conditions. For this reason, skin cancers can be an important cause of morbidity and mortality, especially in elderly patient groups. Again, especially in the elderly population, the organization of the treatment of these cancers and the surgical operations performed cause both financial burden and loss of power in the health system of the countries. In this study, we aimed to reveal the demographic data, treatments, survival and mortality rates, and clinical findings of the patient population aged 65 years and older who were operated in our clinic between 2014 and 2022 due to malignant melanoma and non-melanoma cancer, which are among the skin cancer types.

Material and Method

In this study, patients aged 65 years and older who underwent surgery for skin cancer between 2014 and 2022 in the Plastic, Reconstructive and Aesthetic Surgery Clinic of Sağlık Bilimleri University, Şişli Hamidiye Etfal Eğitim ve Araştırma Hospital were retrospectively reviewed. Age, gender, comorbidities, type of tumors and localization of tumors were determined. In addition, the surgical procedures performed on the patients, whether SLNB was performed in melanoma patients, and whether dissection was performed were analyzed.

Findings and Results

A total of 665 patients were included in the study. Of these patients, 386 (58.04%) were male and 280 (42.10%) were female. The mean age of the patients included in the screening was 76.11 years. Of the 665 patients, 56 (8.4%) (32 males, 24 females) were operated for malignant melanoma, 202 (30.37%) (114 males, 88 females) for squamous cell carcinoma, and 386 (58.04%) (224 males, 162 females) for basal cell carcinoma. In addition, 21 (3.15%) patients were operated for other skin cancers (basosquamous cell carcinoma, dermatofibrosarcoma protuberans, kaposi sarcoma, etc.). In terms of specific localization, basal cell carcinoma was most commonly found in the nose, squamous cell carcinoma in the malar region and malignant melanoma in the lower extremities.

Sentinel lymph node biopsy (SLNB) was performed in 15 of 56 malignant melanoma patients included in the study and the 5-year survival of these 15 patients was 73.3%. The 5-year survival of 41 patients without SLNB was 68.29%. Dissection was also performed in 5 (33.3%) of the patients who underwent SLNB. Lymph node dissection was performed in 15 of 56 patients.

Discussion and Conclusion

Skin cancers are the most common type of cancer worldwide and their incidence is increasing. They can be a significant cause of morbidity and mortality, especially in the elderly patient population.

Non-melanoma skin cancers are the most common cancers in Caucasians, with basal cell carcinoma being the most common. Basal cell carcinoma is a slowly progressive, locally aggressive and rarely metastasizing skin cancer. Although mortality is low, morbidity and disease cost burden are high. Cutaneous squamous cell carcinoma is the second most common type of skin cancer. Most of these patients can be cured; however, recurrence, metastasis and mortality may occur. Malignant melanoma is rarer than basal cell carcinoma and squamous cell carcinoma, but is considered a much more important public health problem than the others due to its high mortality. Of all skin cancers, malignant melanoma is the most aggressive and has the highest mortality rate, and early detection and diagnosis is vital for this tumor.



12th

BAPRAS CONGRESS

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center

Konya, TÜRKİYE

Various environmental, phenotypic and genotypic factors, especially ultraviolet radiation, play a role in the etiology of all three skin cancers. The incidence of these three skin cancers is increasing rapidly worldwide. People should be educated about skin cancers and the prevention of skin cancers and the factors, especially ultraviolet radiation, that play a role in the etiology of skin cancers. This will reduce the morbidity, mortality and cost burden to the healthcare system associated with skin cancers.

Like other studies in the literature, the most common localization of skin cancers in our study was the head and neck region. Again, the most common localization of basal cell carcinoma in the literature is the nose, and the most common localization of squamous cell carcinoma is the malar region, and the result obtained in our study is consistent with the literature. In addition, the incidence and percentage distribution of skin cancer types were found to be consistent with the literature, with the highest incidence in basal cell carcinoma.

Keywords: skin cancers, malign melanoma, squamos cell carcinoma, basal cell carcinoma, cancer



OP-030

Surgical Management of Basal Cell Carcinoma of the Nose: An Algorithm for Treatment

Dicle Aksöyler

Istanbul University Faculty of Medicine Department of Plastic Reconstructive and Aesthetic Surgery, İstanbul / Türkiye

Abstract Background

The nose is a remarkable landmark in the middle of the face. It has three layers including the skin, soft-tissue, cartilage, and bone. Thus, nasal reconstruction aims for both aesthetic and functional concerns (e.g., maintaining the nasal symmetry; avoiding to have any unpleasant scar on the nasolabial, forehead, or glabellar regions which are sources of local flap regions; excising the tumor with tumor-free margins; using the proper reconstructive approach for closure; ensuring patency of nasal valve; and providing adequate cartilage support and proper breathing. Mohs micrographic surgery has been gaining popularity with increased cure rates and preserved native tissue on primary and secondary BCC patients. This study evaluated the single-stage nasal reconstruction after BCC excision in the absence of a Mohs micrographic surgery-trained surgeon in the facility and considering patients' comforts in a one-stage approach including excision and reconstruction.

Objective

The location, shape and size defect, involved anatomical layers, and donor site availability are important factors in establishing proper surgical procedure.

Patients and Methods

This study retrospectively reviewed 129 patients between January 2016 and April 2019 after basal cell carcinoma excision. Age, sex, basal cell carcinoma location based on Menick's classification, pathologic types, reconstruction techniques, and recurrence rates were evaluated. Excisional biopsy was done on tumors <1 cm in diameter. Incisional biopsy was performed on patients with suspected lesions >1 cm in diameter to define tumor type. After confirmation, all patients underwent final excision with 5-mm margins. One-stage closure was then performed using primary closure, skin grafts, or local flaps. Tumors were classified into nodular, superficial, basosquamous, micronodular infiltration, and other variants (adenoid, cystic, and pigmented) according to the American Joint Committee on Cancer criteria. Tumor location is evaluated according to the anatomic subunits defined by Burget and Menick (i.e., dorsum, tip, sidewalls, and ala) Statistical analysis was performed using the Statistical Package for Social Sciences for Windows 26.0 (IBM Corporation, Armonk, NY, USA). The suitability of the univariate data for normal distribution was evaluated using the Shapiro-Wilk/Francia test. Group differences were analyzed using the Kruskal-Wallis H test with Monte Carlo simulation. The post hoc analysis of significant results was evaluated with Dunn's test for continuous data. Pearson chi-square exact test and Fisher-Freeman-Holton test with Monte Carlo simulation were used for categorical data. The column ratios were compared and expressed according to the Benjamini-Hochberg-corrected p value results. Quantitative values were expressed as mean standard deviation and median range (maximum-minimum). Categorical values were expressed as percent. P values <0.05 were considered as statistically significant.

Results

This study included 46 males and 83 females aged 31 to 94 (mean, 65.7 ± 13.1) years. The nodular type (n = 88, 68.2%) was the most common basal cell carcinoma subtype. The tumors were mostly in the dorsum of the nose (n = 41, 31.8%), sidewall (n = 37, 28.7%), nasal tip (n = 36, 27.9%), and ala (n = 15, 11.6%). All defects were closed by primary closure, skin grafts, or local flaps (Limberg, miter, glabellar, bilobed, nasolabial, V-Y advancement, superficial musculoaponeurotic system-pedicled skin island flap, and forehead flaps).

Bilobed flaps were used for defects between 7 and 20 mm and were significantly the first choice for nasal tip reconstruction compared with other methods. On the other hand, glabellar flaps were used for defects between 8 and 18 mm which were the preferred approach for defects in the proximal dorsum compared with other regions.



Limberg flaps were used for defects between 5 and 15 mm for reconstruction in the dorsum and nasal tip compared with other regions. Nasolabial flaps for defects between 8 and 33 mm were preferred for defects on the ala and sidewall. Primary closure was done for defects between 4 and 13 mm in the dorsum and sidewall. V-Y advancement flaps were used for defects between 7 and 15 mm on the ala and sidewall regions. Larger or combined defects were reconstructed with forehead flap (22–30 mm), SMAS-pedicled skin island flap (8–20 mm), and skin graft (15–30 mm). Only two patients needed alar rim grafts that were harvested from the nasal septum. The follow-up period varied from 6 months to 3 years (mean, 18 months). Only one patient had a recurrence following primary closure of the 10-mm defect on the sidewall. The secondary reconstruction used the V-Y advancement flap for a 15-mm defect.

Discussion: Recently, perforator flaps have been gaining popularity due to less donor site morbidity and more rotational ability. However, venous insufficiency at the early postoperative period is a major drawback. A risk for partial or total flap loss exists although leaving fat tissues around the pedicle is recommended to prevent this outcome. Local flaps are still advocated as the first choice when considering the nasal BCC patient population who presents with advanced age, cardiovascular comorbidities, and tobacco use. Using adjacent skin with similar color and texture in the final incision on the donor site which lays along the Langer's aesthetic lines secure patients from any displeased scar. (Figure 1)

The glabellar flap was the main approach for reconstruction of the <15-mm defects in the central subunit on the proximal one-third of the nose in addition to the medial canthal defects. Similar skin texture, thickness, and color of the glabellar region contribute to a good aesthetic outcome. Moreover, the vertical suture line of the donor site reflects a natural wrinkle (Figure 2).

The combined dorsonasal-miter flap was preferred for reconstructing the middle one-third of the central part of the nose for defects up to 18 mm overlying either the defining points of the tip (particularly patients with advanced ages) or just on the tip of the nose. The dorsonasal flap is supplied by the unilateral site alar branch of the facial artery. Thus, the back-cut incision can be extended below the medial canthus level in the glabellar region to provide a wider rotation arch13

The modified bilobed flap introduced by Zitelli was performed for defects up to 20 mm in the tip especially in the dome or beneath the lower lateral cartilages. The flap can be designed either laterally (on the sidewall to repair the defects near the nasal tip) and medially (on the dorsum to reconstruct the alar side defects). The major drawbacks of the bilobed flaps are having pin-cushioning or trap-door deformities during the healing process accompanied by scarring. However, subperiosteally and subperichondrially elevating both flap and adjacent tissue reduces tension in the operation field. Therefore, continuous scar beneath the flap and adjacent tissue may uniformly contract in the entire surgical field and avoid the pin-cushioning effect only on the flap (Figure 3).

Nasolabial and V-Y advancement flaps were preferred for distal lateral defects. The nasolabial and V-Y flaps were used to reconstruct defects close to the cheek and on the anterior alar rim respectively. Both approaches can keep the donor site scar on the nasolabial sulcus.

The skin of the nasolabial region provides an acceptable skin color match, thickness, and composition with robust reliable vasculature. Nasolabial flaps can be inferiorly or superiorly elevated based on interpolation flaps and the need for secondary operation in the pedicle division particularly in defects up to 3 cm. Debulking should also be considered during the second stage to again provide the shape of the slim alar rim. (Figure 4)

The V-Y advancement flap is supplied by the alar branch of the facial artery to provide proper reconstruction for the alar defects without deteriorating the alar rim. The literature presents different approaches for defects including cartilage excision. Some authors advocate that soft-tissue reconstruction without adding graft cartilage support is enough. However, this study believes that cartilage grafts provide rigidity to the alar rim and reduces the risk of lateral collapse during the inspiration. The nasal septum, costal cartilage, and conchal cartilage are possible places for harvest. Furthermore, the Limberg flap can be recruited for the lateral part of the nose with up to 15-mm defects.

The SMAS-pedicled skin island flap was previously described for the defects in the nasal tip, lateral nasal area, and perinasal region. The donor site was designed on the radix of the nose including the transversalis muscle, which is also a component of SMAS in the nasal region. The flap was elevated above the periosteum after bilateral ligation of the dorsonasal arteries and transferred to the defect of the subcutaneous pedicle. The donor site was primarily closed (Figure 5). Abundant vascular supply of external dorsal skin is provided by the lateral nasal, angular, dorsonasal, and columellar arteries. This flap is a reliable option for the <30-mm defects even if the dorsonasal arteries would ligate the robust blood supply from other suppliers.



12th

BAPRAS CONGRESS

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

The paramedian or total forehead flap is the best option for combined defects of the distal two-thirds of the nose or total nasal reconstruction involving the columella or vestibular lining. Moreover, defects >2.5 cm involving or overlapping several subunits or defects in the sidewall or dorsum of the nose can be reconstructed with forehead flap. The distal 1–2 cm part of the flap can be thinned in patients who are nonsmokers due to maintaining a thin skin coverage at the tip of the nose. The 1.5-cm pedicle base can be easily twisted from either side with high a rotation arch. The supratrochlear artery provides a robust blood supply for the entire flap and makes the flap a suitable bed for cartilage grafts or nasolabial turnover flaps.

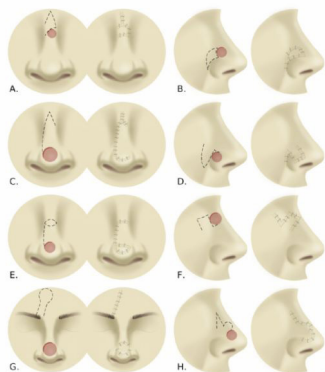
Particularly, quite larger defects can be reconstructed in the elderly with extended axial flaps due to increased skin laxity. Skin grafts were selected for elderly patients (81–93 years) with comorbidities who presented with huge defects (22–30 mm) who requested for one-staged reconstruction. (Figure 6) Another advantage of advanced age is increased skin laxity on the proximal and middle third of the nose, cheek, and nasolabial region. Therefore, not only primary closure for up to 15-mm defects was performed but also 3–5-mm extra rotation mobility ability was gained while using some local flaps. The growth pattern of the tumor, perineural involvement, and <1-mm close-excision margins are predispositions for recurrence. Furthermore, the nasal region demonstrates increased secondary BCCs compare with the other facial units. The main reason may be inadequate surgical excision due to aesthetic concerns. Only one patient in this study presented with recurrence in the 3-year follow-up period, which could be explained in several ways. First, excision margins were kept at 5 mm between each tumor even if a 3-mm surgical margin has been determined sufficient for a well-demarcated nodular BCC. The 4- and 6-mm margins have been recommended for tumors <2 and >2 cm, respectively. Second, tumors >2 cm in diameter illustrates a high risk of recurrence or metastases potential due to their destructive–disrupting behavior. These tumor sizes are prone to invade the subcutaneous fat tissue and overlying cartilage or bone. Only six cases presented with >20 mm diameter. The samples were obtained from the inner mucosa or perichondrium for the frozen section study to exclude the presence of cartilage or mucosa involvement intraoperatively if any hesitation about the tumor involvement to the deep margins happens during the surgery. Third, none of the specimens had been reported to be with a <1-mm tumor-free margin. Forth, the increased recurrence rate is also associated with infiltrative, morphoeic, and micronodular subtypes, which are not only prone to invade tissue overlies but also usually excised with unclear margins due to their undetermined macroscopic borders, as shown in Supplemental Table 4. Maintenance of nasal lining is another important aspect of proper anatomical and physiological reconstructions. An unlined nose leads to scar contracture or nasal septum perforation. Full-thickness skin grafts are reasonable options for small- to moderate-sized defects. For larger defects, nasolabial or forehead flap can be folded over to the nasal line or a septal mucoperichondrial flap can be used ipsilaterally or contralaterally

Conclusion

Tumor-free borders decrease recurrence. Using axial flaps for reconstruction not only allows acceptable scars within subunits but also provide a quick return to daily activities. Particularly, quite larger defects can be reconstructed in the elderly with extended axial flaps due to increased skin laxity.

Keywords: Basal cell carcinoma, local flaps, nose, soft tissue tumor, facial reconstruction

Figure 1



Summary of all flaps; A glabellar, B V-Y advancement, C miter, D nasolabial, E SMAS-pedicled skin island, F Limberg, G forehead, H bilobed.



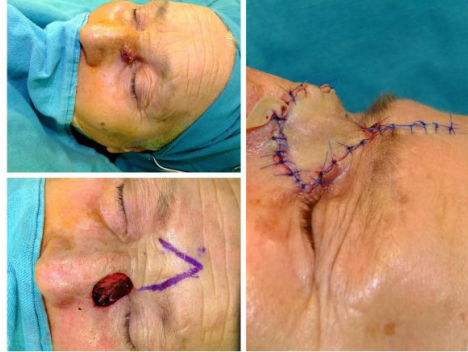
12th

BAPRAS CONGRESS
Selçuklu Convention Center Konya, TÜRKİYE



2023
13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org

Figure 2



*a Nodular BCC close to the medial canthus,
b defect and design of the flap, c final defect closure.*

Figure 3



a Superficial BCC on the nasal tip, b bilobed flap harvested with underlying perichondrium-periosteum to prevent pin-cushing effect, c final defect closure.

The relationship between size of the defect and preferred approach

Procedure	Number of Patients	Diameter of Lesions (Median)	Diameter of Lesions (Minimum)	Diameter of Lesions (Maximum)
Bilobed flap	27	10mm	7mm	20mm
Primary closure	22	7mm	4mm	13mm
Miter flap	21	15mm	10mm	18mm
VY advancement flap	16	10mm	7mm	15mm
Nasolabial flap	11	15mm	8mm	33mm
Limberg flap	11	10mm	5mm	15mm
SMAS pedicled skin island flap	7	15mm	8mm	20mm
Skin graft	7	22mm	25mm	30mm
Glabellar flap	5	17mm	8mm	18mm
Forehead flap	2	26mm	22mm	30mm



OP-031

Determining Factors for Exenteration in Periorbital Skin Cancers

Mustafa Akyurek, Gunes Hafiz

Çanakkale Onsekiz Mart University, Plastic Reconstructive and Aesthetic Surgery, Çanakkale / Türkiye

This retrospective study investigates patient outcomes following exenteration for periorbital skin cancers, in an effort to inform more precise decision-making regarding this aesthetically impactful procedure. The study included nine patients treated exclusively at the Çanakkale Onsekiz Mart University Plastic, Reconstructive and Aesthetic Surgery Clinic between 2015 and 2023, with seven qualifying for detailed analysis. The research findings underline the potential negative consequences of attempts at globe-preservation, which can inadvertently lead to heightened patient distress and delays in crucial adjuvant therapies. Furthermore, the necessity for immediate and strategic reconstruction post-excision demands careful consideration of available tissues. The study demonstrates the efficacy of chimeric Anterolateral Thigh (ALT) perforator flaps in managing three-dimensional defects following bone-invaded tumor removal. A critical insight revealed by the study is the potential inadequacy of conjunctival reserve during lamellar reconstruction, resulting in significant complications such as keratitis, chronic pain, and corneal fibrosis. Clear patient communication, understanding of these complexities, and further research are advocated to improve patient outcomes in periorbital skin cancer management.

Keywords: skin cancers, orbital invasions, exenteration, free flap, perforator flap

Table 1

Patient no	Age\Sex	Flap Selection	Exenteration Cause	Time for Adjuvant Therapy
N-1	48\ f	ALT	MM	4 week
N-2	64\ m	RF	BCC	3 week
N-3	51\ m	ALT	SCC	4 week
N-4	78\ m	ALT	SCC	3 week
N-5	46\ m	RF	Chronic Pain	20 week
N-6	54\ m	ALT	Keratitis	10 week
N-7	62\ m	ALT	Keratitis	16 week

N-5, N-6 and N-7 are patients who have undergone to second surgery



OP-032

Clinical Experiences During Application of Maggot Therapy

Percin Karakol, Yasin Canbaz, Ali Can Aydın, Kurtulus Oz, Berkan Sanli

Plastic, Reconstructive and Aesthetic Surgery, Basaksehir Cam and Sakura City Hospital, Health Science University, Istanbul / Türkiye

Introduction

Maggot therapy or larval therapy is a type of biotherapy that involves the application of live and healthy larvae to skin and soft tissue wounds with the aim of cleaning necrotic tissue present in the wound.

The most commonly used flies for larval therapy belong to the family Calliphoridae. The most widely used species is *Lucilia sericata*, commonly known as the green bottle fly. Studies have shown the presence of *Proteus mirabilis* in the larval gut flora of this species. The four main effects of larvae can be listed as biological debridement, wound disinfection, stimulation of healing, and prevention and eradication of biofilm formation.

In this study, the effectiveness of larval therapy on patient complaints and wound tissue in healing chronic wounds was investigated.

Materials-Methods

In this study, 13 cases with diabetic foot ulcers and sacral decubitus ulcers who applied to our clinic between January 2023 and July 2023 and received maggot therapy were retrospectively evaluated at the Health Sciences University Basaksehir Cam and Sakura City Hospital. The wound beds of the cases were assessed.

Results

This retrospective study included 13 cases. The average ages were determined as 57.6 for females and 62.4 for males. The most common symptom observed was a draining and malodorous wound (90%). Eight cases (61.5%) had diabetic ulcers on the lower extremities, and five cases (38.5%) had sacral decubitus ulcers. After a minimum of 3 sessions of maggot therapy, the wound beds were observed to be richer in granulation tissue and with reduced drainage compared to before maggot therapy. The mean age of patients diagnosed with diabetic ulcers was 59.8, while it was 62.7 for patients diagnosed with sacral decubitus ulcers.

Discussion

In this clinical study, after 3 sessions of maggot therapy before the operation, it was observed that an appropriate area for biological debridement and optimal granulation tissue was achieved in our cases. Thus, repair was performed with suitable skin grafts for cases requiring surgical indications. In general, similar and favorable outcomes were obtained in patient results compared to previous studies. For cases with high-risk malignant comorbidities where surgery plans could not be made, maggot therapy provided suitable area cleaning and infection control. The wound tissues were left for secondary healing. In this study, the negative aspects of this treatment modality were also addressed; complaints such as disgust and irritation towards the applied larvae were observed in 60% of our cases. This result is consistent with previous studies in the literature. Additionally, the distinct odor of these larvae can be considered as a factor contributing to this irritation. The limited number of cases and the subjective evaluation of wound healing were considered weak points of the study.

Conclusion

Non-healing wounds such as diabetic ulcers and sacral decubitus ulcers not only deteriorate the quality of life for patients but also lead to serious problems if appropriate treatment is not received. Maggot therapy, when applied non-invasively in the early stages, was observed to clean necrotic tissue in the area and stimulate granulation tissue formation. In later stages of the disease, it was shown to debride the necrotic tissues and prepare the area for surgery. Maggot therapy was used as an alternative method to surgical debridement. To highlight the positive aspects of maggot therapy, it provides minimal pain or even painless application, as the larvae directly distinguish necrotic and viable tissues, there is no need for surgical boundary-setting, no need for an operating room for debridement, and local growth factors are secreted, leading to faster wound healing.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

The negative aspects of maggot therapy include patients discontinuing treatment, disgust towards applied larvae, feeling larvae bites, and contamination. In conclusion, this study demonstrated that maggot therapy could be effectively used together with and as an alternative.

References

- 1- Iain S Whitaker, Christopher Twine et al. Larval therapy from antiquity to the present day: mechanisms of action, clinical applications and future potential Postgrad Med J 2007 83: 409-413
- 2- Wound Repair and Regen Review
- 3- Jose Moya Lopez Advantages of Maggot Debridement Therapy for Chronic Wounds: A Bibliographic Review Skin Wound Care 2020 Oct;33(10):515-525
- 4- Arif Turkmen, Ken Graham Therapeutic applications of the larvae for wound debridement Journal of Plastic, Reconstructive & Aesthetic Surgery (2010) 63, 184e18
- 5- Ronald A. Sherman, 2014 BioTherapeutics, Education & Research Foundation, Mechanisms of Maggot-Induced Wound Healing: What Do We Know, and Where Do We Go from Here? March, 2014

Keywords: Maggot, diabetic ulcer, pressure wound, biological treatment, debridement



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE

2023

13 September
Pre Congress Course
14 - 16 September
Congress



OP-033

An Alternative Approach For Reconstruction of Scrotal Defects Due to Fournier's Gangrene: Use of Bilateral Trapezoid-Like Scrotal Flaps

Yusuf Alper Aytac, Mustafa Canberk Gürbüz, Emrah Kağan Yaşar, Murat Şahin Alagöz

Department of Plastic, Reconstructive and Aesthetic Surgery, Kocaeli University Faculty of Medicine, Kocaeli / Türkiye

Introduction

Perineal reconstruction is a surgical procedure that aims to restore the structure and function of the perineum. The perineum is a complex region of the body that contains many vital structures, including the urethra, anus, and genitals. Any significant damage to this area can have physical and psychological consequences for the patient.

Several techniques for perineal reconstruction in males are available, depending on the extent and location of the injury or defect. Perineal reconstruction in males can be challenging due to the complex anatomy of the area and the potential for complications such as infection, hemostatic complications such as hematoma, and wound dehiscence. Patients undergoing perineal reconstruction should be carefully selected and thoroughly evaluated to ensure the best possible outcome.

Material and Methods

In this study, we present our cases which underwent perineal reconstruction between the years 2020-2023, by using bilateral scrotal flaps.

All of the defects were secondary to the debridement of Fournier's gangrene. There were 7 patients between the ages of 35-57. All the patients have defects involving between 50-60% of scrotal surface. All of the defects were reconstructed by using two scrotal flaps that are based on the anterior and posterior scrotal artery perforators.

Results

The management of aforementioned soft tissue defects following Fournier's gangrene typically necessitated the implementation of wound optimization techniques prior to tissue coverage. The mean duration of hospitalization subsequent to the reconstruction surgery amounted to 5 days, with a range of 3 to 8 days. Encouragingly, all flaps used for tissue coverage were successful. Among the observed complications, dehiscence was identified as the most prevalent, occurring in 3 patients. However, all complications were effectively managed through wound care and scar revisions performed under local anesthesia. Notably, no complications were reported concerning the donor sites.

Discussion

Reconstructing the scrotum can be complex due to the desire for aesthetically pleasing results and testicular functionality, as well as difficulty with skin closure. There are various options for reconstruction, ranging from simple skin grafts to more complicated musculocutaneous and perforator flaps.

The choice of surgical technique to reconstruct the scrotal area depends on various factors such as the size and location of the defect, age of the patient, existing health conditions, and the surgeon's preference. All of our cases were performed for the reconstruction of scrotal defects that occurred after repeated extensive debridements due to Fournier's gangrene, by the urology and general surgery teams. In all cases where sufficient intact scrotal tissue remained superiorly and inferiorly, a trapezoid-like flap was used. Due to its short operating time and low donor site complication rate, the trapezoid-like flap is preferred as one of the top options among many reconstruction options in our clinical practice.



Conclusion

This approach allows for straightforward harvesting, ensuring a good match of tissue. Furthermore the use of flaps is constrained within the perineal region and does not extend beyond the inguinal crease or abdominal area.

But it may only be useful for a very particular group of patients whose defects involve bilateral scrotal area but not more than 60% of total scrotal surface. Therefore, this approach seem to represent a valuable asset for patients with proper defects.

Keywords: Fournier's, Perineal, Scrotal, Defect, Flaps

Figure 1.



Scrotal defect due to Fournier's gangrene.

Figure 2.



Postoperative view.



OP-034

How Can We Improve Cost-Effectiveness of Vacuum Assisted Therapy for Problematic Wounds

Katya Ilinova Kalinova¹, Ivaylo Mourdjiev¹, Nedzhat Ali¹, Petar Uchikov¹, Stoyan Bogoev², Hristo Stoev², Konstantin Dimitrov², Zaprin Vazhev²

¹1. Chair of Special Surgery, Medical Faculty, Medical University, Plovdiv, Bulgaria

²2. Chair of Cardiac and Vascular Surgery, Medical Faculty, Medical University, Plovdiv, Bulgaria

Introduction

The beneficial effect of vacuum assisted (VAC) therapy on difficult wounds of various origin is a matter of fact. It is based on the improvement of local circulation, acceleration of cellular and humoral influx, as well as drainage, thus resulting in stimulation of granulation process and reduction of local bioburden. The introduction of portable devices allows outpatient usage, largely facilitates wound management and improves patient's quality of life during the more or less long treatment course. A major draw-back, especially in low and medium income countries, is the considerable price of the treatment course, often overwhelming for most of the patients in need and/or for the tight hospital or health care budget.

Objective

To compare the cost-effectiveness of VAC therapy applied via a central aspiration system and by a portable device for management of difficult wounds.

Material and Method

The study was carried out within a research project financed by Plovdiv Medical University. Both acute and chronic lesions were treated: varicose and diabetic ulcers, complex post-traumatic defects, postoperative wound dehiscences, and also ones resulting from acute vascular ischemia. A total of 68 patients were enrolled in the survey - 23 females and 45 males aged from 47 to 76 years. VAC therapy was applied through a central aspiration system (wall suction) for 36 patients, via a portable device for 32 subjects, and the two methods were combined for 30 patients.

Results

While there was no difference in the mean duration of VAC therapy among the different modalities, a 3 to 5 fold reduction in the overall cost of treatment was achieved by implementation of wall suction as compared to a portable aspiration pump. The combination of the two methodologies reduces the price of the treatment course by 10% only.

Conclusion

The major advantage of wall suction VAC therapy is the stable pressure supply and the possibility to fit the set with a large variety of commercial and non-commercial dressings which reduces substantially the overall cost of treatment thus making it more affordable. However it requires hospital accommodation. Portable devices do not limit the mobility of the patient, offer various operating modes and allow use in outpatient and domestic environment at the cost of a several fold price increase. Combining the two modalities has limited effect on the total treatment cost.

Keywords: VAC therapy, difficult wounds, wall suction, portable device, cost effectiveness



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-035

Choosing The Method of Reconstruction of Fasciotomy Defects in Patients Affected by Earthquake

Ömer Faruk Yıkılmaz, Hasan Murat Ergani, Burak Yaşar, Ramazan Erkin Ünlü

Ankara Bilkent City Hospital Plastic, Reconstructive and Aesthetic Surgery, Ankara / Türkiye

Introduction and Aim

Türkiye shook with two main and many accompanying smaller earthquakes reaching up to 7.7 on a Richter scale on 6th of February 2023. According to official numbers more than 50.000 people died and over 120.000 people got injured. It is estimated that Kahramanmaraş earthquakes affected as much as 14 million people. As in most hospitals and specialties in Türkiye at that time, our clinic shouldered its fair share of patients requiring both emergency fasciotomies due to compartment syndrome in extremities as well as minor and major replantation in addition to reconstruction of various defects all over the body. Different patients required different fasciotomy procedures as in both location and timing. Some of those we were able to reconstruct quickly, some required more complicated methods following the reconstruction ladder. Unfortunately, but as expected, some open wounds got infected during the process and required completely unique approaches compared to standard wound care. Our aim is to share our experiences in managing the fasciotomy defects of the patients affected by compression syndrome due to being stuck under a building in an earthquake, so that in future should similar events occurred fastest, and best methods could be chosen for optimal reconstruction with minimal complications.

Material and Methods

We retrospectively collected information about all the patients we were consulted about after the earthquake. Of those patients, non-earthquake related ones were removed. In the remaining group we collected all the patients with fasciotomy defects. We separated the final group into smaller ones according to the methods chosen in reconstruction such as primary closure, skin grafts, vacuum assisted closure, local and regional flaps as well as free flaps.

Results

Overall, 92 fasciotomies were performed under general anesthesia. 4 patients died with complications related to crush syndrome. We used only 1 local flap to cover the defect. 14 patients required only primary closure. Bigger defects with no neurovascular or bone exposure were reconstructed with split thickness skin grafts in 64 patients. 3 major extremities were unfortunately had to be amputated. 9 patients with bone exposures required free flaps to reconstruct.

Discussion and Conclusion

Patients affected by earthquakes mostly present with crush syndrome, compartment syndrome in extremities and other symptoms thus managing them requires joint efforts of many specialties. Unconscious patients in ICU units could require fasciotomies as well as a patient admitted to a plastic surgery clinic could develop acute renal failure and need dialysis. Thus, correctly and quickly recognizing and managing compartment syndrome is our first and foremost priority as plastic surgeons. Should fasciotomy be decided and then performed, single or multiple, small or large, clean or infected defects could present themselves. Some of those defects could be reconstructed quickly after properly managing the compartment syndrome with usual methods, some of those defects may require multiple debridement and longer wound care. The more time a defect remains, the higher its chance of getting infected gets. Thus, it is very important to act according to the needs of the specific patient while considering all the complications.

Although it is very important to reconstruct a defect, it may not be possible as some patients present with longer times stuck under rubble, their muscles may not survive the process even after proper and quick debridement. Wounds could get infected and therefore could require more debridement before final closure. Vacuum assisted closure could help us keep the infection away, but it is not always possible to use VAC devices as neurovascular structures are exposed.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 15 September
Congress

www.balkanplasticsurgery.org

According to our experience, standard ladder of reconstruction should be followed managing these patients. Primary closure is obviously the best choice, but it may not always be possible especially if the fasciotomy was performed later than optimal time. Should that fail, full thickness or split thickness skin grafts could be used depending on the size of the defect. Local flaps are always available as the next step, although wide injury of the neighboring tissues may not give permission to use this choice.

Free flaps are the ultimate step in reconstruction of the fasciotomy defects. Serial debridement of the widely injured or infected tissues sometimes requires the use of free flaps as neurovascular structures or bones and tendons could get exposed. But it should not be forgotten that most of these patients spent time under rubble and receiving vascular structures were found to be mostly damaged, even after following them proximally. Imaging should be acquired to view the viability of the vascular structures, but it should be noted that one may need to go more proximally to reach a healthy receiving vessel, thus requiring longer pedicles on their free flaps.

All in all, our experiences show that swift and sufficiently followed fasciotomies in earthquake patients should be reconstructed as swiftly whenever possible following the reconstruction ladder, while managing the possible complications with the help of other specialties.

Keywords: fasciotomy, earthquake, reconstruction, free flaps, vacuum assisted closure, skin grafts, infection

After Vac Treatment



Free ALT FLap



Pediculed alt





OP-036

Breast Reconstruction for Patients with Poland Syndrome

Alper Taşan, Kamuran Zeynep Sevim, Aysin Yeşilada, Sabri Öztürk, Büşra Güçlü, Murat Doğuş Çerikan

S.B.U Şişli Hamidiye Etfal Research and Training Hospital, Plastic Reconstructive and Aesthetic Surgery, İstanbul / Türkiye

Introduction

Breast anomalies can be classified as congenital, acquired and developmental. Poland syndrome is seen sporadically. It is a congenital disease in which congenital malformation of the anterior chest wall is accompanied by ipsilateral upper extremity deformity. Aplasia of the sternocostal part of the pectoralis major muscle; upper extremity pathologies such as syndactyly, synbrachydactyly; thoracic deformities such as rib hypoplasia; areola and mammary gland deformities are components of the syndrome. It is seen with a frequency of 1 in 30,000; male to female ratio: 3/1. It is more common in the right body half. It is caused by hypoplasia of the ipsilateral subclavian artery.

Material and Method

In this study, 18 patients with Poland Syndrome who were operated in our clinic between 2010-2022 were analyzed. Patients were evaluated in terms of functional and aesthetic results, fat graft retention, and patient satisfaction. Methods were compared in terms of hematoma, seroma, infection, flap necrosis, capsular contracture and hypertrophic scar tissue formation in the postoperative period. The mean follow-up period of the patients was 22 months. Fournier classification was used in the grading of the patients. CT and MR methods were used for imaging.

Result

In 10 patients operated by us, prosthesis was placed after tissue expander. In addition to the Latissimus Dorsi flap, repair was performed with tissue expander and implants in 6 patients. In 2 patients we used only "lipofilling". One patient had bilateral Poland Syndrome. We have had positive results from the phased fat graft applications (average 300 cc), enlargement or reduction operations of other breast, and fat graft applications to the infraclavicular space that we used for symmetry.

Case 1

We applied approximately 100 cc fat graft in 2 sessions to a 17-year-old male patient with the diagnosis of right-sided Poland syndrome. We achieved aesthetically satisfactory results. (Fig. 1)

Case 2

A 36-year-old female patient had left-sided Poland's syndrome. The patient's left breast was reconstructed with latissimus dorsi flap and an additional implants. Mastopexy was performed on the right breast. Because the left breast NAC was located superiorly and caused an asymmetrical appearance, it was taken as a graft in the next session and adapted to its new location in the inferior. (Fig. 2)

Case 3

A 21-year-old case of mild left-sided Poland's syndrome had a depressed scar of approximately 2 cm due to biopsy from the upper outer quadrant of the left breast 2 years ago. A 400cc round tissue expander was placed under the hypoplastic gland. Scar revision was performed on the depressed scar line in the upper outer quadrant. After the enlargement reached 420 cc and waited for 1 month, the tissue expander was removed and anatomical breast implant was applied. In addition the depressed area in the left anterior axillary region was repaired with fat injection to during the application of the anatomical breast implant. We planned augmentation with adipose tissue to the right breast due to patient's request. Periareolar mastopexy to the right breast and sternal, axillary fat transfer to the left breast was performed. (Fig. 3)



Case 4

Patient was a 18-year-old female with right-sided class 2 Poland syndrome. Pectoral muscle was absent, the mammary gland was severely hypoplastic. A 450cc siltex long-height breast- shaped tissue expander was placed on the right breast. Liposuction was applied to the left breast and fat injection was applied to the axillary region. A patient specific breast prosthesis was designed but could not be obtained and the anatomical CPG long and high projection 395cc breast implant was applied.

Conclusion

In Poland syndrome cases, reconstruction options should be evaluated as a result of comprehensive analyzes in terms of thoracic deformities, pectoral muscle status, NAC location and symmetry with the contralateral breast. Bone graft can be used in large bone defects of the thorax. In the absence of pectoral muscle, apart from the latissimus dorsi muscle flap we used, the gracilis muscle is among the options that can be used. In the partial absence of the pectoralis muscle, muscle flap or soft tissue augmentation options can be evaluated depending on the axillary fold status. We achieved positive functional and aesthetic results by using expander, implant, latissimus dorsi flap and fat graft applications in the cases we operated. We did not encounter flap necrosis and capsular contracture that required revision.

References

- 1- Derder M, Whitaker IS, Boudana D, Marchac A, Hivelin M, Mattar N, Lepage C, Claude O, Benjoar MD, Bosc R, Lantieri L. The use of lipofilling to treat congenital hypoplastic breast anomalies: preliminary experiences. *Ann Plast Surg.* 2014 Oct;73(4):371-7. doi: 10.1097/SAP.0b013e31827fb3b7. PMID: 23759965.
- 2- Masia J, Pons G, Loschi P, Sanchez Porro-Gil L, Nardulli ML, Olivares L. Autologous reconstruction of a complex form of Poland syndrome using 2 abdominal perforator free flaps. *Ann Plast Surg.* 2015 May;74(5):580-3. doi: 10.1097/SAP.0b013e31829a39b1. PMID: 24322640.
- 3- Rodriguez IE, Heare T, Bruny J, Deleyiannis FW. Customized Titanium Implant for Chest Wall Reconstruction in Complex Poland Syndrome. *Plast Reconstr Surg Glob Open.* 2014 Feb;2(2):e112. doi: 10.1097/GOX.0000000000000047. Epub 2014 Mar 6. PMID: 25243105; PMCID: PMC4162340.
- 4- Shash H, Al-Halabi B, Aldekhayel S, Dionisopoulos T. Laparoscopic Harvesting of Omental Flaps for Breast Reconstruction-A Review of the Literature and Outcome Analysis. *Plast Surg (Oakv).* 2018 May;26(2):126-133. doi: 10.1177/2292550317731762. Epub 2017 Dec 18. PMID: 29845051; PMCID: PMC5967163.
- 5- Riberio RC, Saltz R, Mangles GM, Koch H. Clinical and Radiographic Poland Syndrome Classification: A Proposal. *Aesthet Surg J.* 29: 494-504.

Keywords: Poland syndrome, Breast, Breast reconstruction, Congenital, Latissimus Dorsi flap

Figure 1



Figure 2



Figure 3





12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-037

Dermal Scoring and Multiple Suture Lift in Central Pedicled Breast Reduction and Mastopexy

Ertuğrul Karanfil¹, Emre Güvercin², Berkalp Berker¹

¹University of Abant İzzet Baysal, School of Medicine, Department of Plastic, Reconstructive and Aesthetic Surgery, Bolu / Türkiye

²University of Maltepe, School of Medicine, Department of Plastic, Reconstructive and Aesthetic Surgery, İstanbul / Türkiye

Introduction

Plastic surgeons have been faced with bringing back the youthful appearance of the aging, ptotic breast for many years. The main goal of traditional reduction and mastopexy procedures is to elevate the gland to its native position on the chest wall by tightening the skin envelope through skin excision and minimum parenchymal dissection. Especially in patients with massive weight loss, the paranchyme and dermis has the greatest challenge of all and results are usually short standing. The aim of this technique is to shape and lift the breast parenchyme, forcing the borders of a long last standing result with minimum complication and morbidity.

Materials and Methods

68 patients were included in the study. All patients were operated under general anesthesia and central pedicled breast reduction/ mastopexy technique with inverted T scar technique was performed. After deepithelialization, parenchyma dissection and resection; dermal scoring was performed to inferior border of the pedicle with electrocautery in every 3 cm's with 2-3 cm length. Multiple dermal suturing was done with 2/0 polydioxanone sutures passing from the pectorals muscle.

Results

Patients selected between the age of 18 to 65. Most of the patients undergone mastopexy (no:49). The average tissue resection was 130 gr (range from 0 to 410 gr). The duration of the surgeries varied from 2:00 hour to 3:30 hour. Six patients were patients with massive weight loss and they undergone upper body lift including arm lift, J torsoplasty and mastopexy together in combined fashion. Seven patients had undergone mommy maker procedure including mastopexy/ reduction with liposuction and abdominoplasty. Hemovac drains were used for 1 day. None of the patients had major complications including infection, hematomas and nipple-areola complex necrosis. Three patients had minimal dehiscence in T scar and healed with secondary wound care. Two patients had hypertrophic scars treated with triamcinolone injections and silicone creams. Two patients had fat necrosis under incision area. All patients were satisfied about the aesthetic outcomes. The durability of the breast tissues were stable after 1 year with minimal bottoming out.

Conclusion

The central pedicle breast reduction/ mastopexy technique involves keeping the nipple-areola complex (NAC) attached to the breast tissue through a central stalk or pedicle, which preserves its blood supply and nerve connections.

Some advantages of the central pedicle technique include: Safe blood supply: By preserving the central pedicle, the blood vessels that supply the nipple-areola complex remain intact. This reduces the risk of ischemia (lack of blood flow) to the NAC during and after the surgery. The central pedicle technique helps maintain nerve connections to the nipple, which can help preserve nipple sensation. This is important for the patient's overall satisfaction with the surgery and their postoperative experience.

Keeping the central pedicle ensures that the milk ducts and blood supply to the nipple-areola complex are preserved. This can increase the likelihood of the patient being able to breastfeed in the future, if they desire to do so.

The most important advantage of the technique is that the surgeon can shape the breast paranchyme better than other techniques; more attachment points create more scar tissue all around the parenchyma thus enables breast parenchyma to stay more durable long term. Also with scoring the tails of the paranchmye can reach to upper positions in chest wall and can create rounder shape.

Keywords: mastopexy, central pedicle, breast reduction, modified technique, dermal flap



OP-038

Surgical Procedure and Schedule for Patients with Latissimus Dorsi Muscle-Skin Flaps and Breast Reconstruction with Implants: Is It the Immediate Period? Is it the Late Period?

Çağrı Berk Arıkan, Sergen Karataş, Gökçe Yıldırım, Mustafa Sütçü, Osman Akdağ, Zekeriya Tosun
Selçuk Üniversitesi Tıp Fakültesi, Plastik Rekonstrüktif ve Estetik Cerrahi Ana Bilim Dalı, Konya / Türkiye

Introduction

Breast cancer is one of the most common cancers in women in the world. Almost half of patients with breast cancer require mastectomy as a therapeutic cancer procedure. Improving quality of life through breast reconstruction after mastectomy is very important in terms of psychosocial health. The main purpose of breast reconstruction is to restore volume, shape and symmetry of the breast. In most cases where a mastectomy performed, autologous tissue must be matched to the chest wall. The latissimus dorsi muscle-skin flap (LDKD) is one of the flaps that meet this requirement. The LDKD flap, located on the lateral and posterior chest wall, is secure in circulation, has a wide arc of rotation, and has a low complication rate. LDKD is often preferred today.

Self-assessment tests evaluate the patient's quality of life and the surgical process. They allow a better understanding of the interaction of patients and physicians in the treatment process.

The aim of this study is to evaluate the treatment process of patients after breast reconstruction with latissimus dorsi muscle skin flap and implant and to compare the psychosocial differences between immediate and late breast reconstruction.

Materials and Methods

Between 2019 and 2021, 17 patients underwent breast reconstruction with latissimus dorsi muscle skin flap and implant. The mean age was 44 years (36-56). A latissimus dorsi dissection with a transverse incision was performed after a modified radical mastectomy. The donor area was repaired primarily in all patients. Drainage was placed under the flap, in the axillary region, and in the donor area. Immediate reconstruction was performed in 11 patients and late reconstruction in 6 patients. The mean follow-up time was 12 months (3-15). Patients were interviewed about the breast Q test and photographs using a Likert scale. Results were analysed using Pearson's chi-square test.

Results

No hematomas, seromas, haemorrhages, infections, or flap necrosis were observed. Capsular contracture was not observed. Patients were divided into 2 groups: immediate and late reconstruction. No difference was observed in complications between the two groups. In both groups, the satisfaction questions were answered positively by the physicians, service personnel, and nurses.

No difference was noted in the "satisfaction with breast" scale in terms of aesthetics among patients who underwent immediate reconstruction. There was no difference between the "Aesthetic Likert Scale" and "Satisfaction with Breast" in the physicians and the patients. Pain in breast tissue, donor area, and surgical area: Although arm pain was slightly more severe higher in the patients who underwent late reconstruction, no significant difference was found. The breasts of patients who underwent immediate reconstruction were perceived as natural. The responses were positive in terms of recommending the surgery to other patients. Compared to the patients who underwent late reconstruction, there were negative responses regarding wearing clothes and the healing process.

In patients who underwent late reconstruction, no difference was found on the satisfaction with breast scale in terms of aesthetics. The breast shape was perceived as natural. It was evaluated that the surgical process went as planned for the patients. Responses to recommending the procedure to other patients were positive. Regarding recovery time, patients were more satisfied with immediate reconstruction, and there was a statistically significant association. (sig.=0.000 < p-value=0.05). Difficulty wearing clothing led to significantly better results in patients with immediate reconstruction. (sig.=0.000 < p-value=0.05).



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Discussion

Various methods have been described for breast reconstruction. Many factors such as size, shape and naturalness of the breast play a role in breast reconstruction. It is very important that the physician and the patient decide together in determining these factors. When the latissimus muscle-skin flap is used together with an implant, it is an extremely safe surgical technique used by both patients and physicians in terms of breast satisfaction.

When immediate reconstruction is considered in patients in whom radiotherapy is planned, autologous reconstruction options should be considered. It has been observed that patients who receive radiotherapy, use autologous tissue, and undergo immediate reconstruction have similar outcomes and complication rates compared with late reconstruction.

In their study, Metcalfe et al. found that immediate and late reconstructions did not differ aesthetically. In this study, it was found that there was no aesthetic difference between patients with immediate and late reconstruction. Furthermore this study supports the conclusion that the recovery process was better in patients with immediate reconstruction compared with those with late reconstruction. In addition, it was found that patients who underwent late reconstruction had difficulty concealing their bodies and wearing clothing. In this study, it was found that patients who underwent immediate reconstruction felt better socially and in terms of wearing clothes.

As the study by Al Ghazal et al, this study also found that self-esteem and satisfaction were significantly higher in patients who underwent immediate reconstruction. Also in this study, it was found that the level of depression was lower in patients who underwent immediate reconstruction.

In parallel to this study, the study by Dean et al. Found that female patients who underwent immediate reconstruction had better body image, higher self-esteem, and higher satisfaction.

Conclusion

In conclusion, this study found that the results of immediate breast reconstruction were better and the patients were psychosocially relieved. Therefore, the timing of breast reconstruction should be chosen as soon as possible.

Keywords: Breast, reconstruction, cancer, flap, latissimus dorsi



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-039

Breast Reduction After Breast Conserving Surgery and Radiotherapy: Avoiding Complications

Erol Kozanoğlu

Department of Plastic Reconstructive and Aesthetic Surgery, İstanbul Faculty of Medicine, İstanbul University, İstanbul / Türkiye

Introduction and Aim

Breast conserving therapy is one of the mainstays of breast cancer therapy and it requires the resection of the tumor with intact margins in isolated breast cancer. After the removal of the tumor, the remaining breast tissue is preserved with partially preserved breast sensation and with a higher quality of life.

With the increased survival after breast conserving therapy and adjuvant radiotherapy, patients may have breast ptosis and macromastia in their future lives and these patients may be referred to Plastic Reconstructive and Aesthetic Surgery Clinics for reduction mammoplasty. Thus, the excessive skin and breast parenchyma should be excised and the ptotic nipple and areolar complex should be elevated in a previously irradiated setting that is prone to various complications.

The aim of this study was to assess the results of the reduction mammoplasty of patients who had previous breast conserving surgery and adjuvant radiotherapy. Also, the techniques that were performed in order to avoid the complications were evaluated.

Materials and Methods

The patients who had previous breast conserving surgery and adjuvant radiotherapy and who underwent reduction mammoplasty between January 2021 and January 2023 were included in this study.

All patients were informed about both the surgical procedures and the study and informed consent was obtained from all patients. The study was consulted to the local ethics committee and no ethical approval was required due to the retrospective design.

The operative technique consisted of a skin reduction pattern (Wise or vertical) and different pedicle patterns according to the localization of the previous tumor resection. All patients were operated by the same surgeon. The electronic health records (the operation notes, the progress notes and the follow-up visits) and the preoperative and postoperative photographs of the patients were evaluated.

Results

Five female patients were included in the study and the mean age of the patients were 49 years(42 – 59). The mean time period between the final adjuvant radiotherapy and reduction mammoplasty was 3 years(2 – 5). The mean followup period of the patients was 15 months(3 – 27 months).

The left breast was irradiated in three patients whereas the right breast was irradiated in two patients. The primary tumor was at the infero-medial quadrant in three patients whereas it was at the superolateral quadrant in two patients. Invasive ductal carcinoma and invasive lobular carcinoma were detected in three and two patients respectively.

The Wise skin reduction pattern was preferred in four patients whereas the vertical pattern was preferred in one patient. The superior pedicle, the superomedial pedicle and the inferior pedicle were performed in 2, 1 and 2 patients respectively.

Two patients healed unevenfully. One patient complained of unsatisfactory aesthetic result. One patient had prolonged serous drainage that continued for 27 days postoperatively; in fact, wound healing was delayed at the “T area” of the Wise pattern. This patient was managed with daily wound dressings and total epithelization was maintained at the third postoperative week. One patient had skin necrosis at the vertical limb of the Wise pattern and this patient was managed with debridement and resuturation at the third postoperative week (Figure 1).



12th

BAPRAS CONGRESS 2023
Selçuklu Convention Center Konya, TÜRKİYE



13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org

Discussion and Conclusion

Radiotherapy causes radiation injury at the healthy tissues and this effect may be seen at the fourth to twelfth month after the treatment. The radiation injury is progressive and its effects may be seen years after the end of the therapy. The radiation induced acute injury diminishes at the eighteenth month after the treatment and the breast reduction surgery may be postponed until this period.

The breast conserving surgery and adjuvant radiotherapy may cause severe deformity and fat necrosis at the breasts. The patients may face asymmetries at the nipple and areolar complexes in unilateral treatments. In fact, such patients with enlarged and pendulated breasts may require the reduction of the excessive skin and the glandular tissue, enabling similarity between the breasts.

Some complications may be seen after the reduction of irradiated breasts. Infection, skin flap necrosis, detachment, nipple and areolar complex necrosis, persistent edema and increased breast asymmetry are among the most common complications. Skin flap necrosis, detachment, persistent edema and breast asymmetry were seen in this study.

The patient selection process and their education are the most significant initial steps in the reduction of irradiated breasts. In fact, these steps should be more different than the standard breast reduction surgery. Smoking should be quit at least one month before the breast reduction surgery.

During the preoperative planning, the nipple and areolar complex should be positioned 1 to 2 centimeters below the projection of the inframammary fold; thus, it should be placed more caudally at the irradiated breast. The keyhole pattern of the nipple and areolar complex should be designed larger at the irradiated breast and its circumference should be approximately 40 millimeters, resembling the dome of a mosque. The skin reduction should be more conservative at the irradiated breast. The scars of the previous cancer surgeries should be marked preoperatively and the skin and pedicle patterns should be preferred accordingly.

The base of the pedicle should be wider and its length should be shorter at the irradiated breast. If the width/length ratio decreases, the vascular supply of the nipple and areolar complex may be compromised. The free nipple graft technique may be preferred in these patients. As a main principle, the pedicle should be designed from the opposite side of the tumor resection.

During the early postoperative period, hyperbaric oxygen therapy may be initiated in patients with poorly perfused nipple and areolar complexes and skin flaps.

In conclusion, breast reduction and mastopexy may be performed safely after breast conserving surgery and radiotherapy. The patients may be satisfied and acceptable results may be obtained with precise timing, planning and followup.

Keywords: Breast conserving surgery, breast reduction, complication, radiotherapy

Figure 1



The skin detachment at the left breast of the patient is demonstrated at the third postoperative week, right before the debridement and resuturation.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

OP-040

Nipple-Sparing Mastectomy with Inverted Omega Incision and Reconstruction with Dual Plan Implant Placement

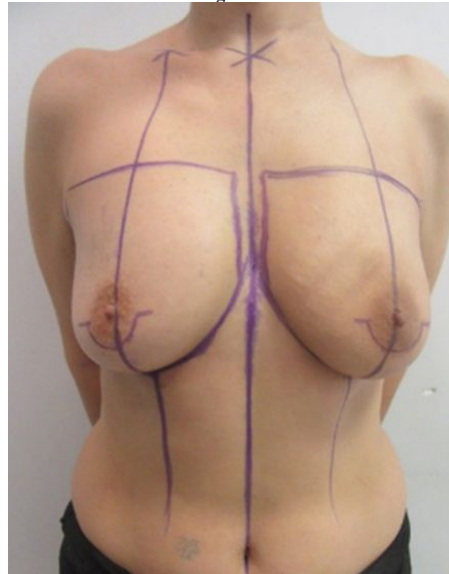
Tahir Babahan, Ahmet Özdemir, Salih Can Sezer, Merve Özger, Haluk Vayvada, Adnan Menderes

The Department of Plastic, Reconstructive and Aesthetic Surgery, Dokuz Eylül University Hospital, İzmir / Türkiye

The incidence of breast cancer is increasing day by day and treatment approaches are changing and developing in parallel. Today, the postoperative aesthetic appearance of the breast is as important as the removal of cancerous tissue. This increasing importance is shaped by the aesthetic perception of the surgeon and the expectations of the patients. In this study, our aesthetically acceptable results of mastectomy and implant-based breast reconstruction with inverted omega incision are presented.

Keywords: Breast cancer, breast reconstruction, inverted omega incision, nipple-sparing mastectomy, omega incision, silicone implant

Figure 1



Preoperative marking of the patient.

Figure 2



Preoperative views (above) and postoperative 1st month views of the patient (below).



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-041

Effectiveness of Perioperative Ultrasound Guided Pectoralis Nerves Block for Pain Control and Reducing Analgesic Dose After Reduction Mammoplasty

Tuğba Gün Koplay¹, Betül Kozanhan², Mehmet Nurullah Arıkan³

¹Plastic, Reconstructive and Aesthetic Surgery, University of Health Science, Konya, City Hospital, Konya / Türkiye

²Anesthesiology and Reanimation, University of Health Science, Konya, City Hospital, Konya / Türkiye

³Anesthesiology and Reanimation, Kadınhanı Refik Saime Koyuncu Hospital, Konya / Türkiye

Introduction and Aim

Reduction mammoplasty is one of the most commonly applied aesthetic procedures in breast surgery. Pain management is essential in reduction mammoplasty for easy recovery and satisfaction. The pain after the reduction mammoplasty procedure can affect the healing process and lead to immobilization-related severe complications. Analgesics are used for physical and psychosocial well-being during the postoperative period.1 Opioids, nonsteroidal anti-inflammatory drugs, and paracetamol are the most commonly used analgesics for this purpose. Due to the disadvantages of opioids' adverse effects such as nausea, vomiting, constipation, hypotension, sweating, disforia, and sedation, studies focus on finding more effective and less harmful

Methods

Regional anesthesia is preferred as a part of comprehensive anesthesia and is performed in many areas for pain control and reducing analgesic usage. Intercostal, serratus, paravertebral, and pectoral I and II blocks are the most commonly chosen methods in breast surgery. The pectoral nerves (PECs) blocks were developed by Blanco, which include PEC I and PEC II blocks.3,4

This study aims to evaluate the effects of intraoperative ultrasound-guided Pectoralis Nerves (PECs) I and II blocks on pain control and used analgesic dose, type and time, and patient satisfaction.

Material and methods

Patient cohort

This study was conducted per the World Medical Association Declaration of Helsinki. Approval from the local ethics committee was obtained (2022/038). Informed consent was obtained from all individual participants. Eighty-seven patients mean age of 38.3 ± 7.26 (23-54), with the American Society of Anesthesiologists (ASA) I-II who underwent reduction mammoplasty under general anesthesia at the University of Health Science Hospital between January 2018 – April 2022, were included in this study. The exclusion criteria were BMI of more than 40, smoking, chronic pain, missing data, and previous breast surgery. The study was designed retrospectively, and patients who underwent reduction mammoplasty by the same surgeon were divided into PECs block and control groups. The records of 44 patients who did not undergo PECs block (Group A) and 43 patients who underwent perioperative ultrasound-guided PECs I and II blocks under general anesthesia (Group B) were reviewed retrospectively by the researcher, who was blind about the technique. The minimum follow-up period was six months. VAS (Visual Analog Scale) scores, type and amount of analgesics, postoperative length of stay (LOS), and EQ-5D patient well-being questionnaire were evaluated.

Surgical Technique

All the operations were performed by the same board-certified plastic surgeon (T.G.K.) under general anesthesia. The wise pattern incision was used in all patients and the pedicle was not suspended on the muscle with any sutures. Electrocautery was used for dissection in all patients. Drains were placed in all patients and withdrawn when the drainage was less than 30 cc.



Anesthesia Protocol

All patients received midazolam 1 mg before the induction of anesthesia and were monitored with three leads electrocardiography, pulse oximetry, non-invasive blood pressure, and capnography. General anesthesia was induced with fentanyl 1-1.5 µg/kg, propofol 1.5-2 mg/kg, and a tracheal tube was facilitated with rocuronium 0.6 mg/kg. Anesthesia was maintained with sevoflurane 2%, remifentanyl infusion 0.1-1 µg/kg/min, and O₂/air mixture with a fraction of 35%-50% inspired O₂. Fentanyl, 25 µg in bolus doses, was given intravenously if the mean blood pressure (MBP) or heart rate exceeded 20% of the preoperative baseline value. Hypotension was defined as a decrease of more than 20% of the baseline MBP and was treated with increments of 5 mg bolus doses of ephedrine iv and 250 ml of saline solution.

Administration of PECS I and II block

All the PECs blocks were performed by a skilled specialist in Ultrasound (USG) guided regional anesthesia (author M.N.A.) to minimize the pain and discomfort in the postoperative period, at the end of the surgery, and before extubation (Figure 1). At the end of the surgery, position was not changed and using a linear ultrasound probe (MyLabFive; Esaote Europe BV Philipsweg 1 6227 AJ, Maastricht, the Netherlands), PECS I block is achieved with a 10 mL of 0.25% bupivacaine injection of local anesthetic between the pectoralis major and minor muscles at the level of a third rib to block the medial and lateral pectoral nerves. For PECs II block, 20 mL of 0.25% bupivacaine was injected between the pectoralis minor and serratus anterior muscles at the level of the fourth rib, aiming to block the intercostal nerves and the long thoracic nerve.

Postoperative Follow-up

Patients were hospitalized for at least one day. They were evaluated every three hours during the postoperative 21 hours by VAS score (0-10), and analgesic was applied if necessary. The pain scores ranged from 0: no pain to 10: worst pain. Postoperatively, Paracetamol was applied if the VAS score was 2-3, NSAID (Tenoksikam 20 mg) was applied if the VAS score was 4-5, and opioid (Tramol HCL 100mg/2cc) was applied intravenously if the VAS score was six or more in 100 cc saline. Paracetamol and opioid were administered to all the patients in the operating room before the surgical incision and at the end of the surgery, respectively. All the patients were mobilized at the sixth hour and discharged on the first day if the drainage was lower than 30cc. NSAID (per oral and once a day) was prescribed after discharge. Two groups were compared according to the VAS score and analgesic need. EQ-5D satisfaction questionnaire was used to evaluate satisfaction at postoperative 3th month.

Statistical Analysis

SPSS 26.0 (IBM Corporation, Armonk, New York, United States) program was used in the analysis of the variables. The conformity of univariate data to normal distribution was evaluated with the Shapiro-Wilk Francia test, while homogeneity of variance was evaluated with the Levene test. In the comparison of two independent groups according to quantitative variables, the Independent- Samples T-test was used together with the Bootstrap results, while the Mann- Whitney U test was used together with the Monte- Carlo results. While Friedman's Two-Way test was tested using Monte Carlo simulation results for comparing more than two repeated measurements of dependent quantitative variables, the Stepwise step-down comparisons test was used for Posthoc analysis.

Quantitative variables were expressed in the Tables as mean (standard deviation) (Minimum-Maximum) and Median (1st Quartile- 3rd Quartile), while categorical variables were shown as n (%). The variables were analyzed at a 95% confidence level and a p-value less than 0.05 was considered significant.

Results

Eighty-seven patients, aged 38,3±7,26 (23-54) whom we applied reduction mammoplasty were divided into two groups. The mean ages of the groups were comparable; it was 38.41 ± 7.36 and 38.19 ± 7.24, respectively (p>0.05) (Table 1). Also, groups were comparable according to the BMI (Table 1). The patients' mean BMI was 26.15 ± 3.14; it was 26.19 ± 3.19 and 26.11 ± 3.12, respectively (p>0.05).

VAS scores were lower in Group B at the third, ninth, eleventh, fifteenth, eighteenth, and twenty-first hours and it was more stable according to Group A in postoperative twenty-one hour (p<0.05) (Figure 2).



At the third hour, total analgesic usage, paracetamol, and NSAID doses were statistically higher in group A ($p < 0.05$ each). At the sixth hour, total analgesic usage and paracetamol dose were higher in group A ($p < 0.05$ each). At the twelfth hour, there were no differences between groups according to the total analgesic usage. However, the NSAID dose was higher in the Group A ($p < 0.05$ each). At the fifteenth-hour total analgesic usage and paracetamol dose were higher in group A ($p < 0.05$ in each). Finally, at the ninth, eighteenth, and twenty-first hours, total analgesic usage and opioid dose were higher in group A ($p < 0.05$ in each) (Table 2).

All the patients were discharged postoperative first day. No complications related to PECs blocks were observed. The EQ-5D scores were high in all two groups and statistical differences were not detected ($p > 0.05$).

Discussion and Conclusion

Pain is one of the prevalent and important complications after reduction mammoplasty, one of the most commonly performed procedures in breast surgery. Reducing the pain provides faster recovery, fewer hospital stays, and greater comfort and satisfaction. 1. For these purposes, analgesics like paracetamol, NSAID drugs, and opioids are frequently used. While NSAID drugs cause gastric complaints, opioids cause vomiting, nausea, constipation, pruritis, respiratory depression, hypotension, and addiction. 2. This study showed the benefits of PECs block in reducing analgesic doses and improving pain control.

Decreasing opioid dose is one of the goals of postoperative follow-up. Regional anesthesia is preferred as a part of comprehensive anesthesia related to the quality of pain control and reducing analgesic usage. Its effectivity was also shown in breast surgery. 1. The thoracic paravertebral block is one of the most commonly used technique, in breast surgery, which has been found beneficial in decreasing analgesic consumption. 6,7 The benefits of truncal regional anesthesia for postoperative pain were shown in the patients after mastectomy. 8 Interscalene block, intrapleural block, thoracic epidural block, thoracic paravertebral block, intercostal, serratus, pectoral I and II blocks, and wound infiltration are used mainly in breast cancer surgery for anesthesia and analgesia. 5 Most studies about regional anesthesia in breast surgery are on breast reconstruction. 4, There are few reports on the reduction mammoplasty.

The PEC blocks were developed to provide postoperative analgesia, including PEC I and PEC II blocks by Blanco. 3,4. This technique blocks pectoral, intercostobrachial, third to sixth intercostals, and long thoracic nerves. 5. The PEC I block is achieved with a 10 mL of 0.25% bupivacaine injection of local anesthetic between the pectoralis major and minor muscles at the third rib level to block the medial and lateral pectoral nerves. 3. For the PEC II block, 20 mL of 0.25% bupivacaine is injected between the pectoralis minor and serratus anterior muscles at the level of the fourth rib block, the intercostal nerves, and the long thoracic nerve. 4. PEC II blockage has been reported as a beneficial method of pain relief for radical mastectomy compared to the control group. However, PEC I block was not effective in breast augmentation. In this study, VAS scores were lower in the block group at postoperative follow-up of reduction mammoplasty 9th, 15th, 18th, and 21st hours.

Daniel et al. reported their experiences with PEC block in reduction mammoplasty in adolescent patients. They reported this technique as an effective method for opioid use, nausea, vomiting, and pain scores. 9 Sercan et al. compared local infiltration and PEC II block in reduction mammoplasty and found PEC II block to reduce pain and analgesic use. 10 In the current literature, we could not find any study related to PEC I and its combination with PEC II block in reduction mammoplasty. In this study, the total analgesic dose was lower in group B at postoperative 3rd, 6th, 9th, 15th, 18th, and 21st hours ($p < 0.05$). The opioid dose was lower in group B at postoperative 9th, 18th, and 21st hours ($p < 0.05$). Also, paracetamol was used in lower doses in group B at the postoperative 6th and 15th hours, and NSAID doses were higher in group A at the postoperative 12th hour ($p < 0.05$). So, lower analgesic doses could be provided through PECs blocks.

As it has been shown in many fields, regional anesthesia provides better recovery in the early period. However, there were no differences between regional anesthesia and general anesthesia after the seventh day. In this study, there were no differences between groups regarding EQ-5D scores, which were used to evaluate postoperative recovery and satisfaction in the third month. The limitations of this study are its retrospective design and short follow-up period.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



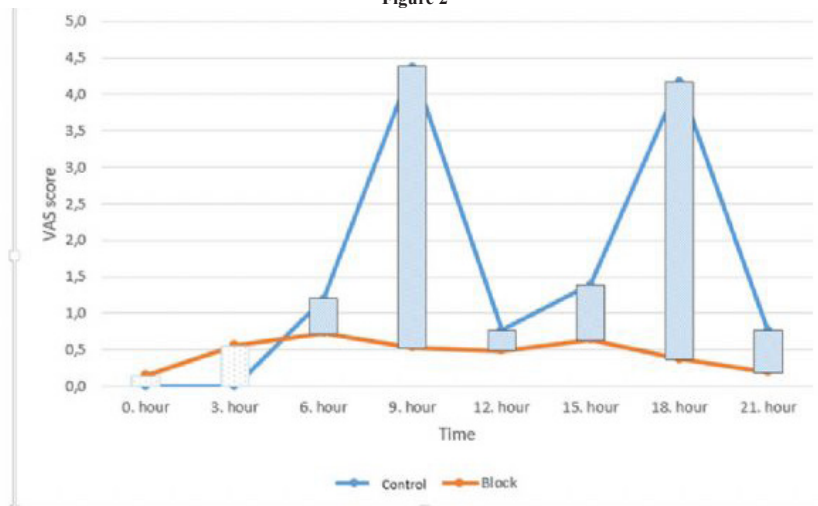
13 September
Pre Congress Course
14 - 16 September
Congress

Conclusions

In conclusion, studies are mostly focused on benefit from regional anesthesia in mastectomy and breast reconstruction, we did not observe any studies on PEC I and its combination with PECS II Block in reduction mammoplasty. However, decreasing the pain, analgesic dose, and morbidities are as crucial as other surgeries in reduction mammoplasty. For this purpose, the power of this study is demonstrating the benefits of perioperative ultrasound-guided PEC I and II blocks combination as a forceful alternative in reduction mammoplasty to decrease pain and analgesic dose.

Keywords: Analgesia, Pain control, Pectoralis nerve block, Reduction mammoplasty, Regional anesthesia

Figure 2



Graphical show of Visual Analog Scores of groups



OP-042

Does the Usage of Drains Create a Risk of Surgical Site Infection During Breast Surgery?

Tuğba Gün Koplay¹, Asuman Güzelant²

¹Plastic, Reconstructive and Aesthetic Surgery, University of Health Science, Konya City Hospital, Konya / Türkiye

²Department of Microbiology and Clinical Microbiology, Konya City Hospital, Konya / Türkiye

Introduction

Reconstructive and aesthetic breast surgeries are popular in our era, and patients come to clinicians with high expectations. Nevertheless, undesirable results can occur in such surgeries, including complications such as hematoma, seroma and infection. Many methods are used to avoid complications. Drains, for instance, are used to avoid hematoma, seroma and surgical site infection (SSI). It is believed that drains decrease SSI by preventing hematoma and seroma. On the other hand, it is debated whether these drains increase the probability of infection due to retrograde contamination (1,2). Therefore, surgeons are divided into those who use drains and those who do not.

In this study, we aimed to determine whether drains are a source of retrograde contamination in patients undergoing breast surgery by analyzing drain tip cultures.

Method

This study was conducted in conformity with the World Medical Association's Declaration of Helsinki and approved by the local ethics committee (2023/020). We retrospectively viewed the records of patients on whom we operated between March 2022 and February 2023. Demographic, clinical and microbiologic data were collected. We included as breast surgeries reduction mammoplasty, breast augmentation, mastopexy, gynecomastia and breast reconstruction. A total of 128 operations were selected, but 29 patients were excluded because drains were not used during breast augmentation or gynecomastia, and two more patients were excluded because of wound dehiscence and direct contamination after breast reconstruction. Further exclusion criteria included the use of antibiotics in the previous month, presence of autoimmune diseases and cases in which drain tip cultures were not performed.

We prepared the skin with chlorhexidine prior to each surgery. All operations were carried out in operating rooms with laminar ventilation. We applied 1 gr of intravenous cefazolin 30 minutes before incision. In postoperative follow-up, we administered intravenous ciprofloxacin at the hospital and oral ciprofloxacin after discharge twice a day for one week. Antibiotherapy was prolonged until the drains were removed. Jackson-Pratt® drains were used in breast augmentation, mastopexy and breast reconstruction with implants. Hemovac drains were used in reduction mammoplasty, gynecomastia and mastopexy without implants. The drains were removed when the daily output dropped below 30 ml per day.

The drain tip cultures were routinely evaluated by the department of microbiology. When the drains were removed (in sterile conditions), the drain tips were cut at three cm and placed into sterile culture containers along with 4 cc of sterile saline. The drains were evaluated one at a time using bilateral procedures.

Infection symptoms, such as fever, hyperemia, wound dehiscence, abscess and wound discharge, were evaluated in the first month after each operation. Drain type, duration and output volume were analyzed. Statistical values were calculated as means, minimum-maximum values and percentages using Excel (Microsoft Corp., Redmond, WA, USA). While quantitative variables are expressed as means (with standard deviations) and medians (minimum/maximum) in the tables, categorical variables are shown as n(%). Comparisons could not be made because we could not refer to a control group with SSI.

Results

The study included 99 patients—3 male, 96 female—with a mean age of 37.84 ± 8.23 (Table 1). The mean body mass index was 24.52 ± 3.45 . Eighteen patients were smokers (18.18%), eight had chronic anemia (8.08%), three had asthma (3.03%) and four had diabetes (4.04%). Seven breast augmentations, 3 gynecomastia surgeries, 37 breast reconstructions with implants, 3 breast reconstructions with latissimus dorsi flaps and 49 reduction mammoplasties were performed.



In these procedures, 56 Jackson-Pratt® drains and 106 Hemovac drains were placed. We did not observe infection symptoms, such as fever, hyperemia, abscess or hematoma, in any of the patients. We observed mild wound-healing problems in four patients that healed secondarily. In most cases, we removed the drains before discharge. The patients who did not want to be hospitalized were discharged with drains and visited until the drainage was lower than 30 cc. The mean duration was 7.16 ± 7.67 days in all patients: 1.3 ± 0.65 days in reduction mammoplasty, 1 day in gynecomastia, 3.2 ± 1.66 days in breast augmentation and 18.6 ± 5.67 days in breast reconstruction. The mean output volume over the total follow-up was 224.66 ± 235.02 cc in all patients: 24.75 ± 29.07 cc in reduction mammoplasty, 7.55 ± 4.18 cc in gynecomastia, 40.8 ± 57.57 in breast augmentation and 528.91 ± 242.03 cc in breast reconstruction. The results of the 162 drain tip cultures were all negative.

Discussion

SSI is one of the most debated topics in breast surgery because it is linked with higher morbidity, increased costs, longer hospitalization and patient dissatisfaction. The most well-known risk factors for SSI are a high body mass index, smoking, diabetes mellitus and immunosuppression. Besides these, there is debate over whether drain usage leads to SSI. While some authors believe that it decreases infection by preventing hematoma, others believe that it increases the infection rate through retrograde contamination (1,3,4,5,6). In a review, Reiffell et al. found a few studies indicating increased SSI risk with drains but no studies indicating decreased SSI with drains (7). Thus, it is unclear whether drains heighten the risk of infection. In our study, drain-related factors were examined and evaluated with the cloud of current literature.

The goal of any treatment is to achieve maximum satisfaction with fast recovery and minimum cost. Thus, it is important to prevent infection. In this context, prophylactic antibiotic usage is another controversial topic. Zapata-Copete et al. found prophylactic antibiotics advantageous for decreasing the incidence of SSI in reduction mammoplasty (8). A systematic review of the use of prophylactic antibiotics in aesthetic breast surgery recommended their use in reduction mammoplasty but could not find evidence of their efficacy in augmentation mammoplasty (9). Keramidas et al. did not find differences in wound infection between a group that used prophylactic antibiotics in breast augmentation and a group that did not (10). In our clinic, we routinely apply 1 gr of intravenous cefazolin 30 minutes before incision. Additionally, we recommend the usage of oral ciprofloxacin for one week postoperative.

The necessity of drains in breast surgery is unclear. When performing reduction mammoplasty, Collis used drains at one site but not at the other; while abscesses were higher in the drained breast, minor infections were more common in the undrained site (11). Moreover, they did not detect differences in hematoma or other complications between the drained and non-drained sides and ultimately found drains unnecessary (11). In their review of drain usage in breast surgery, Khan et al. did not find significant differences between drained and non-drained groups in terms of infection, edema, seroma, fat necrosis, nipple loss or wound problems (12). They did not identify any benefits of drains but offered closed-suction drains if necessary. In our clinic, we do not use drains in breast augmentation if not necessary. However, we routinely place drains in reduction mammoplasty, breast reconstruction and mastopexy. According to our study, it can be opted not to use drains in reduction mammoplasty because we withdrew them on the first day in 30 of 49 (61.2%) patients; their mean duration of use was 1.3 days (1–3).

Cost is always important when planning treatment. While drains increase costs due to the required equipment, they prevent additional costs by preventing hematoma, seroma and additional related problems, such as long hospitalization (3). To prevent these complications, we use drains in breast surgery.

There are many drain types, including passive and active closed systems and suction drains, such as those of Jackson-Pratt® and Hemovac. Closed-system drains are preferred in breast surgery due to the advantages of preventing infection and preventing seroma by decreasing dead space (2). Bascone et al. compared round and flat drains and recommended single, large, round drains in alloplastic breast reconstruction as having the lowest rates of abscess and wound dehiscence (13). We always use closed-system drains in breast surgery. We prefer flat (Jackson-Pratt®) drains for operations with implants, such as augmentation and reconstruction. On the other hand, if we do not use implants, we prefer round (Hemovac) drains.

Longer drain use can increase wound infections in spinal surgery (3). It was also identified as a risk factor in abdominal surgery (4). It was shown that every week, infection risk increases by 72.6% in breast surgery (15). In oncologic breast surgery, SSI was found to be higher after 19 days with drains (7). In our study, we did not find differences between reconstruction patients and the others, except long durations in reconstruction, such as two or three weeks. Thus, we can say that time is not the problem if the drains are placed in sterile conditions and followed up.



The criteria for removing drains are also unclear. While many authors remove the drains when daily output drops below 50 ml (15), Pennington et al. do so when the flow reaches 200 ml (3). They did not find any correlation between SSI and a daily output lower than 200 ml in degenerative spine surgery (3). It is recommended in most studies (87%) to remove the drains when the outflow is less than 30 cc/day (2). In our practice, we remove drains when the daily output drops below 30 ml. We did not observe hematoma or infection in any patients.

Drain tip cultures have been used in many studies. Sorenson found that a positive drain culture is associated with SSI (16). While culture positivity of drain tip was found to be associated with 50% wound infection, negativity was found to be related with uninfected wounds (1). Likewise, duration of drain usage was found to be correlated with positive drain tip cultures and SSI in breast surgery (14) and clean orthopedic surgeries (16). In a series on liver transplantation, drain tip cultures were positive in 84.6% in patients with postoperative infection (17). Moreover, they found that the microorganisms in the tip culture were the same as in a previous culture from the infected wound (17). Thus, we use drain tip cultures to detect SSI. In our series, we only found tip cultures to be positive in two patients, and they were reported as skin contamination. No patients had infection symptoms.

The main limitation of this study is its retrospective design and lack of a control group. We could not create a control group without drains because of routine placement. Moreover, we could not discuss the differences between positive and negative cultures because, fortunately, drain tip cultures were negative in all patients.

In conclusion, drains are used for decreasing and preventing infection, hematoma and seroma. Longer duration is the most significant factor in SSI stemming from drain usage. In our study, no significant reproduction in drain tip cultures was detected. Thus, according to our findings, it is safe to use drains without fear of SSI in breast surgery.

Keywords: Breast surgery, Drain, Surgical site infection, breast reduction, breast augmentation

Table 1

	Number	Percentage
Sex		
Man	3	
Woman	96	
Comorbidities		
Smoking	18	18,18
Chronic anemia	8	8,08
Asthma	3	3,03
Diabetes	4	4,04
Procedure		
Breast augmentation	7	7,07
Gynecomastia	3	3,03
Breast reconstruction with Implant	37	37,37
Breast reconstruction with flap	3	3,03
Reduction mammoplasty	49	49,49
Drain type		
Jackson-Pratt®	56	34,56
Hemovac	106	65,43
Drain duration time (day)		
Total	7,16 ± 7,67	
Breast augmentation	3,2 ± 1,66	
Gynecomastia	1	
Breast reconstruction	18,6 ± 5,67	
Reduction mammoplasty	1,3 ± 0,65	
Complications		
Fever	0	0
Hiperemia	0	0
Abscess	0	0
Hematoma	0	0
Wound healing problems	4	4,04
Output volume (cc)		
Total	224,66 ± 235,02	
Breast augmentation	40,8 ± 57,57	
Gynecomastia	7,5 ± 4,18	
Breast reconstruction	528,91 ± 242,03	
Reduction mammoplasty	24,75 ± 29,07	
Tip culture		
Negative	162	100
Positive	0	0



OP-043

Does Pedicled Transverse Rectus Abdominis Myocutaneous (pTRAM) Flap Perfusion Change with Position in Autologous Breast Reconstruction?

Bilsev Ince, Mahmut Tekecik, Yiğitcan Kaya, Mehmet Dadacı

Necmettin Erbakan University Faculty of Medicine, Plastic Surgery Department, Konya / Türkiye

Breast cancer is the most common type of cancer in women and is one of the leading causes of cancer-related death (1). According to the 2015 cancer statistics data for Türkiye, breast cancer ranks first in the list of top 10 cancers in women and constitutes 43.8% of all cancers in women (2). Deformities that occur after breast cancer treatment have adverse effects on women in physiological, psychological, social, and economic aspects.

Although the pedicled transverse rectus abdominis myocutaneous core (pTRAM) flap, one of the main flaps used in breast reconstruction, has been successfully utilized for many years, it has been replaced by deep inferior epigastric artery perforator (DIEP) flap due to complications such as partial flap loss, skin necrosis and fat necrosis due to ischemic conditions. Despite the DIEP flap is accepted as the gold standard in breast reconstruction, the pTRAM flap is still preferred for reasons such as reduced total necrosis compared to the free flap, less technically challenging, shorter hospital stay and shorter surgical time(4). The primary disadvantage of the pTRAM flap, partial flap loss, can be attributed to several factors. These include the fact that the pedicle of the flap is derived from the non-dominant vessel of the superior epigastric artery, potential compression of the flap's pedicle during tunneling due to bending, and uncertainty regarding which regions are fully vascularized by the perforators arising from the muscle. While the vascularization of these regions has been broadly explained, these complications have not yet to been completely resolved.

The aim of this study is to determine whether the circulation of the pTRAM flap changes with position (after elevating the flap pedicle on the abdomen and after tunneling on the chest wall) If it is changing, the perfusion should be evaluated before and after tunneling according to the regions.

A total of 10 female patients who underwent autologous breast reconstruction with pTRAM flap at our clinic between 2019 and 2020 were included in this prospective study. Patients who declined reconstruction with a free flap and underwent breast reconstruction with a unilateral pTRAM flap were also enrolled in the study. All surgeries were performed by a single surgeon. Local ethical committee approval was obtained.

A total of 10 patients underwent autologous breast reconstruction with pTRAM flap. Among them, 6 patients had reconstruction on the left breast, and 4 patients on the right breast. Early breast reconstruction was performed on 6 patients, while delayed breast reconstruction was performed on 4 patients. The average age of the patients was 42 years (ranging from 30 to 55). The patients were followed for an average of 10 months (ranging from 6 to 18 months). Reconstruction was performed after subcutaneous mastectomy in 5 patients, simple mastectomy in 3 patients, and modified radical mastectomy in 2 patients. The average body mass index (BMI) of the patients was 27.6 kg/m². Among the patients who underwent early-stage breast reconstruction, 2 received neoadjuvant chemotherapy, while 3 received adjuvant treatment. Two patients were active smokers, and 1 patient was receiving insulin therapy for diabetes. The average length of hospital stay for the patients was 4.7 days (ranging from 3 to 12 days).

When evaluating postoperative complications, no instances of total flap loss were observed among our patients. Necrosis was observed in the subcutaneous mastectomy skin flap of 2 patients, and fat necrosis was observed in 1 patient. For patients with necrosis in the skin flap, debridement was performed under local anesthesia, followed by re-suturing. One patient experienced dehiscence in the donor area, and no cases of abdominal hernia were observed among our patients.

In all patients, ligation of the inferior epigastric system and inadequate perfusion areas after tunneling were compared. Among the patients, 80% (8 out of 10) exhibited changes in perfused areas in Zone 2 after tunneling, where a 20% reduction in perfusion was observed in the area neighboring the umbilicus and corresponding to the upper pole of the newly created breast before flap elevation. While no significant changes were observed in Zone 1 after tunneling, decreases in perfusion were identified in different areas of Zone 3 in three patients. Additionally, in three patients, it was noted that the lowest and uppermost areas of the flap, near the umbilicus incision, exhibited relatively lower perfusion compared to other areas before tunneling. In Zone 4, completely inadequate perfusion was not observed after tunneling, and approximately 30% of the region exhibited perfusion similar to other areas.



In breast cancer treatment, it is noteworthy that the existing surgical methods have transitioned from radical surgical interventions to breast-conserving operations since the early 20th century (5). With this change, the choice of treatment method during breast reconstruction depends on the patient's expectations before reconstruction, their medical condition, the type and grade of cancer, the number of positive lymph nodes, the presence of metastasis, accompanying systemic conditions, the planned reconstruction method, and the timing of reconstruction (6).

Breast reconstructions can be performed in both the early and late stages, utilizing various options such as autologous tissue reconstruction and one or two-stage implant options (7). Among the options for repair using autologous tissues, the most commonly used methods include the deep inferior epigastric artery perforator (DIEP) flap, pedicled transverse rectus abdominis myocutaneous (pTRAM) flap, free transverse rectus abdominis myocutaneous (sTRAM) flap, free superior gluteal artery perforator (SGAP) flap, free transverse gracilis myocutaneous (TUG) flap, pedicled latissimus dorsi myocutaneous flap, and free superficial inferior epigastric artery (SIEA) flaps (8).

Breast reconstruction utilizes three different vascular sources from the lower abdominal region: superior epigastric system (pTRAM), deep inferior epigastric system (DIEP), and superficial inferior epigastric system (9). When designing the skin island of flaps, attention must be paid to these vascular supply systems. Another critical consideration in flap design is the placement of the incision above the umbilicus. Placing the incision below the umbilicus can lead to the exclusion of direct perforators from the superior epigastric artery. The angiosome concept for the inferior and superior epigastric systems was defined by Boyd and Taylor (10). According to this concept, Zone 1 represents the adjacent angiosome formed by choke vessels detached from the vascular pedicle. As a result, partial necrosis may occur in Zones 2 and 3 due to intraoperative congestion and ischemia.

During reconstruction with a TRAM flap, sacrificing the rectus abdominis muscle can lead to abdominal wall weakness and herniation. To reduce ischemic complications, the free TRAM flap has been described, and variations such as the muscle-sparing free TRAM flap and deep inferior epigastric artery perforator (DIEP) flaps have been introduced to minimize abdominal wall weakening (11). The DIEP flap, which was described by Koshima and Soeda in 1989, was popularized for breast reconstruction by Allen and Treece (12,13).

In autologous breast reconstruction with pTRAM flap, several risk factors have been identified that increase the risk of complications, including smoking, obesity, postoperative radiotherapy, and previous abdominal surgery (19). Bending or kinking of the pedicle during tunneling can lead to flap ischemia and increase the risk of partial necrosis and fat necrosis. If more than 50% of the lower abdominal region is to be used, contralateral pTRAM flap should be preferred. In the literature, the rates of partial necrosis range from 17% to 21%, while rates of abdominal morbidity (abdominal bloating and hernia) vary from 13% to 16% (20,21). Some studies report even higher rates. In our study, the rate of partial flap loss was 10%, and no cases of abdominal morbidity were observed. We attribute the lower rate of partial flap loss in our study to the use of the SPY system and the small sample size, while the absence of abdominal morbidity can be attributed to the use of abdominal mesh in all patients.

The viability of different zones in the pTRAM flap remains a debated topic. Wagner et al. claimed that 2.5 zones are viable, with 70% viability in zone 2 and 60% in zone 3, while noting that the exact location of these zones is variable among individuals (22). Another study argued that 80% of zone 2 and 20% of zone 3 are viable (23). In our study, we found that zone 2 viability was approximately 70%, zone 3 viability was 50%, and zone 4 viability was 30%. These variations are attributed to individual patient characteristics and the challenge of accurately predicting blood flow in flap design. While it is not impossible to predict flap viability with certainty during surgery, it remains challenging. The use of supplementary methods enhances flap viability and reduces complications. McNally et al., in a study assessing pTRAM flap perfusion, reported an instantaneous decrease of 69.3% in perfusion after flap tunneling, attributing this to a combined effect of flap pedicle rotation, tunneling, and compression (24).

One of the most significant limitations of our study is the small sample size. Therefore, although our data demonstrate changes in flap perfusion with different positions, we cannot generalize these findings to all patients. An additional limitation of our study is the lack of standardization of SPY images. Images obtained after ICG injection can be subjectively interpreted differently by different surgeons, leading to varying results. Another limitation is the variability in mastectomy techniques, making standardization challenging when evaluating flap viability. In many cases, literature suggests that zone 4 is completely excised due to inadequate perfusion. In cases where there is a borderline amount of abdominal tissue available for breast reconstruction and more abdominal tissue is needed, using the SPY device to determine perfusion can assist in a wider pTRAM flap elevation (25). Furthermore, in our study, approximately 30% of the flap viability in Zone 4, which corresponds to the medial portion of the newly created breast after tunneling, could contribute to creating the medial mound of the breast and provide a better aesthetic outcome.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

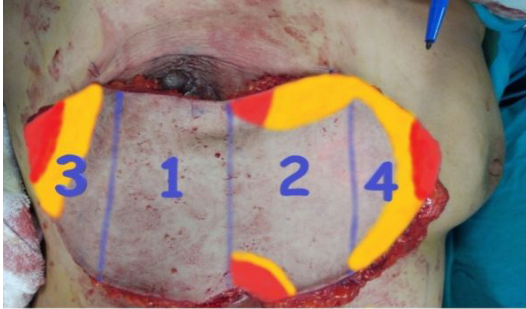
Although the pTRAM zones have been known for a long time, changes in flap position can affect the perfusion due to the damage to the pedicle. Therefore, simultaneous imaging with the SPY device can reduce complication rates and facilitate the surgeon's prediction in terms of flap viability. While there may be individual differences among patients, approximately 80% of the patients in our study showed a significant decrease in perfusion after tunneling in the upper portion of Zone 2, which had adequate perfusion when the flap was elevated. Therefore, real-time imaging with the SPY device can aid in reducing complications and making the surgeon's estimation of flap viability easier.

With the advancement of technology, obtaining intraoperative objective data on flap perfusion can help reduce the risk of one of the major drawbacks of this flap, which is partial necrosis. The identification of issues with perfusion using SPY in the region where we anticipated no problems in 80% of the patients suggests that different perforators in the abdomen provide blood supply in distinct ways. In the literature, perfusion evaluation in Zone 4, which is usually excised totally, can be used to incorporate the flap in a controlled manner. Due to genetic variations in each country, collecting local data would be beneficial. In future studies, increasing the number of patients can lead to more precise delineation of the areas supplied by the perforators.

In cases of breast reconstruction with the TRAM flap, intraoperative determination of circulation using the SPY device can potentially reduce the complication rate.

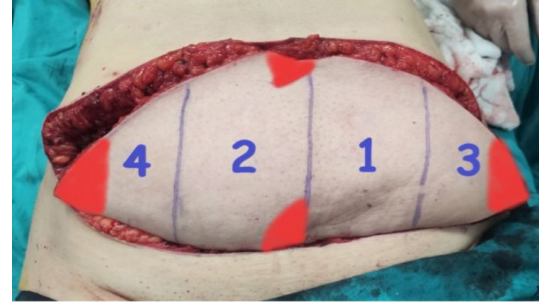
Keywords: tram flap, breast cancer, breast reconstruction, pedicled flap, spy imaging

Figure 3

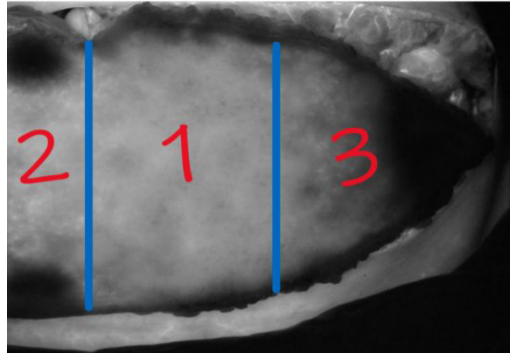


red colour-Before tunnelization yellow colour
In addition to the areas in red, poorly perfused areas after tunneling

Schematic view of poorly perfused areas before tunneling



Spy Imaging Before Tunnelization





OP-044

Sensorial Reconstruction of Lower Extremity with Lateral Arm Free Flap

Furkan Temizayak, Burak Yaşar, Arda Tınaz, Tibet Kaan Yolsal, Harun Güleş, Hasan Murat Ergani, Ramazan Erkin Ünlü

Ankara Bilkent City Hospital, Ankara / Türkiye

Lower extremity injuries are common in farming and occupational injuries. These injuries are mostly crush type and generally multi-trauma. Because of the form of injuries, defect in lower extremities occurs. Sometimes after bone fixation or reduction, lower extremity defect occurs. For good reconstruction of lower extremity, should cover bone, sometimes filling bone gap and reconstruct the bone, fill the defect area, make great contour that is aesthetically acceptable and recover the function of lower leg. Reconstruction of lower extremity is hard. Generally patients with lower extremity defect have had multi-trauma, broken bones, and had vascular injuries. Usually lower extremity defect is reconstructed by free flaps. Criteria of flap choosing are size of defect, need bone reconstruction, pedicle size, recover the function (sensation, contour, filling the gap, pressure bearing etc.)

The lateral arm free flap is one of the most important flaps for reconstructive surgery. Lateral arm free flap has a long pedicle with constant anatomy, minimal donor site morbidity, and not much variation in vascular anatomy. The sensation is important for the function of the lower extremity. The lateral arm free flap not only makes 3-dimensional reconstruction of lower extremity but also provides sensory recovery. Therefore in this study, we aimed to show sensory recovery after using a lateral arm free flap to reconstruct the lower extremity defect and compare it to the unharmed extremity. This study includes patients that used lateral arm free flaps for lower extremity reconstruction between 2016 to 2023 at Ankara Numune Research Hospital and Ankara Bilkent City Hospital. All included patients have soft tissue defect in lower extremity reconstructed by lateral arm free flap. Patient age between 16 to 68. Patients with Patient ID, age, gender, and clinical complication were obtained from patient charts and HiCAMP System. 2-point discrimination in flap and in unharmed extremity measured with discriminator by 2 surgeons in different times. Pain and heat were evaluated in the flap and unharmed extremity and compared with each other. Any patient described cold intolerance.

Patients with lower extremity injury coming emergency and was made bone fixation with external fixator or Ilizarov by Orthopedic surgery. After fixation, great debridement around the defect was made by us. Debridement is important owing to form of injury. After debridement, eventual size of defect occurs. In final reconstruction operation, template was drawn. Lateral arm free flap was harvested with proper size of pedicle that radial collateral artery with concomitant veins. Flaps included lower lateral cutaneous nerve. Firstly in recipient side, made arterial end to end or end to side anastomosis, after made venous anastomosis. Lateral arm free flap with lower lateral cutaneous nerve have end to side coaptation anterior tibial nerve. Flap was adapted gently. Light Gause dress was placed and changed daily. Foot elevated above heart level. First 2 days after surgery, flap refill and hematoma control hourly. Mainly patient stay in hospital 8 days.

10 foot and 6 leg defects were reconstructed by lateral arm flap, one of them can't survive due to arterial influence. All patients have exposed bone or vital structure. Most of the patients have bone fractured but no need for bone reconstruction. All flaps: fascial cutaneous flaps, musculocutaneous and flap that harvested with bone were excluded. The study includes 4 women and 11 men, ages between 17 to 68. All patients examined in our patient clinic after discharge from hospital in first month, third month after surgery and 6 months after surgery. There is no late complication. One of the patients wanted debulking because of cant wearing open shoes. All patients can do daily activities. Most of the patients turn back their old jobs. 2-point discrimination was measured with discriminator by 2 different surgeons. Result was found to be similar comparing the unharmed leg. Heat sensation generally lower than unharmed extremity (6.8/10). There is no complication sensation area of donor nerve (the anterior tibial nerve). All patients can use donor site without any morbidity.

Lower extremity function is important in daily life and occupational recovery. Reconstruction of the lower extremity not only covers bone, artery, nerve, and other vital organs but also provides sensation and function of the lower extremity. The lateral arm free flap has constant vascular anatomy and minimal donor site morbidity. The lateral arm flap is an important flap for lower extremity reconstruction. Not only covering bone and tissue but also with coaptation anterior tibial nerve providing sensory recovery. Our study

Keywords: lateral arm flap, free flap, sensory recovery, lower extremity reconstruction, 2 point discrimination



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Figure 1



Medial malleol defect reconstruction with lateral arm flap

Figure 2



Lateral arm free flap pedicle



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

OP-045

Various Applications of Pedicled Anterolateral Thigh Flap

Burak Ozkan, Abdullah Kızmaz, Süleyman Savran, Abbas Albayati, Cagri A. Uysal

Plastic Reconstructive and Aesthetic Surgery, Baskent University, Ankara / Türkiye

Objective

This retrospective study aims to evaluate the efficacy and outcomes of using the pedicled anterolateral thigh (ALT) flap for the closure of defects in various anatomical locations.

Methods

A retrospective analysis was conducted on a cohort of twelve patients (7 men, 3 women) who underwent ALT flap reconstruction with pedicle between the period of 2019 and 2022. The patients' mean age was 56 years (range: 32-72). The defects included the inguinal region (n=4), trochanteric region (n=3), medial thigh (n=2), posterior thigh (n=2), and umbilicus (n=1). The etiology of the defects varied, with the most common causes being angiography-related skin defects, hematoma, prosthetic vascular infection, burn injuries, wound dehiscence following abdominal surgery, and sarcoma resections. Perforator selection was facilitated by the use of hand Doppler, and meticulous planning was employed to determine the length of the skin island pedicle.

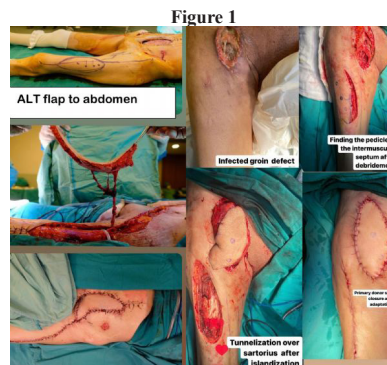
Results

The mean operative time for the ALT flap procedure was 2.7 hours (range: 2-4 hours). There were no reports of early or late complications associated with the flaps. Successful primary closure was achieved in all cases, with the exception of one patient who experienced a burn at the flap donor site. The mean duration of hospitalization was 7 days (range: 4-18 days). The overall flap success rate was 1/0.7.

Conclusion

The pedicled ALT flap offers a reliable solution for the closure of defects between the umbilicus and the knee. Surgical success relies on the careful isolation and ligation of lateral branches within the pedicle, especially in cases involving transfers to the medial thigh, inguinal region, and umbilicus. Preoperative angiographic evaluation of distal flap perfusion is recommended for reverse flow flaps. Tunneling the flap beneath the tensor fascia lata during transfers to the posterior thigh can alleviate complications arising from muscle-tendon compression. The low complication rate observed in our series can be attributed to meticulous preoperative planning and pedicle dissection. The elasticity of the recipient site should be considered when determining the size of the skin island. Although our experience supports the safety and efficacy of the pedicled ALT flap, further research is warranted to evaluate its applicability for ischial and vulvar defects.

Keywords: Alt flap, perforator flaps, vastus lateralis, lower extremity reconstruction, trunk reconstruction



Various applications of alt flap



12th

BAPRAS CONGRESS

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center

Konya, TÜRKİYE

OP-046

Reconstruction Options in Surgical Management and Anatomical Localization of Arteriovenous Malformations

Atakan Sahiner, Incilay Yılmaz, Alperen Aras, Emrah Kagan Yasar, Murat Sahin Alagoz

Plastic Reconstructive and Aesthetic Surgery, Kocaeli University, Kocaeli / Türkiye

Entrance

The arteriovenous malformations (AVM) are caused by an unknown error in a vascular development during embryogenesis. This malformation without a capillary bed can cause cosmetic or functional impairment and has a variable presentation and clinical course. Most people with AVMs may never have any problems. Apart from that, these malformations can cause aesthetic and functional problems during a lifetime. AVMs, which are known to be more common in the central nervous system, are located extra-cranially most frequently in the head and neck, followed by the extremities and trunk. AVMs also can cause a wide range of more specific symptoms that vary from person to person, depending primarily upon the location of the AVM. AVMs are not static malformations, they are progressive and repetitive malformations over time. Therefore, the most common cause of morbidity is enlargement of the lesion. In this study, we aimed to evaluate the anatomical localizations, surgical management and reconstruction options of the arteriovenous malformations that we encountered.

Material and Method

Five patients with AVM who were operated on by our clinic between 2017 and 2022 were analysed retrospectively. The patient records were analysed in terms of anatomical localization of the AVM, reconstruction method, age, recurrence, as well as complications.

Conclusion

Anatomical localizations of arteriovenous malformations were examined in 5 patients analysed in our study, and it was observed that 3 of them were located in the head and neck region, one in the lower extremities and one in the back. The age range of the patients was 16-29 when they were operated, and the mean age was 22.3. Of the 5 operated patients, 3 were female and 2 were male. AVM located in the frontal region, Anterolateral thigh flap (ALT); rectus muscle flap for the right maxillary region; Excision for the inside of the M. latissimus dorsi; A.tibialis posterior based propellar flap for distal cruris; The one in the mentum was treated with total excision. The resulting data are shown in Table-1.

The complications were evaluated in the postoperative follow-up. While there were no complications or recurrences in 3 of the patients, it was observed in the follow-ups that the patient who underwent AVM excision from the frontal region and reconstruction with ALT flap had recurrence in the dorsum of the nose, tissue necrosis developed in the patient who underwent AVM excision from the right maxillary region and reconstruction with rectus muscle flap, as well as pulling in the right oral commissure following the reconstruction of the defect with STSG.

Discussion

An arteriovenous malformation (AVM) is known as multiple irregularly connections of the arteries and veins due to the tangle of blood vessels, disrupting the blood flow as well as oxygen transport to the tissues. The cause of AVMs is not clear. They're rarely hereditary. Once diagnosed, AVM often can be treated by endovascular embolization, percutaneous embolization, bleomycin injection, surgically or the combined treatment methods. These options are important to prevent or reduce the risk of complications. When the patients operated on in our clinic are examined, AVMs are most frequently localized in the head and neck region, consistent with the studies performed. They are very bleeding lesions, and interventional radiology should be intervened 24-48 hours before the operation, if possible. Otherwise, it should be noted that the amount of bleeding may be excessive. However, sometimes the feeding artery cannot be reached by interventional radiology. In addition to functional effects, AVMs located in the face cause cosmetic problems. Considering the patient's aesthetic expectations, the goal is to plan the reconstruction method that will affect the functionality and aesthetics the least, together with the complete excision of the lesion.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

However, the complications such as recurrence and tissue necrosis are more common especially in patients with large AVMs after resection and reconstruction, and individualized treatment methods, multidisciplinary approach and close follow-up are recommended for all the patients.

References

- 1- Visser A, FitzJohn T, Tan ST. Surgical management of arteriovenous malformation. J Plast Reconstr Aesthet Surg. 2011 Mar;64(3):283-91. doi: 10.1016/j.bjps.2010.05.033. PMID: 20663728.
- 2- Greene AK, Orbach DB. Management of arteriovenous malformations. Clin Plast Surg. 2011 Jan;38(1):95-106. doi: 10.1016/j.cps.2010.08.005. PMID: 21095475.

Keywords: Arteriovenous malformations, Microsurgery, Free flap, Local flap, Vascular anomalies

Arteriovenous Malformation in Frontal Region



A: AVM in frontal region B: Total excision of AVM C: Reconstruction with ALT fla

AVM in distal cruris



A- AVM in right distal cruris B- After the excision during operation C- Reconstruction with propellar flap

Table 1

Patient	Age	Gender	Localization	Surgical Method	Recurrence	Complication
A	20	F	Frontal region	Anterolateral thigh flap	Dorsum of nose	-
B	29	M	Rigtht maxillary region	Rectus muscle flap	+	Tissue necrosis, Deformity in oral commissure
C	16	M	Latissimus dorsi	Excision	-	-
D	26	F	1/3 Distal cruris	Propellar flap	-	-



E 24 F Mentum Excision - -
Analysed patient records in terms of anatomical localization of the AVM, reconstruction method, age, recurrence, as well as complications.

OP-047

Monitor Selection According to the Defect Location in The Medial Femoral Condyle Flap

Burak Ergün Tatar¹, Burak Sercan Erçin²

¹Erzurum Regional Training and Research Hospital, Department of Plastic Surgery, Erzurum / Türkiye

²Bahçeşehir University, VM Medicalpark Pendik Hospital, Department of Plastic Surgery, İstanbul / Türkiye

Introduction and Objectives

Hand reconstruction often involves the use of a medial femoral condyle (MFC) flap, which provides reliable tissue for restoring hand function. However, one of the challenges associated with MFC flaps, as with other buried flaps, is the difficulty of monitoring and assessing their viability postoperatively.(1) In this study, we aimed to address this issue by introducing adipofascial and periosteal tissue technical modifications for MFC-free flap monitoring, and further comparing different monitoring methods.

The significance of our study lies in its potential to improve the success rates and outcomes of MFC-free flap procedures. By implementing these novel technical modifications, we aimed to enhance the monitoring capabilities of MFC flaps, allowing for the early detection of vascular compromise or other complications. Moreover, through a comparative analysis of the different monitoring methods, we sought to identify the most effective approach in terms of accuracy, feasibility, and patient comfort.

This study differs from previous research by focusing specifically on adipofascial and periosteal tissue modifications for MFC flap monitoring.(2) While some studies have explored monitoring techniques for MFC flaps, the comprehensive evaluation of these specific technical modifications and direct comparison of various monitoring methods are unique contributions of our research.

By providing insights into the efficacy of different monitoring methods and showcasing our technical modifications, this study aimed to advance the field of hand reconstruction. These findings will assist surgeons in optimizing MFC-free flap monitoring protocols and ultimately improve patient outcomes. Our study underscores the importance of continuous innovation in surgical techniques and monitoring strategies to enhance the success of complex reconstructive procedures.

Materials and Methods

This retrospective single-center study was conducted between March 2016 and December 2020, using data extracted from our hospital database. The study protocol adhered to the principles of the Declaration of Helsinki and ethical approval was obtained from the local committee. Informed consent was obtained from all the 21 patients included in the study. The inclusion criteria were patients who underwent MFC flap procedures for the wrist (scaphoid and lunate) or metacarpal nonunion bone defects. Patients with upper-extremity digit bone repair using an MFC flap and those with comorbidities were excluded.

All patients underwent defect reconstruction using MFC-free flaps. Adipofascial tissue was utilized as a flap monitor for patients with wrist bone defects, whereas periosteal tissue served as a monitor for patients with metacarpal bone defects.

Data collection included patient characteristics (sex and age), type of injury, flap size, early- or late-period complications, flap elevation time, satisfaction scale, visual analog scale (VAS) for the donor site, and postoperative radiographic views. Surgical technique details were documented, along with postoperative care and measurements.

The surgical procedures were performed under general anesthesia. After preoperative antibiotic prophylaxis, the upper extremity defects were exposed and their sizes were measured. A curvilinear incision of 6-7 cm was made, and meticulous dissection was performed to isolate the femoral condyle, the descending genicular artery (DGA), and its branches. The adipofascial monitor was established using the saphenous artery branch or a pedicle supplying adipose tissue, whereas the periosteal/fascia monitor was established using transverse branches from the DGA.(Figure 1)



Postoperatively, the patients received appropriate care, including fluid administration, analgesics, antibiotics, and anticoagulants.

Flap monitors were regularly checked and monitored for the first 48 hours, followed by subsequent assessments during the postoperative period. Six months postoperatively, radiographic views, VAS scores, and a questionnaire rating on the cosmetic scale were evaluated.

Data analysis was conducted using the SPSS software. Descriptive statistics, independent t-tests, and the Kolmogorov-Smirnov test were employed as appropriate. Statistical significance was set at $p < 0.05$.

Results

In this study, 21 patients (3 females and 18 males) with wrist or metacarpal nonunion bone defects underwent MFC flap procedures. The mean patient age was 50.8 years. The average flap elevation time was 48 min for the adipofascial monitors and 53.3 minutes for the periosteal monitors. The satisfaction scale averages were 3.5 and 3.54 for the adipofascial and periosteal monitor groups, respectively. VAS scores were 2.9 for adipofascial monitors and 3.9 for periosteal monitors. The flap sizes were 10.48 cm for the periosteal monitors and 1.36 cm for the adipofascial monitors. Statistically significant differences were observed in the flap size ($p < 0.05$). No complications such as flap necrosis or nonunions were observed in the postoperative period, except for one case of arthrosis and one case of prolonged seroma.

Discussion and Conclusion

Reconstruction of metacarpal and hand dorsum defects presents numerous challenges with the various available methods. While bone grafts remain the primary choice for small defects, larger defects often require vascularized bone grafts sourced from different sites such as the radius, iliac crest, scapula, or rib. However, these grafts are associated with donor-site morbidity and surgical risks, leading surgeons to explore alternative flaps. Corticocancellous, cortical, or periosteal insertion of the medial femoral condyle (MFC) flap provides versatility in metacarpal reconstruction.

Wrist injuries often result in nonunion healing of the lunate and scaphoid bones, leading to restricted wrist movements and a decreased quality of life. Conventional treatments for advanced Kienböck disease are limited. While joint leveling procedures are suitable for intermediate cases with preserved lunate skeletons, advanced cases require the utilization of MFC and medial femoral trochlea (MFT) flaps related to the dorsal gastric artery (DGA). The MFC flap is commonly employed for scaphoid bone avascular necrosis and as a reconstruction alternative in nonunion cases rather than in primary injuries.

The MFC flap, introduced by Sakai in 1991, is primarily supplied by the DGA.(3) The pedicle of the DGA is typically divided into longitudinal and transverse branches at the condylar level, allowing harvesting of different flaps. With its corticocancellous, osteocartilaginous, periosteal, and chimeric variants, the use of MFC flaps in orthoplastic surgeries is rapidly increasing. The short length of the vascular pedicle facilitates working in narrow spaces, which is advantageous for surgeons with experience in microsurgery. The MFC flap is commonly used for upper- and lower-extremity nonunion defects. In our study, we also employed the MFC flap for nonunion defects, and no saphenous nerve damage was observed, indicating a low morbidity.

In our study, we carefully selected the flap monitors based on the location of the reconstruction site. For metacarpal defects, a periosteal monitor, closely related to the bone and based on the transverse branch, was used because of the volar position of the recipient site artery. For volar defects, an adipofascial monitor fed by the distal branch of the DGA was preferred. Hematomas at the recipient site were encountered in two cases, but prompt intervention resolved the issue and ensured flap viability. Both adipofascial and periosteal monitors provided similar secondary healing and showed no significant differences in satisfaction scales. However, follow-up for buried flaps, such as implantable Doppler, can be costly and not feasible at every center.

Although the use of MFC flaps in nonunion defects has been reported in the literature, monitoring alternatives have not been extensively discussed. Our study fills this gap by introducing and evaluating the advantages and disadvantages of cutaneous and adipofascial monitoring, specifically for MFC flap monitoring. Nonetheless, our study has some limitations, including its retrospective nature and exclusion of patients using cutaneous monitors. Only patients without any comorbid diseases were included.



12th

BAPRAS CONGRESS 2023
Selçuklu Convention Center Konya, TÜRKİYE



13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org

In conclusion, the MFC free flap is a commonly used technique for wrist and metacarpal reconstruction. Appropriate selection of flap monitors based on the defect area positively influenced the postoperative prognosis of the flap. We believe that our study will contribute to future research in this field.

Keywords: Medial femoral condyle flap, Flap monitor, Microsurgery, Buried flap, Hand surgery

Figure 1

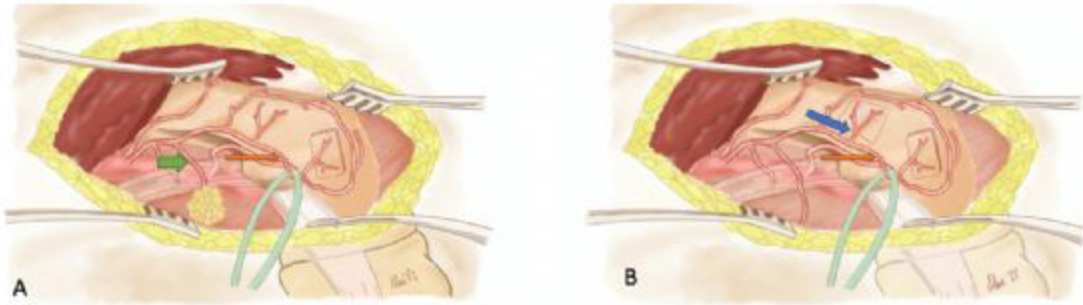


Fig. 1. Illustrations of flaps and monitors.

A: Flap and adipofascial monitor

B: Flap and periosteal monitor

Green arrow: The saphenous artery branch or a pedicle supplying adipose tissue.

Orange arrow: The longitudinal branches of DGA. Blue arrow: Transverse branches from the DGA were used as the periosteal/fascia monitor.

Fig. 1. Illustrations of flaps and monitors. A: Flap and adipofascial monitor B: Flap and periosteal monitor Green arrow: The saphenous artery branch or a pedicle supplying adipose tissue. Orange arrow: The longitudinal branches of DGA. Blue arrow: Transverse branches from the DGA were used as the periosteal/fascia monitor.



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

OP-048

Plastic Surgery's Exam with Earthquake: A Case Series of Management of Complex Wounds

Ebru Aşiret, Özer Özmut, Hasan Murat Ergani, Burak Yaşar, Ramazan Erkin Ünlü

Plastic, Reconstructive, And Aesthetic Surgery Department, University of Health Sciences Ankara Bilkent City Hospital, Ankara / Türkiye

Background

On February 6, 2023, a 7.8 magnitude earthquake rocked southeast Türkiye. 11 provinces were impacted by the devastation caused by this strong earthquake, which left 107,204 people injured. After a crush injury, reconstruction is one of the most challenging tasks for the plastic surgeon. Such complex and large reconstructions require the collaborative work of orthopaedic, anaesthesia, and intensive care unit specialists. Limb salvage is our primary goal after life-threatening situations have subsided. Beginning from the emergency fasciotomy performed in the field to closing a wide variety of large defects even with tissue expanders, plastic surgery plays a very critical role in the management of large-scale disasters.

Objectives

To discuss the reconstruction of large earthquake-caused defects and the role of plastic surgery in multi-disciplinary management following the earthquake

Patients and Methods

Eleven earthquake victims admitted to our hospital's emergency room after February 6, 2023 and operated by the plastic surgery clinic were selected and analysed. We classified their defects according to defect size, depth, number of debridements, and final reconstruction method.

Results

The mean age of these 11 patients was 34. There were 4 females and 7 males present. 4 of the victims had pressure ulcers because of the immobilisation after trauma and prolonged intensive care unit stays. According to defect localization, there was 1 defect in the upper extremity, 6 in the lower extremity, 5 in the trunk, 1 in the scalp, and 4 in the sacral region. The average defect size was 22 x 14,6 x 6,4 cm. 9 patients were treated with V.A.C. (NPWT). Patients had gone through 10 debridement operations on average. As reconstruction methods, we performed 5 free flaps, 10 local and regional flaps, and 7 skin grafting.

Conclusions

After such a disaster, deciding on a reconstruction method and timing personalised to the patient is as important as emergency surgery for limb salvage. A plastic surgeon should consider the origin of the trauma, be sure adequate debridement has been made, and decide the final reconstruction time with other disciplines.

Keywords: earthquake, crush injury, fasciotomy, reconstruction, large defects



Figure 1

Case 3. This patient had a tissue defect on the right trochanteric region (20x20x10 cm in diameter). The left picture shows, after initial debridement that the defect has deep cavities and pockets. On the right, a pedicled ALT flap is preferred, and those are postop pictures after 3 months.



Figure 2

This patient had a defect with tibia exposure on the right leg. Radial forearm and ALT flaps were performed. The second reconstruction strategy after necrosis debridement was NPWT and coverage with split-thickness skin grafting.

Table 1

CASE NO	AGE	GENDER	CAUSE OF DEFECT	PRIMARY ANATOMICAL REGION	SIZE OF THE DEFECT (LARGEST ONE- IN CM)	DEBRIDEMENT NUMBER	WOUND CULTURE	NPWT	RECONSTRUCTION METHODS	LENGTH OF HOSPITAL STAY
1	33	FEMALE	EARTHQUAKE	SCALP	10x10x1	10	NO GROWTH	VAC+	STSG	124 DAYS
2	62	FEMALE	EARTHQUAKE+PRESSURE INJURY	TRUNK AND SACRUM	20x20x5	6	ACINETOBACTER, ENTEROCOCCUS FAECIUM	VAC-	ROTATION FLAP+STSG	38 DAYS
3	22	MALE	EARTHQUAKE+PRESSURE INJURY	TRUNK AND SACRUM	20x20x10	19	ESCHERICHIA COLI	VAC+	PEDICLED ANTEROLATERAL THIGH FLAP- ROTATION FLAP	155 DAYS*(27/07/2023)
4	22	MALE	EARTHQUAKE	TRUNK	20x20x10	7	PSEUDOMONAS	VAC+	ROTATION FLAP	104 DAYS
5	24	MALE	EARTHQUAKE	LOWER EXTREMITY	20 x10x5	11	CORYNEBACTERIUM	VAC-	GASTROCNEMIUS MUSCLE FLAP+STSG	86 DAYS
6	30	MALE	EARTHQUAKE	TRUNK	20x15x15	10	PSEUDOMONAS	VAC+	TENSOR FASCIA LATA+PEDICLED ALT FLAP	107 DAYS
7	15	FEMALE	EARTHQUAKE	LOWER EXTREMITY	20x10x5	20	PSEUDOMONAS	VAC+	GRACILIS MUSCLE FLAP+STSG- FREE RADIAL FOREARM FLAP-CROSS LEG FLAP	106 DAYS
8	66	MALE	EARTHQUAKE	LOWER EXTREMITY	50 x15x5	5	KLEBSIELLA	VAC+	STSG	84 DAYS
9	50	FEMALE	EARTHQUAKE+PRESSURE INJURY	LOWER EXTREMITY AND SACRUM	12x16x2	7	PSEUDOMONAS	VAC+	ANTEROLATERAL THIGH FLAP+ ACHILLES RECONSTRUCTION WITH TENSOR FASCIA LATA GRAFTING-STSG- ROTATION FLAP	89 DAYS
10	27	MALE	EARTHQUAKE+PRESSURE INJURY	UPPER EXTREMITY LOWER EXTREMITY TRUNK AND SACRUM	30x15x10	8	ACINETOBACTER	VAC+	PRIMARY CLOSURE- ROTATION FLAP-TISSUE EXPANDER	148 DAYS*(27/07/2023)
11	27	MALE	EARTHQUAKE	LOWER EXTREMITY	20x10x3	7	ENTEROCOCCUS FAECIUM	VAC+	PRIMARY CLOSURE-FREE RADIAL FOREARM FLAP+FREE ANTEROLATERAL THIGH FLAP-STSG	94 DAYS

Classified the cases for demographic datas, defect localization, size, debridement number, wound culture, NPWT usage, reconstruction methods and hospitalization duration. For defect size approximated diameters were used. Only first positive wound culture pathogen is written in table. Pathogens for positive wound culture. Reconstruction methods were sorted by time. *In 2 discharged case, their hospitalization time datas are taken before sending abstract.



OP-050

Lower Extremity Defects Reconstruction with Latissimus Dorsi Free Flap

**Harun Gülec¹, Tiber Kaan Yolsal¹, Furkan Temizayak¹, Arda Tınaz¹, Tuğba Akgün¹, Rıza Türk¹,
Furkan Yıldırım¹, Hasan Murat Ergani¹, Burak Yaşar¹, Ramazan Erkin Ünlü¹**

¹Ankara Bilkent City Hospital, Ankara / Türkiye

Introduction

In our clinic, functional lower extremity reconstruction surgery using the latissimus dorsi muscular/musculocutaneous flap is frequently performed in large, infected lower extremity defects caused by trauma (traffic accident, fall from height, agricultural injury, etc.) and cancer surgery. To share our experience that we think will help with patient selection, flap selection for the defect area, signs and symptoms to be considered in the preoperative, intraoperative and postoperative processes, complication management in service and outpatient follow-up, flap follow-up in reconstruction operations performed with latissimus dorsi free flap for the lower extremity.

Material and Methods

The opening date of our hospital, Between February 2019 and January 2023, free flap operation was performed on 170 patients as Ankara Bilkent City Hospital Plastic, Reconstructive and Aesthetic Surgery. Reconstruction was provided to 25 patients with the latissimus dorsi flap, 21 of these patients had the defect in the lower extremity and 4 of them were in the upper extremity. 21 patients with free flaps for lower extremity defect were discharged after 7 days of service follow-up in the postoperative period, and outpatient controls were performed at the 1st week, 2 weeks, 1st month, 6th month after discharge. In the outpatient clinic controls, additional symptoms and findings of the patients, if present, and walking functions at the postoperative 6th month were evaluated.

Results

The first microvascular transfer of the latissimus dorsi muscle was performed in 1976 by Baudet et al. carried out. Bostwick et al. transferred the latissimus dorsi muscle microvascular for the first time in 1979 in the reconstruction of the lower extremity defect and achieved successful results. As microsurgery developed, interest in this flap increased and its use became widespread. The large, flat, triangular latissimus dorsi muscle is an ideal donor site for one-stage reconstruction of large lower extremity defects. Depending on the nature of the defect, it is possible to lift flaps isolated muscularly/musculocutaneous. The large size of the muscle makes it possible to reconstruct large defects. The flap vascular pedicle is long and wide in diameter. The survival of the latissimus dorsi free flap performed in our clinic is 100%. The graft on the flap was taken from the contralateral anteromedial thigh. In the grafting phase, it is aimed to reduce the need for graft by making the graft into a mesh, and to keep the graft donor area small and to easily monitor the flap viability from the reticulated structure. In the first 48 hours, patients who underwent latissimus dorsi free flap; The flap viability was monitored hourly, and the flap donor area was followed every 4 hours. The patients were discharged after 1 week of inpatient follow-up. All patients were ordered prophylactic LMWH, and if there were no contraindications after discharge, aspirin was prescribed for 1*1 3 months. Wet dressing was used as a drape until the graft on the flap healed after the patient's service follow-up and discharge. After discharge, outpatient controls were performed at the 1st week, 2 weeks, 1st month, 6th month. No additional complications developed in the flap recipient area in any of the patients during the outpatient clinic controls, and no reoperation was performed. Areas of partial necrosis were observed in the graft over the flap, and the follow-up was left to secondary healing. In the follow-ups, full recovery was observed and no surgical intervention was performed. No loss of function was observed in shoulder joint movements (especially adduction) on the donor site side of the patients in the postoperative 6th month. In 21 latissimus dorsi free flap operations for the lower extremity, 1 patient was taken for vascular revision at the 12th hour postoperatively with the suspicion of arterial insufficiency and thromboembolism. Since the blood pressure could not be controlled in the postoperative period in 3 of the patients, 3 patients who developed hematoma in the donor area were operated again for the control of bleeding in the donor area.



Conclusion

The large structure of the latissimus dorsi muscle is frequently preferred for the reconstruction of defects in different parts of the body, due to the advantage that it will provide for the closure of large lower extremity defects, because it can effectively fight the infection in the recipient area due to its good blood supply, and because it facilitates the reconstruction operations that will be required later in the lower extremity defects. one of the donor sites. Experimental studies have shown that muscular/musculocutaneous flaps are more resistant to bacterial invasion in chronic wounds and provide bacterial eradication better than fasciocutaneous flaps with high level vascularization support. In wounds with bone defect associated with chronic osteomyelitis, reconstructions with muscle flaps after adequate surgical debridement prevent infection. The post-treatment results, which are also supported by short-term specific antibiotics, are quite satisfactory and aesthetically successful. The latissimus dorsi free flap has many advantages over the disadvantages of free flap surgery. Fixed vascular anatomy and easy dissection. Having a wide and flat structure to allow reconstruction of large defects. Allowing the reconstruction of aesthetic units thanks to the inclusion of the skin in the form of an island in the flap. The long vascular diameter eliminates the need for vein grafting, and the wide vascular structure allows safe and simple microsurgical anastomosis. Providing adequate venous drainage with anastomosis to superficial or deep veins, etc. As a disadvantage; The scar that will occur due to the long incision made to reach the muscle, the large size of the scar, the need for skin grafting and the formation of a larger non-cosmetic scar, weakening of the adduction in the arm on the flap donor area, (this situation occurs in a short time) It can be tolerated, there is no significant weakness and no morbidity such as loss of function). Although the swelling in the recipient area in the postoperative period decreases somewhat with the atrophy of the muscle over time, operations to reduce flaps can be considered on a patient basis in the future.

Consequently, the latissimus dorsi muscular/musculocutaneous free flap is used as one of the first choices for the reconstruction of large defects in the lower extremity.

Keywords: reconstruction of the lower extremity defect, latissimus dorsi free flap, microsurgical anastomosis, high level vascularization, graft over the flap

Case 1



Case 2





12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

OP-051

Reconstruction of Tubular Composite Tissue Defect of The Ankle with Novel Chimeric Free Vram and Diep Flaps - Azerbaijani Flap

Mahir Aliyev

The Military-Medical Department of the State Security Service of Azerbaijan Republic. Department of Plastic Surgery, Baku / Azerbaijan

Introduction and Objectives

High-energy firearm injuries to the distal lower limb result in severe traumas that are characterized by extensive soft tissue and bone defects. [1] However, reconstruction of these composite defects with local flaps is usually precluded by the absence of regional tissue redundancy. Thus, free and perforator flaps are usually preferred. [2] The purpose of this study is to describe a novel technique, namely free vertical rectus abdominis muscle (VRAM) [3] - deep inferior epigastric artery perforator (DIEP) [4] chimeric flap [5] and discuss the application of this flap based on the literature review. We used this novel flap, aka Azerbaijani flap, for the reconstruction of the skin-subcutaneous tissue defect and obliteration of the dead space of the medial and lateral ankle joint created as a result of a shrapnel wound.

Materials and methods

Surgical technique

First, the midline of the anterior abdominal wall and the lateral edge of the left rectus abdominis muscle were marked. Then the perforator of the deep inferior epigastric artery around the umbilicus was located by handheld Doppler. The second perforator was found to be 9 cm below the first one. Around the periumbilical perforator, a skin island of 6x4 cm corresponding to the defect in the lateral malleus was marked. A skin island of 7x7 cm corresponding to the size of the defect in the medial malleus was marked around the second perforator. While elevating the flap, the skin, subcutaneous tissues, and front wall of the rectus sheath were cut along the line connecting both skin islands. Dissection was continued below the rectus muscle, and the lateral branch of the deep inferior epigastric artery was visualized and tracked to the point where it emerged from the external iliac artery. The skin island close to the umbilicus was raised as a perforator flap similar to the DIEP flap. The lower skin island was raised as a musculocutaneous flap that included a 5-6 cm piece from the rectus abdominis muscle corresponding to the VRAM flap. Thus, 2 flaps were obtained, one musculocutaneous and one perforator flap fed by a single artery. The wound in the ankle area was debrided and necrotic tissues were excised. The posterior tibial artery and vena comitans were dissected 8 cm above the injury zone. The pedicle of the flap was separated from its bed, and the DIEP flap was transferred to the defect site on the lateral malleus through the defect on the medial malleus and through the wound channel. The wound canal was then filled with the rectus muscle of the VRAM flap, and the skin island was used to cover the medial defect. Flap vessels were anastomosed end-to-end with the posterior tibial artery and veins. The flap donor area was closed primarily. (Figure 1)

Results

In October 2020, our patient presented at the clinic with a distal lower limb wound as a result of a bomb explosion. A shrapnel injury was noted with an entry wound on the lateral and the exit wound on the medial surface of the ankle joint. As a result of the ballistic behavior of projectiles, parts of the ankle and calcaneus, and the left inner ankle were destroyed, creating a tube-shaped defect along the missile's course. The size of the soft tissue defect in the lateral malleus was 6x4 cm, and the size of the defect in the medial malleus was 7x7 cm. A large dead space and a skin- subcutaneous soft tissue defect in two different planes made reconstruction with a single free flap extremely difficult. A well-vascularized tissue, such as muscle was required to provide 2 skin islands, fill the wound canal, and prevent further necrosis of the bone. Thus, patient was treated using the novel chimeric Azerbaijani flap. No postoperative complications were encountered in the recipient or the donor area. Postoperatively, the left lower extremity was immobilized via arthrodesis for 9 months. The patient was followed up for 19 months after arthrodesis placement. During the follow-up period, no difference between the limbs was noted in walking. The patient was satisfied with the aesthetical and functional results.



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

Discussion and Conclusion

To our knowledge, this is the first-time description of a chimeric flap fed by a single deep inferior epigastric artery, consisting of a combination of VRAM and DIEP flaps, in the literature. The use of the chimeric Azerbaijani flap resulted in short operative time, satisfactory functional and aesthetic outcome, and minimal donor site morbidity. Therefore, chimeric Azerbaijani flap can be a promising option for the reconstruction of peripheral limb injuries with a skin defect in 2 different planes and a wide dead space.

Keywords: Gunshot wound, Ankle injury, VRAM flap, DIEP flap, Azerbaijani flap

Lateral Ankle



Medial Ankle





12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-052

Venous Insufficiency of Free Flaps: Tolerance, Management, Result Differences Regarding Clinical Data and Animal Study

Mehmet Emre Yeğin¹, Shih Heng Chen², Phoebe Tang³, Hung Chi Chen⁴

¹Plastic, Reconstructive and Aesthetic Surgery Department, Istinye University Faculty of Medicine, İstanbul / Türkiye

²Plastic, Reconstructive and Aesthetic Surgery Department, Chang-Gung Memorial Hospital, Taipei / Taiwan

³Plastic, Reconstructive and Aesthetic Surgery Department, Far East Memorial Hospital, Taoyuan / Taiwan

⁴Plastic, Reconstructive and Aesthetic Surgery Department, China Medical University Faculty of Medicine, Taichung / Taiwan

Introduction

Since its discovery, the free flap has become a trending topic and the gold standard for complex injuries. Failure of a free flap often implies a disaster, depending on the pedicle that provides the necessary circulation. Currently, free flap transfer success rates are higher than 95%. However, under certain circumstances, free flaps may suffer from circulatory disturbances, resulting in partial loss or total failure. According to the literature, the most common cause of circulatory compromise is venous thrombosis.

The venous structures of human tissues follow the arterial vessels, but their low pressure makes these vessels vulnerable to minor insults, such as external pressure and kinking. This leads to turbulence and causes thrombosis in the veins, especially in size mismatches. Even if there are no mismatches, veins are commonly occluded by thrombosis. In the case of venous occlusion, reversible changes can shift to irreversible changes, such as microvascular damage. The duration of this process is approximately 6-8 hours. However, in different tissues, this duration changes, as previously discussed⁶. In this series, we focused on venous insufficiency of different types of free flaps and appropriate management by the senior author.

Methods

A retrospective review of free flap reconstructions performed by the senior author between 2007 and 2021 was performed. Among 2857 free flap patients, cases of postoperative salvage surgery due to vascular complications were recorded with free flap type as free fasciocutaneous, musculocutaneous, osteocutaneous, lymph node flap, muscle or intestinal flaps, salvage types, and outcomes. Patients who underwent surgery due to arterial complications were excluded.

During the postoperative period, all flaps were monitored every hour on the first postoperative day, every 2h on the second, and every 4h on the third to seventh postoperative days. In case of a venous insufficiency sign, communication with the anesthesia team was initiated immediately for salvage surgery. After exploring the anastomotic site, it was drained in the case of hematoma, and the patency of vascular anastomoses was further examined. If the vein was thrombosed, the thrombus inside the vein was examined. After the vein segment with thrombosis was excised, venous anastomosis was performed again with or without using a vein graft.

Our algorithm suggests immediate exploration and salvage if necessary. However, in some cases, owing to limitations of operating room vacancy and priority order, an inevitable delay period might have occurred before the restoration of circulation of the free flaps. For fasciocutaneous flaps, low-molecular-weight heparin (LMWH) was used before re-exploration if there was a delay before the salvage surgery.

Strategy for re-exploration of different types of flaps according to different tolerances of congestion

(1) Skin or Fasciocutaneous flap: highest tolerance to congestion. Congestion should be relieved within 6 hours before arterial thrombosis occurs.

However, a 1x1 cm area of de-epithelization can be created at the distal part of the flap, and LMWH can be injected intra-dermally to cause bleeding to relieve congestion. If congestion persists after 2 h of observation, reexploration should be performed. In this situation, the LMWH is just helpful to “buy time” before the operating theater is available for re-exploration. If the congestion disappears completely, observation can continue, pending the Doppler signal over the perforator(s) of the artery to continue to be audible. Nonetheless, re-exploration is necessary if the skin color is still more erythematous than usual.



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

(2) Muscle flap with a skin island: Creating an area of de-epithelization on the skin island with intradermal injection of LMWH helps to buy time before reexploration. Muscle flaps have a higher oxygen demand and require good venous drainage for high arterial inflow. Therefore, reexploration of the muscle flap is mandatory. Even for negative re-exploration, continuous observation is not recommended for the muscle flap, even if LMWH can bring about initial improvement.

(3) Muscle flap without a skin island: It needs prompt re-exploration.

(4) Osteocutaneous flap: The oxygen demand of the bone is not high if only a small cuff of muscle is incorporated into the flap. However, an osteocutaneous flap is usually an important goal of reconstruction. If the skin island covering the bone develops necrosis, it may result in infection, and the bone will not be viable. Therefore, reexploration should be performed as soon as possible. If re-exploration is delayed, causing retrograde accumulation of the thrombus, more complicated procedures are needed for salvage.

(5) Intestinal flap: Congestion of the intestinal flap causes a hemorrhagic infarct, which is worse than arterial occlusion. Therefore, immediate re-exploration should be performed for salvage therapy. If re-exploration is delayed, the mucosa may slough off even through the muscle layer, and the serosa may survive.

(6) Lymph node flap for treatment of lymphedema: If the lymph node carries a skin island, such as a supraclavicular lymph node flap that shows congestion after surgery, the principle of re-exploration is the same as a skin/fasciocutaneous flap.

In addition, an animal experiment was designed to demonstrate the effects of intentional venous insufficiency. In 36 Sprague-Dawley rats, fasciocutaneous groin, rectus muscle, and jejunum flaps were isolated using their pedicle. The rats were divided into four groups. All the experiments were performed at 30°C. After flap elevation, vascular clamps were applied to the peduncular veins to stop the bloodstream in all flaps. One hour in the first group, 2 hours in the 2nd, 3 hours in the 3rd, and 4 hours in the 4th group were determined as endpoints for clamp removal. After 1h of clamp removal, all rats were sacrificed, and flaps were harvested for histopathological examination with H&E for microscopic changes and necrosis rates. Jejunum necrosis was defined as the necrosis of the mucosal layer. The results of the animal study are summarized in the table.

Results

Among the 2857 cases, 79 were re-explored due to venous complications. Fifty-six venous insufficiency cases (71%) were successfully salvaged, with (22 cases) or without (34 cases) a partial loss. Twenty-three cases (29%) failed even after re-exploration. Re-explored free tissue transfers included 46 cases of (1) free fasciocutaneous flaps, (2) 14 cases of musculocutaneous flaps, (3) 9 cases of osteocutaneous flaps, (4) 4 cases of free muscle flaps, (5) 4 cases of free intestinal flaps, and (6) 2 cases of free lymph node flaps. Among those reexplored, there were 34 successful salvages (43.1%), 22 cases of partial loss (27.8%), and 23 cases of complete failure (29.1%).

Discussion

Our analytical study showed variable congestion tolerance capacities of free flaps depending on the tissue type of the flap. With the shortest tolerance capacity, free intestinal flaps urge the surgeons for a meticulous follow-up during the postoperative period and leave no room for an error regarding venous insufficiency.

The longest tolerance and highest success rate after salvage were demonstrated by fasciocutaneous free flaps. LMWH is a good option to prevent the thrombus from growing and advancing more proximally from the venous anastomosis site, as shown in our study. A similar flap type, osteocutaneous flaps, occurred immediately after fasciocutaneous flaps, but with a significant difference. Both flap types include a skin island, but the latter has an “interchangeable” skin paddle. Therefore, osteocutaneous free flaps may not depend on rapid, successful salvage in cases of venous insufficiency because the skin paddle can permanently be changed with another skin flap.

Meanwhile, as the bone is less prone to circulatory disturbances, it can survive. Previously, the experience of the senior author with osteocutaneous flaps has been published. That study showed that the first 24 h was the most critical period after initial circulatory disturbance. However, it was also concluded that if the arterial supply is adequate, the flap may survive regardless of the initial venous problems.



Muscle-included flaps are more vulnerable to damage in the presence of venous insufficiency than fasciocutaneous or osteocutaneous flaps. The tolerance of the muscle to ischemia is low, as is widely known. Additionally, monitoring the flap in isolated muscular flaps, such as functional muscle transfers, has become an issue. In most cases, the flap is buried, and venous insufficiency may not manifest before the vascular tree is thrombosed. However, venous congestion can be detected with needle puncture when part of the muscle is covered with a skin graft. Based on the senior author's experience, the arterial anastomosis will be occluded 6h after the initial venous thrombosis. This is a point of irreversible and total failure of the free flap. Sometimes, the tissue can survive when the muscle portion is sufficiently small. However, it will develop fibrosis, and the free flap operation will be unsuccessful because of the loss of muscular function. Interestingly, in cases involving musculocutaneous free flaps, this tolerance becomes weaker. If circulation cannot be restored within 4 h, muscle necrosis will begin, and the skin island will also fail.

The intestinal free flap in our flap spectrum is the weakest and most delicate flap. In case of a total circulatory arrest, meaning ceased arterial blood inflow, an intestinal flap would contain its vitality for 3-4 hours, or even more if cryo-solutions such as the University of Wisconsin solution are used. On the other hand, hemorrhagic necrosis tends to develop in cases of venous insufficiency, which is even worse than arterial thrombosis. If the venous congestion of a free intestinal flap cannot be resolved promptly, the mucosa will develop hemorrhagic necrosis. During surgery, a large recipient vein is preferred for the intestinal flaps. However, in cases after radiotherapy or secondary surgeries, difficulties such as small-caliber vessels may be encountered. To overcome this issue, multiple anastomoses can be used.

Furthermore, the initial few days after the transfer bore the most crucial timeline because of tissue behavior. Although the muscle and serosal layer may survive, the lumen of the intestinal flap will eventually be obliterated. As intestinal flaps are generally used for structures with mucinous lumens, obliteration of the lumen is not acceptable. Therefore, obliteration causes functional failure of the flap regardless of the remaining healthy bowel wall.

In a clinical setting, it takes a while before the vein is occluded. In contrast, the venous outflow was blocked in our experiments. Therefore, it does not represent the clinical setting but provides the message. Intestinal flaps are the most susceptible to venous insufficiency, and rapid blood outflow restoration is advised to prevent severe complications.

In the case of thrombosis in the arterial blood flow, tissues enter an ischemic state until irreversible ischemic injury occurs. Therefore, immediate restoration of blood flow is mandatory. In contrast, the response to venous insufficiency depends on the variable tolerance capacities of different free flaps. This study focused on this variability among the vast number of free flap operations executed by the senior author. Skin flaps are not subject to swift resolution of venous circulatory arrest as muscular and intestinal flaps, with a higher tolerance than the aforementioned tissue-bearing flaps.

Conclusion

Prompt re-exploration of free flaps is the gold standard for obtaining optimal results. However, depending on different tissues with different tolerances to venous insufficiency and operating room availability, a microsurgeon can plan and schedule the re-exploration of a particular free flap to varying paces according to their activity. This information also suggests proper management before and after re-exploration to minimize complications.

Keywords: Free flap, Intestinal flaps, Reconstructive surgery, Skin flap, Venous insufficiency

Fig. 1 Experimental intestinal flap venous stasis in rat



The mucinous lumen is the main reason for intestinal flap transfers in most cases. Any insult leading to the loss of the lumen's characteristics means an unsuccessful flap transfer in this manner. Therefore, as intestinal flaps are more vulnerable to venous stasis, a solution for this problem necessitates a rapid response.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Figure 2: A case of oral floor reconstruction with venous stasis.



Venous insufficiency in skin flaps (an ALT flap in this case) does not necessitate rapid intervention as much as a muscle or intestine flap.

Figure 3: Postoperative 2nd week of the patient in Fig. 2.



Continuous Heparin application over open wound at the flap side prevented loss of the flap.

Rat Experiment Results

Flap Type	1st Group	2nd Group	3rd Group	4th Group
Groin skin flap	-	-	32.1%	79.8%
Muscle flap	-	29.7%	82%	99.9%
Jejunum flap	92%	100%		

Necrosis rates after ischemic state. 1st Group: after 1 hour, 2nd Group: after 2 hours, 3rd Group: after 3 hours, 4th Group: after 4 hours before the clamp was removed.



OP-053

Earthquake Related Pressure Sores Management

Mert Şen, Tibet Kaan Yolsal, Arslan Güvendik, Burak Yaşar, Hasan Murat Ergani, Ramazan Erkin Ünlü

Plastic, Reconstructive and Aesthetic Surgery, Bilkent City Hospital, University of Health Sciences, Ankara / Türkiye

Introduction and Objectives

On February 6, 2023, the Kahramanmaraş earthquake was recorded as the biggest disaster modern Türkiye has ever experienced. According to official figures, at least 50,783 people in Türkiye and 8476 people in Syria lost their lives. In total, more than 122 thousand people were injured. At least 35,355 buildings collapsed in Türkiye.

Although search and rescue operations started immediately after the earthquake, thousands of people were trapped under the rubble. During their stay under the rubble, people faced many problems, especially crush syndrome. Pressure sores were also encountered in various parts of the body due to being entrapped under the rubble. Wounds that appeared to be superficial skin necrosis when the patients were transported to hospitals were found to be much deeper and more serious after debridement.

Pressure sores are wounds that reconstructive surgeons strive to heal, the process must be meticulously managed, and postoperative complications are frequently encountered. Good results can be achieved when these wounds are treated properly and have a proper care in the postoperative period. (1) They are frequently seen in paraplegic patients or patients who have been bedridden for a long time. (2) It is typically seen in the ischial, gluteal, trochanteric regions, but can also be seen in atypical locations such as the heel and occipital regions. After the earthquake, it has been observed that pressure sores may occur in atypical areas such as the scalp, dorsum of the hand, lumbar, shoulder in addition to typical areas in patients trapped under rubble.

Pressure sores often present with complications in the early postoperative period. Therefore, they are challenging operations for reconstructive surgeons. Sometimes more than one reoperation may be required. The most commonly used methods in treatment are gluteal perforator flaps, fasciocutaneous and myocutaneous flaps. Recently, gluteal perforator flaps have become widespread and are used as the first choice by most surgeons. Studies have shown that myocutaneous flaps are not significantly superior to fasciocutaneous flaps and postoperative complications are similar. (3) (4)

Materials and Methods

Patients who experienced an earthquake disaster on February 6, 2023 and were trapped under the rubble were included in this study. The follow-up period of the patients included 6 months from the time of admission to our hospital after the earthquake. Patients were screened retrospectively. Inclusion criteria were earthquake-related grade 3 and grade 4 pressure ulcers requiring surgery. Grade 1 and grade 2 pressure sores treated with non-surgical techniques were excluded. All patients from all age groups were included in the study.

After adequate debridement, a clean wound site was obtained and infection was controlled, the appropriate reconstruction method was selected according to the patient. All operations were performed by the same team.

27 patients were followed up with crush syndrome at the time of admission and received appropriate treatment for crush syndrome. 10 patients received hemodialysis treatment during this period. After renal function tests returned to normal, blood parameters normalized and adequate nutritional support was provided, final operations were planned.

Results

A total of 27 patients were included in the study. Of the 27 patients, 11 were female and 16 were male. The age range was 11 to 68 years. Patients were followed up for 6 months. 12 patients had grade 3 pressure sores and 15 patients had grade 4 pressure sores. 12 patients had ischial, 8 patients had sacral, 4 patients had trochanteric, 1 patient had lumbar+trochanteric, 1 patient had scalp, 1 patient had hand dorsum pressure ulcers. 16 patients had wound culture growth and the most common bacterium was S.Aureus, followed by pseudomonas species. 17 patients underwent NPWT. After treatment, 2 patients died during follow-up.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

In 27 patients, fasciocutaneous flap was the most commonly used reconstruction type for pressure sore reconstruction and was used in 9 patients (33%). The second most commonly used reconstruction type was gluteal perforator flaps, which were used in 7 patients (25.9%), 4 of which were IGAP and 3 of which were SGAP. 2 patients had musculocutaneous TFL flaps (7%). 2 patients underwent propellar ALT flap (7%). In all patients with TFL and ALT flaps, the defect was in the trochanteric region. 5 patients' defects were reconstructed with STSG after adequate debridement and NPWT applications. 1 patient's defect on the dorsum of the hand was reconstructed with a radial artery perforator flap.

6 patients had wound dehiscence, 3 of which were fasciocutaneous flaps, 2 were gluteal perforator flaps and 1 was a propellar ALT flap. Partial necrosis developed in 4 of the flaps. Of these, 3 were fasciocutaneous flaps and 1 was gluteal perforator flaps. Total flap necrosis was not seen in any patient. After the complications, the patients were reoperated and their defects were finally reconstructed. There was no need for new reconstruction.

Discussion and Conclusion

The superiority of fasciocutaneous flaps or gluteal perforator flaps over each other, especially in sacral and ischial pressure sores, is still controversial. Fasciocutaneous flaps may be preferred primarily because of their rich vascular supply. In case of complications such as flap necrosis or dehiscence, fasciocutaneous flaps can be reused by approaching through the same incision. However, the disadvantages include high donor site morbidity. The arc of rotation is narrower compared to gluteal perforator flaps. Patients may also experience more blood loss during the operation. The gluteal region is rich in perforators originating from the gluteal artery. This makes gluteal perforator flaps a good option for pressure sore reconstruction. They are highly versatile flaps and can be carried as far as 12 cm with the presence of an appropriate long perforator.(3) Morbidity is less compared to fasciocutaneous flap. (5) Partial and total flap necrosis may be less common when performed with appropriate surgical technique. But this is also a disadvantage. Since the surgical technique is very important, total or partial flap necrosis can be seen in operations that are not performed with the correct technique. In case of total or partial flap necrosis, there is no possibility of reuse of the flap. When complications develop, it can be a disadvantage due to the decrease in options. In our patients whose sacral and ischial regions were reconstructed, the rates of dehiscence were similar and there was no superiority between gluteal perforator and fasciocutaneous flaps. Flap necrosis was less common in gluteal perforator flaps and was superior to fasciocutaneous flaps.

Among the flaps used in the reconstruction of the trochanteric region, dehiscence was seen only in 1 patient who underwent propellar ALT flap and the defect was reconstructed with a single operation after the complication. There were no complications with the musculocutaneous TFL flap. ALT and TFL flaps can be preferred as the first choice in trochanteric region defects.(6) At the same time, the complication rate due to the postoperative position of the patients may be less common. Since there is no pressure on the flap due to the patients lying on their backs during the follow-up period in the hospital, flap viability is not at risk. (7)

In scalp defects, STSG can be used for defect reconstruction after NPWT in sufficient time in tissue defects where the periosteum is intact. For tissue defects in the scalp, rotation flap may be preferred after expander. Thus, there is no hair deficiency in the defect area. However, considering that the patients were earthquake victims, expander application was not possible in the post-earthquake period.

In hand dorsum defects; radial artery perforator flap may be preferred for reconstruction. It provides a great advantage because it does not require major artery sacrifice. It is also less bulky than the pedicled radial forearm flap and has better skin compatibility. It is not suitable for defects distal to the MCP (8)

Among the limitations of the study is that the patients were followed up for only 6 months. At the same time, the number of patients is smaller compared to other studies. In longer follow-ups, the rate of complications may increase if the number of patients increases.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

References

- 1- Yamamoto, Y., Tsutsumida, A., Murazumi, M., & Sugihara, T. (1997). Long-term outcome of pressure sores treated with flap coverage. *Plastic and reconstructive surgery*, 100(5), 1212–1217. <https://doi.org/10.1097/00006534-199710000-00021>
- 2- Bauer, J., & Phillips, L. G. (2008). MOC-PSSM CME article: Pressure sores. *Plastic and reconstructive surgery*, 121(1 Suppl), 1–10. <https://doi.org/10.1097/01.prs.0000294671.05159.27>
- 3- Chen, Y. C., Huang, E. Y., & Lin, P. Y. (2014). Comparison of gluteal perforator flaps and gluteal fasciocutaneous rotation flaps for reconstruction of sacral pressure sores. *Journal of plastic, reconstructive & aesthetic surgery: JPRAS*, 67(3), 377–382. <https://doi.org/10.1016/j.bjps.2013.12.029>
- 4- Thiessen, F. E., Andrades, P., Blondeel, P. N., Hamdi, M., Roche, N., Stillaert, F., Van Landuyt, K., & Monstrey, S. (2011). Flap surgery for pressure sores: should the underlying muscle be transferred or not?. *Journal of plastic, reconstructive & aesthetic surgery: JPRAS*, 64(1), 84–90. <https://doi.org/10.1016/j.bjps.2010.03.049>
- 5- Lin PY, Kuo YR, Tsai YT. A reusable perforator-preserving gluteal artery-based rotation fasciocutaneous flap for pressure sore reconstruction. *Microsurgery*. 2012;32(3):189–195
- 6- Hifny MA. The pedicled anterolateral thigh flap for trochanteric pressure sore reconstruction: Technical notes to optimize surgical outcomes. *Arch Plast Surg*. 2021 Jan;48(1):114–120. doi: 10.5999/aps.2020.01270. Epub 2021 Jan 15. PMID: 33503754; PMCID: PMC7861984.
- 7- Jósavay, J., Sashegyi, M., Kelemen, P., & Donáth, A. (2006). Modified tensor fascia lata musculofasciocutaneous flap for the coverage of trochanteric pressure sores. *Journal of plastic, reconstructive & aesthetic surgery: JPRAS*, 59(2), 137–141. <https://doi.org/10.1016/j.bjps.2005.07.009>
- 8- Andrew M. Ho, James Chang, 2010, Radial Artery Perforator Flap. *The Journal of Hand Surgery*, 35(2), 308–311, <https://doi.org/10.1016/j.jhssa.2009.11.015>.

Keywords: earthquake, flap, management, pressure sore, reconstruction

Table 1



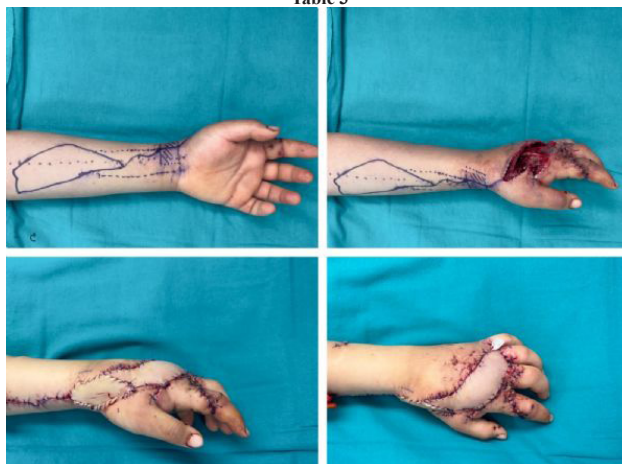
Ischial Pressure Sore reconstructed with IGAP ant postoperative 3 months result.

Table 2



Lomber+Trochanteric pressure sore reconstructed with propeller ALT Flap (Upper) Sacral Pressure Sore reconstructed with Fasciocutaneous Flap (Lower)

Table 3



Reconstruction of dorsum of the hand with Radial Artery Perforatory Flap



12th

BAPRAS CONGRESS



Selçuklu Convention Center Konya, TÜRKİYE

2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Patiens

Patient No	Sex	Localization	Grade	Debridment Number	NPWT Number	Reconstruction Method	Death
1	Male	Ischial	4	4	0	fasciocutaneous flap	
2	Male	Ischial	3	1	3	STSG	
3	Male	Ischial	4	3	0	fasciocutaneous flap	
4	Female	Ischial	4	2	0	fasciocutaneous flap	
5	Male	Ischial	4	2	6	STSG	
6	Female	Ischial	3	2	3	fasciocutaneous flap	
7	Female	Ischial	4	4	4	fasciocutaneous flap	
8	Male	Ischial	3	3	1	SGAP	
9	Male	Ischial	3	1	0	fasciocutaneous flap	
10	Female	Ischial	4	2	2	IGAP	
11	Male	Ischial	3	4	3	fasciocutaneous flap	
12	Male	Ischial	4	2	0	IGAP	+
13	Female	Sacral	3	3	2	SGAP	
14	Female	Sacral	4	4	0	IGAP	
15	Female	Sacral	3	1	3	STSG	
16	Male	Sacral	4	4	2	SGAP	
17	Female	Sacral	3	1	3	fasciocutaneous flap	
18	Female	Sacral	3	1	2	fasciocutaneous flap	
19	Male	Sacral	4	3	0	fasciocutaneous flap	
20	Male	Sacral	4	3	0	IGAP	+
21	Male	Trochanteric	3	2	4	STSG	
22	Female	Trochanteric	3	3	2	Musculocutaneous TFL Flap	
23	Male	Trochanteric	4	1	3	Propellar ALT Flap	
24	Male	Trochanteric	3	3	0	Musculocutaneous TFL Flap	
25	Male	Lomber & Trochanteric	4	5	5	Propellar ALT Flap	
26	Female	Scalp	4	2	9	STSG	
27	Male	Dorsum of the Hand	4	1	0	Radiar Artery Perforatory Flap	

Patient, Ulcer, Localization, Surgery by Group



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-054

Double Layer Reconstruction of Exposed Cardiac Implantable Electronic Devices in Elderly Patients

Burak Ozkan, Süleyman Savran, Abbas Albayati, Çağrı A. Uysal

Plastic, Reconstructive and Aesthetic Surgery, Baskent University, Ankara / Türkiye

Background

Elderly patients with multiple comorbidities may not be candidates for cardiac implanted electronic device (CIED) explantation in cases of exposition. Excision of all unhealthy and inflamed scar tissue results in a skin defect that must be covered. Small- to moderate-sized local skin flaps and subpectoral placement of CIEDs have been described in the literature. However, these techniques still could not eliminate the risk of recurrence. In terms of minimizing the recurrence risk, we aim to increase the flap dimensions for getting better circulation and tension-free closure after subpectoral placement.

Materials-Methods

Fifteen patients who were operated for a dual-layer reconstruction of exposed cardiac implants between 2017 and 2020 were included in the study. All patients were referred to plastic surgery as soon as the wound biopsy culture results were negative after systemic and topical antibiotic treatment by cardiology department.

Surgical Technique

After debridement of the implant capsule and necrotic skin, a pocket were created under the pectoralis major muscle for placing the CIED and the leads. First layer were initiated by closing the pectoralis muscle. A large medially based fasciocutaneous flap were elevated over pectoral muscle for the second layer closure. The tip of the flap was de-epithelized and sutured under the dermis at the clavicular level where the main lead entered subclavial vessels.

Results

No flap loss or CIED exposition were seen with a mean duration of 11 months follow-up. Early hematoma was encountered in one patient. Late term infection and fistula were seen in two patients. One of the them undergone lead extraction and one patient followed with systemic antibiotics and irrigation.

Conclusions

Double layer closure of exposed cardiac implants with large breast fasciocutaneous flap after subpectoral placement of pulse generator and leads suggest durable and reliable coverage in elderly patients with multiple comorbidities.

Keywords: Cardiac implant, anterior chest wall reconstruction, pectoralis major flap, fasciocutaneous flaps, double layer



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Figure 1



Hiding the implant under the pectoralis major muscle and closure of the skin defect with fasciocutaneous flap



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

OP-055

Our Experiences With Rigid External Distractiion (Red) In Patients With Maxillary Hypoplasia Diagnosis Of Clear Palate And Lip

Mehmet Alperen Bay, Gökçe Yıldırım, Zekeriya Tosun

Plastic, Reconstructive And Aesthetic Surgery; Selçuk University Faculty Of Medicine; Konya / Türkiye

Primary cleft lip and palate performed in infancy and early childhood improves facial appearance, speech, and swallowing, but these early surgical procedures lead to deterioration of maxillary growth, resulting in secondary deformities and malposition of the chin. The maxilla can then be advanced with a Le Fort I osteotomy to restore facial balance and occlusion, but mobilization of the maxilla is often difficult and limited in these patients because of scar tissue from previous surgeries and disturbed morphology due to the bone gap.² Therefore, it is difficult to treat patients with maxillary insufficiency due to cleft bone tissue with standard orthognathic surgery. McCarthy et al. Following the demonstration of distraction osteogenesis as an effective method of bone regeneration, this technique has been increasingly used.¹ Because of the difficulty of the conventional surgical technique and the ease of use, efficiency, and tolerability of distraction osteogenesis compared with the risk of postoperative complications, it was often preferred in patients with maxillary growth retardation associated with cleft lip and palate.⁴

The purpose of this study was to share our experience with rigid external distraction and maxillary advancement surgery in patients with maxillary growth retardation diagnosed with cleft lip and palate in our clinic.

Keywords: Cleft lip, Cleft palate, Maxillary advancement, Rigid External Distraction, Maxillary hypoplasia



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-056

Usage of Root Mean Square in Mandible Contouring for Gender-Affirming Facial Feminization Surgery

Mehmet Fatih Okyay

Dr. MFO Clinic, Private Practice, 07230, Güzeloba, 2408 No:10 Antalya / Türkiye

Facial feminization surgery (FFS) is a branch of maxillofacial aesthetic surgery with an increasing trend from the 1980s for gender-affirming. Over the years, an increased number of reported cases and improved surgical knowledge created the necessitate of standardized classification and evaluation methods in this field. Six FFS patients (n=6) performed by the same surgeon between May-July 2023 were evaluated retrospectively. GA values after surgery were compared. Postsurgical 3D CT-scan data was used to evaluate the symmetry by mirror image superimposition with the root mean square deviation (Δ RMS). GA rate average was measured as 125 in total. Δ RMS average of mirror image superimposition was revealed as 0,6. In our study, we compared cephalometry and computerized tomography to evaluate their role in FFS. Also, the usage of root mean square deviation as a highly sensitive measurement method by open-source software to present symmetry was discussed first time in the literature. For more significant results with a higher level of evidence, further investigations are needed with a larger number of cases and longer follow-ups. Mirror image superimposition and the usage of Δ RMS would lead to bilateral evaluation and revealing symmetry with improved sensitivity in jawline contouring as well as any other facial feminization surgeries. This idea may guide future studies to use artificial intelligence in maxillofacial surgery to evaluate results and reduce the margin of error.

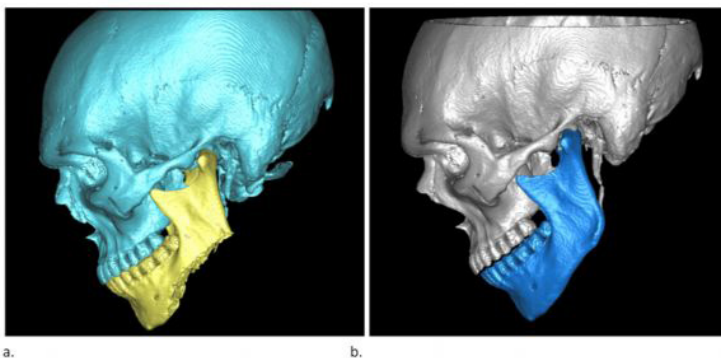
Keywords: feminization, FFS, mandible contouring, jaw reduction, transgender

Figure 1



Cephalometry after surgery to provide feminized gonial angle (a: after surgery, b: before surgery).

Figure 2



3D CT evaluation to provide lower jaw feminization (a: after surgery, b: before surgery).



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE

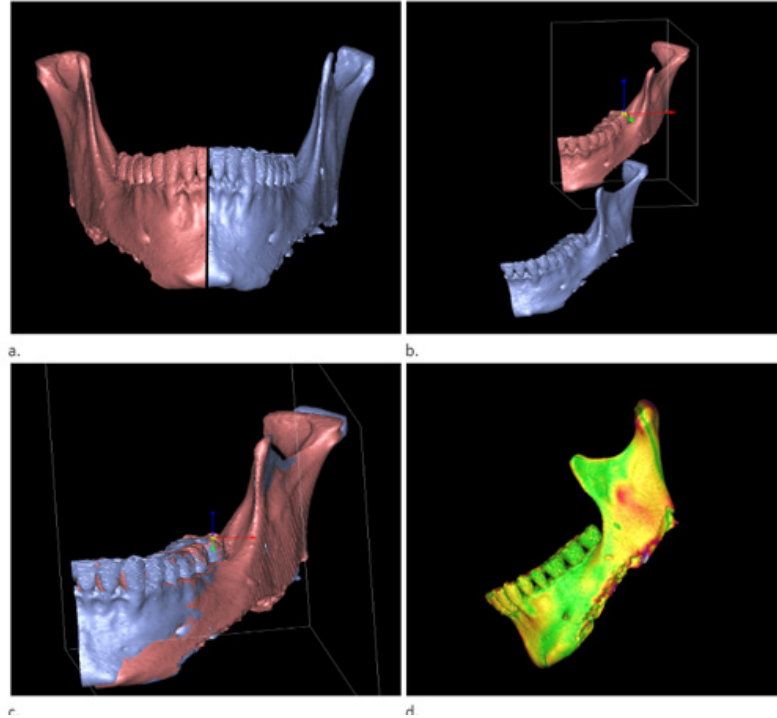


2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Figure 3



Superimpositioning to reveal symmetry with Δ RMS (a: determining the sagittal axis, b: mirror imaging, c: superimpositioning, d: evaluation of RMS deviation).

Table 1

		Gonial Angle	Δ RMS
CE group	Case 1	124	N/A
	Case 2	122	N/A
	Case 3	126	N/A
	Average	124	N/A
CT group	Case 1	125	0,3
	Case 2	130	0,3
	Case 3	125	1,3
	Average	127	0,6
Average in total		125	

Gonial Angle for both imaging methods and Δ RMS for CT-scan were shown above.



OP-057

Closed Reduction of Zygomatic Fractures with Towel Clip

Mehmet Tapan, Yunus Emre Şeker, Vedat Can İşler, Özlenen Özkan, Ömer Özkan

Department of Plastic and reconstructive surgery, Akdeniz University, Antalya / Türkiye

Introduction

Thirteen percent of the craniofacial fractures are zygomatic bone fractures.(1) The patients are usually men and common in the second or third decades. They represent the complaints of facial swelling, malar region depression, restricted mouth opening, infraorbital nerve hypoesthesia, visual problems such as diplopia, restricted eye movements, enophthalmus.(2) The treatments of this fracture type include open and closed techniques. In the literature, few techniques for closed reduction were reported. (3-5) In this report, we evaluated the results of towel clip closed reduction technique.

Material and Methodology

This study was applied to patients with a displaced zygoma fracture without blowout between January 2022 and July 2023 and whose operation date was not later than 14 days.

Surgical Technique

A towel clip was placed at the inferolateral side of the orbita and inferior border in the midline or fracture side of the zygomatic arch. After attaching th towel clip, it was moved related with fracture type. During this movement, the reduction of the bone was confirmed. No suture was used for the holes of the towel clip.

Results

This technique was used in the treatment of 12 patients. No complications were encountered in patients. None of the patients complained of surgical scar. Complete union and recovery were observed in the maxillofacial tomography of the patients taken in the postoperative period.

Discussion

In the literature, there are many treatment choice for zygoma fractures. For closed reduction of zygomatic arch fractures, the Gillies method is most frequently used (6) Keen (7) first described the intraoral strategy in 1909. Infection rates may rise as a result of oral mucosa contact and oral flora introduction. However, arch fractures can still be treated with this method. Closed reduction can be used to treat zygomatic tripod fractures that are not comminuted. The Volkmann bone hook was utilized by Gundeslioglu et al. (8) to reduce zygomatic tripod fractures in seven patients. Towel clips were employed in this study to reduce non-comminuted. With this technique, we did not need titanium plates or screws. Any surgical incision was not also needed.

Possible complications that can be seen with this technique can be listed as; loss of reduction, unable to reduct completely, post operative scar. We recommend to patients not to lay down on operative site for 6 weeks post operatively thus we aim to prevent loss of reduction. Patients may suffer surgical scars due to 2 entry points of surgical towel but since those scars are limited to 2-3 mm, we did not encounter patient complaint

We observed that callus tissue at the fracture site increases the power that is required for reduction but since callus tissue serves as a cement at fracture site we get a firmer fracture site.

Cinpolat et al, suggests that first 72 hours are vital for this surgical technique but with this study we observed that this technique can be used after 7-10 days of trauma, after this period we failed to reduct the fracture succesfully. Reasons behind this unsuccesful reduction can be listed as; increased callus formation that increases rigidity of fracture are and decreases bone mobility and wound contracture at the trauma site

We recommend this method to our colleagues, for which we have determined the indications of the method described by Cinpolat et al. This method eliminates the cost of using plates and screws and offers patients a faster and safer treatment option.

Keywords: closed reduction, maxillofacial fracture, tetrapod fracture, towel clip, zygoma



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

OP-058

A Novel Technique for Addressing Columellar Deficiencies in Cleft Lip Nose Rhinoplasty

Oğuz Eker, Gökçe Yıldırım, Zekeriya Tosun

Plastic, Reconstructive and Aesthetic Surgery Department, Selçuk University, Konya / Türkiye

Introduction

Nasal deformity resulting from cleft lip is a major cosmetic and practical challenge. Surgical correction of these nasal abnormalities is often complicated due to anatomic complexity and limitations. The severity and nature of nasal deformities vary from patient to patient, requiring a patient-centred surgical approach.

A cleft lip nose is characterized by a short columella, broad nostrils, downwardly displaced alar cartilages, flared alar rims, wide alar base, and a weakly projecting nasal tip. Short columella is one of the most serious problems in cleft lip and nose. While the projection and rotation of the nasal tip increases in most cases, skin defects may occur in the columella if it is not lengthened appropriately, resulting in tight primary closure and abnormal columella shape or sometimes requiring additional tissue transfer for closure. Moreover, tension on the repositioned alar cartilage can lead to widened scars and easily deform the corrected alar cartilage and nostril shape. Various techniques such as V-Y advancement flaps, reverse V-Y advancement flaps, forked flaps, and composite grafts have been utilized to address small columella. However, these techniques have limited applicability, may result in irregular columellar shape and scarring, and are sometimes difficult to apply.(1-5)

In this study, we present a practical and straightforward technique to correct a columellar deficit using a membranous septum based rotational flap (MSRF) from the base of the membranous septum. This innovative technique is easy to implement and is particularly well suited for patients with severely short columella.

Materials and Methods

Between the years 2022 and 2023, a total of five patients (3 males and 2 females) were enrolled in this study who underwent correction of cleft lip nose deformity with columellar lengthening using MSRF --. Patients with cleft lip nasal deformity who did not require columella lengthening and patients who underwent columella lengthening with a method other than MSRF were excluded from the study.

Outcome Assessment

Preoperative, intraoperative, and postoperative (1-month follow-up) photographs of the patients were obtained. The extent of columellar lengthening achieved with MSRF and forked flaps was quantified using ImageJ software, a digital image analysis tool. All measurements were performed by a single observer to maintain consistency.

Surgical Technique

The operation was performed under general anesthesia. All surgeries were performed by the same experienced surgeon, and the technique was to use a membranous septum bases rotational flap (MSRF) to address the columellar deficit. (Figure 1)

Marginal rim incisions and a transcolumellar incision were performed to elevate the nasal skin flap. The columellar incision was performed in the form of a bifurcated flap to provide additional columellar lengthening. Dissection was performed to the supraperichondrial level. After achieving sufficient tip projection and tip rotation, it was observed that primary closure of the columellar skin was not possible or would lead to tension during closure. The extent of columellar gap was measured and these were covered with MSRF. During elevation of the mucosal flap, the medial crus of the lower lateral cartilage was dissected and separated from the mucosal flap. The use of this convenient and simple local flap provided tension-free, comfortable closure of the columella skin. (Figure 2, 3)



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

Results

Three male and 2 female patients participated in the study. Bilateral mucosal rotational flaps were operated in four cases, and a unilateral mucosal rotational flap was used in one case. The mean age of the operated patients was determined to be 32.3 years. The mean preoperative columella length of the operated patients was 17.9 mm. (15.9 – 19.1 mm) The mean lengthening of the columella was 6.7 mm with the MSRF. (6.1 – 7.5 mm) The mean lengthening of the columella was 2.04 mm (1.8 mm – 2.2 mm) with the forked flap. MSRF can achieve an average lengthening of the columella of about 37.8%, while the use of a forked flap on the columella resulted in an average lengthening of about 11.3%. One month after surgery, there was no excessive scar tissue or abnormal shape of the columella. The rotational flap was completely alive and showed no necrosis.

Discussion

Rhinoplasty for cleft lip is a difficult procedure in itself, although with proper planning and preparation, satisfactory results can be achieved. In all stages of rhinoplasty, many improvements and sophisticated methods have led to much better results.

The existence of a small columella in bilateral cleft lip and nose has led surgeons to use a variety of surgical methods to address this deformity. McIndoe(1) described the V-Y advancement flap for prolabial scars, Cronin(2) reported the reverse V-Y advancement technique in conjunction with bilateral bipedicular flaps, and Millard(3) described the forked flap to lengthen the columella. These techniques do not provide sufficient tissue for columella lengthening, and their application is quite complex, and the use of prolabium skin in columella lengthening can lead to new scarring and deformities in the prolabium. These techniques also cause poor scarring and overly wide columella. Instead of these local flaps, a rotational flap prepared from the base of the columella provides a technically simpler method, and there is no need to use the prolabium for the columella.

Cheon and Park(4) used a composite graft to lengthen columella instead of a local skin flap. They used conchal cartilage and preauricular or postauricular skin and subcutaneous fat composite tissue. It was stated that partial/total flap necrosis developed in 14 (10.7%) of the 137 patients presented in the study, which prolonged the recovery time and required some additional surgeries. Another problem is that the maximum size of a composite graft is still controversial. As the thickness of the fat layer increased, the survival rate became unreliable.

Lee et al.(5) described the use of a full-thickness skin graft from the postauricular region to lengthen the columella. They reported that complete graft necrosis occurred in 1 of 10 patients who used this method, and 1 patient developed a secondary healing scar at the grafted columella. Skin grafts may be the simplest reconstruction method for lengthening the columella, but they require a well-vascularized wound bed and should be placed over the perichondrium of the medial crura. Any damage to the perichondrium of the medial crura during dissection may result in partial necrosis of the graft, resulting in unsightly scarring. Immobilization, which is one of the most important factors for skin graft viability, is difficult to achieve in the columella region because movements of the upper lip during feeding and speaking may cause movement in the columella and prevent the graft from survival.

It is essential to acknowledge the limitations of this study, including the small sample size and lack of a control group. As with any surgical technique, individual patient variations and subjective judgments may influence the outcomes. One of the drawbacks of this technique is that the transfer of mucosal tissue from the membranous septum leads to the presence of mucosa in an area where it would typically be absent. Furthermore, level discrepancies may occur when the mucosal flap is matched to the normal columella skin. Matching the mucosal flap to the normal columella skin may result in visible irregularities or differences in skin texture, which could be a concern for some patients. Further research and long-term follow-up may be needed to better understand the implications of these drawbacks and to refine the procedure for optimal outcomes.

Columella lengthening with MSRF rotated from the base of the membranous septum is a simple and effective method with minimal donor site morbidity, for repair of cleft nose deformities in patients with a severely short columella. It allows a short recovery time and could be an alternative to other techniques.



References

- 1- McIndoe SA, Rees TD. SYNCHRONOUS REPAIR OF SECONDARY DEFORMITIES IN CLEFT LIP AND NOSE. 1959;
- 2- Cronin TD. Lengthening columella by use of skin from nasal floor and alae. Plast Reconstr Surg Transplant Bull. 1958 Jun;21(6):417-26.
- 3- Millard DR. Bilateral cleft lip and a primary forked flap: a preliminary report. Plast Reconstr Surg. 1967 Jan;39(1):59-65.
- 4- Cheon YW, Park BY. Long-term evaluation of elongating columella using conchal composite graft in bilateral secondary cleft lip and nose deformity. Plast Reconstr Surg. 2010 Aug;126(2):543-53.
- 5- Lee YS, Shin DH, Choi HG, Kim JN, Lee MC, Kim SH, et al. Columella Lengthening with a Full-Thickness Skin Graft for Secondary Bilateral Cleft Lip and Nose Repair. Arch Plast Surg. 2015 Nov;42(6):704-8.

Keywords: cleft lip, cleft palate, nasal deformity, cleft lip nose, columellar deficiency

Figure 1



Schematic Presentation of the flap, 1: MSRF, 2: Columellar defect

Figure 2



Plannning Membranous-Based Septum Mucosal Flap, anterior view and oblique view

Figure 3



After suturing both MSMFs and lengthening columella



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-059

The Only Pre-Bent Plate Template Technique without Printing Defect and Bone Flap in Mandible and Maxillary Reconstruction with Homemade 3D Printer

Erden Erkut Erkol¹, Mustafa Sutcu², Osman Akdag², Zekeriya Tosun¹

¹Selçuk University Medical Faculty Hospital, Konya / Türkiye

²Private Practice

Introduction

Despite the importance of pre-operative virtual surgical planning in maxillofacial reconstruction, the 3D modelling surgery is not cost effective. In this study, it was aimed to pre-bend the plate using a template printed with a homemade 3D printer instead of modelling surgery in complex maxillofacial defects.

Materials and Method

The study includes eight patients who were planned to perform free osseocutaneous fibular flaps for maxilla or mandible defects. Demographics of the patients, size of the defects, ischemia time of the flap, required time for fibular osteotomy, osteotomy number and complications were recorded.

Surgical Technic

Standard virtual surgical procedure was performed in all the patients. Additionally, the reconstruction plate, which was previously transferred to the virtual platform, was placed on the fibula and bent to fit the defect. Only the reconstruction plate template was printed with a homemade 3D printer. The titanium reconstruction plate was bent preoperatively using the plate as a template. Fibula osteotomies were performed according to the measurements, the fibula was adapted to the pre-bent reconstruction plate (Figure 1).

Result

The patients, with a mean age of 44,25, were operated on with the technique. The mean size of defects was 105 mm. The mean number of osteotomies was 5,25 (4 – 8). The mean time for fibular osteotomy was 61,25 minutes (45 – 100) and the mean ischemia time was 80 minutes (70 – 90). No complications than partial skin necrosis was observed.

Discussion

The virtual surgical planning is an emerging technique and provides many advantages. The limited surgical exposure and the need for detailed planning in maxillomandibular reconstruction make virtual surgical planning inevitable. Because of insufficient infrastructure in every center and high cost of patient-specific 3D modelling and osteotomy guides, a preoperatively bent plate via a simple homemade 3D-printed template is a practical solution and can be alternative to 3D modelling surgery in maxillomandibular reconstruction.

Keywords: Pre-bent plate, home made, 3D printer, head and neck, fibula, mandible, maxilla



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE

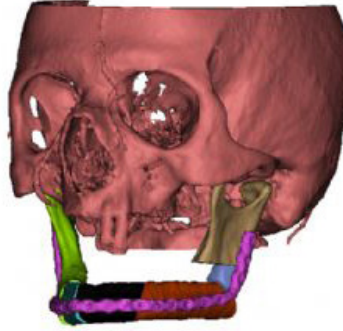


2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Figure 1



Reconstruction planning of the extensive mandible defect with multi segmental fibular flap using 3D virtual surgical planning



12th

BAPRAS CONGRESS

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-060

Evaluation of Revisions for Functional Improvement in Functional Free Gracilis Muscle Flaps Used in the Head and Neck Region

Burak Yaşar

Health Sciences University, Ankara Bilkent City Hospital, Plastic, Reconstructive and Aesthetic Surgery Clinic, Ankara / Türkiye

Introduction and Objectives

In the ever-evolving landscape of reconstructive surgery, the application of muscle flaps has emerged as a cornerstone for addressing complex defects in the head and neck region. Among these techniques, the utilization of the functional gracilis muscle flap (FGMF) has gained prominence due to its versatility and effectiveness in restoring both form and function. The dynamic nature of the head and neck region demands meticulous surgical planning and execution, often necessitating revisions to achieve optimal outcomes. As a result, a comprehensive evaluation of the revisions employed for enhancing functional outcomes in functional gracilis muscle flaps becomes paramount.

FGMF, derived from the gracilis muscle located in the thigh, has exhibited remarkable success in addressing various defects resulting from trauma, oncologic resections, or congenital anomalies. Its unique ability to be employed as a dynamic, living tissue transfer enables the restoration of vital functions, such as speech and swallowing, while also contributing to aesthetic rehabilitation. However, like any surgical technique, challenges can arise, prompting revisions that aim to refine the initial results, mitigate complications, and improve overall patient satisfaction.

This study endeavors to delve into the multifaceted realm of FGMF revisions within the context of head and neck reconstruction. By critically analyzing the approaches, techniques, and outcomes of these revisions, we aim to provide a comprehensive understanding of their significance in optimizing functional outcomes. Through a synthesis of current literature, clinical insights, and case studies, we will explore the nuances of revision strategies, their impact on patient well-being, and the broader implications for the field of reconstructive surgery.

In the following sections, we will traverse the landscape of FGMF applications, examining the rationale behind revisions, the intricacies of surgical techniques, and the evolving paradigms that guide decision-making in pursuit of enhanced functional restoration. Ultimately, this exploration seeks to contribute to the ongoing refinement of surgical practices, fostering an environment of continuous improvement and innovation in the realm of head and neck reconstructive surgery.

Materials and Methods

Between 1st January 2020 and 1st June 2022 total 14 functional muscle transfers performed by author in Ankara City Hospital, Plastic, Reconstructive and Aesthetic Surgery Clinic. All 14 patients retrospectively analysed. Revision surgeries that performed to improve functional outcomes were noted. The conditions requiring revision in the gracilis muscle flaps used for facial reanimation were determined as the flap thickness that widens the upper and mid face, superior or inferior placement of the oral commissure, and low smile excursion. For lower lip reconstruction, drooling, microstomi, macrostomi were determined as revision requirements. All patients were evaluated for revisions and performed revision operations are presented in the study.

Surgical Technique of Revisions

Revisions ought to be scheduled no sooner than 12 months after the initial surgery, allowing ample time for adequate muscle innervation, potential atrophy, or any foreshortening to develop. When dealing with pronounced midfacial fullness, it is advisable to identify the specific regions of bulging during both relaxed and smiling states before the operation. The process of reducing excess volume and repositioning the gracilis muscle is carried out through the existing preauricular incision. Tangential excision is made by paying attention to the pedicle.

Superior or inferior placement of the oral commissure treated with repositioning of the muscle with the same preauricular incision. If needed an incision on the nasolabial crease was made. In the absence of smile excursion, the patients were evaluated in terms of muscle plication and muscle reinsertion.

Revisions of lower lip reconstructions were performed only as commissuoroplasty.



Results

Fascial reanimation surgery was performed in 6 patients, and functional lower lip reconstruction was performed in 8 patients with total lower lip defects with functional gracilis flap. Mean age was 29 (min 10- max 43) and 62 (min 46, max 69) in fascial reanimation group and lower lip reconstruction group respectively. Fascial artery and vein used for anastomosis in all cases. Masseteric nerve used as recipient nerve in all fascial palsy cases. Marginal mandibular nerve used for lower lip reinnervation in all cases. All flaps were survived. There were no need for early revision surgeries. 1 fascial reanimation patient undergo for revision because of low excursion, bulkiness of midface and lower placement of oral commissure. (Figure 1,2,3) 2 lower lip reconstruction patients undergo revision because of microstomi. Operations performed as mentioned in material and methods section.

Discussion

The present study, titled “Evaluation of Revisions for Functional Improvement in Functional Free Gracilis Muscle Flaps Used in the Head and Neck Region,” sheds light on the critical aspects of functional gracilis muscle flap revisions in the context of head and neck reconstruction. Our research delved into three distinct cases, each offering valuable insights into the role and significance of revisions in enhancing functional outcomes.

One of the cases examined in this study involved a patient undergoing fascial reanimation using the functional free gracilis muscle flap. The primary concern was the limited excursion of smile, accompanied by midfacial bulkiness and a lower placement of the oral commissure. This scenario underscores the intricate interplay between muscle dynamics and facial aesthetics. Our findings align with existing literature, emphasizing the necessity of an optimal balance between muscle tension and length for achieving functional and aesthetic symmetry. The decision to perform a revision in this case aimed to rectify these issues by adjusting the muscle’s positioning and tension, ultimately leading to a more natural and effective smile restoration.

In the two cases involving lower lip reconstruction, the focus shifted to addressing microstomia—a condition characterized by reduced oral aperture. The functional gracilis muscle flap, while invaluable in restoring both form and function, presented challenges in terms of maintaining appropriate oral dimensions. The necessity for revisions in these instances highlights the intricate nature of lip reconstruction and the impact of muscle dynamics on maintaining functional oral opening. Our observations echo the importance of comprehensive preoperative assessment and surgical planning to mitigate the risk of microstomia, thereby reducing the need for subsequent revisions.

The cases explored in this study underscore the dynamic and evolving nature of functional gracilis muscle flap surgery. While these flaps offer remarkable potential for functional restoration, they also demand meticulous surgical execution and a keen understanding of facial dynamics. The decision to pursue revisions reflects the commitment to optimizing both functional and aesthetic outcomes, underlining the iterative process of refinement inherent in reconstructive surgery.

As the field of reconstructive surgery continues to evolve, the lessons derived from these cases offer valuable insights into the complexity of balancing form and function. Further studies could delve deeper into the long-term outcomes of revisions, exploring factors such as patient satisfaction, quality of life, and the durability of functional improvements. Additionally, advancements in surgical techniques refine the precision and efficacy of revisions.

Conclusion

The evaluation of revisions for functional improvement in functional free gracilis muscle flaps used in the head and neck region highlights the significance of adaptation, refinement, and patient-centric approaches in the pursuit of optimal outcomes. By acknowledging the challenges and opportunities presented by revisions, surgeons can continue to elevate the standards of reconstructive surgery and contribute to the holistic well-being of their patients.

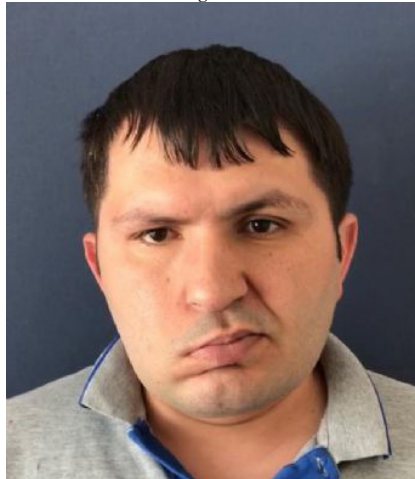


References

- 1- Coskunfirat OK, Bektas G, Cinpolat A, Unal K, Coskunfirat N. Experiences with functional gracilis muscle flap in lower lip reconstruction. *Microsurgery*. 2017 Sep;37(6):487-493. doi: 10.1002/micr.22431.
- 2- Chuang DC, Mardini S, Lin SH, Chen HC. Free proximal gracilis muscle and its skin paddle compound flap transplantation for complex facial paralysis. *Plast Reconstr Surg*. 2004 Jan;113(1):126-32; discussion 133-5. doi: 10.1097/01.PRS.0000096092.09655.63
- 3- Greene JJ, Tavares J, Guarin DL, Jowett N, Hadlock T. Surgical Refinement Following Free Gracilis Transfer for Smile Reanimation. *Ann Plast Surg*. 2018 Sep;81(3):329-334. doi: 10.1097/SAP.0000000000001545
- 4- Krakowczyk Ł, Opyrchal J, Bula D, Wierzoń J, Szymczyk C, Maciejewski A. Dynamic Reconstruction of the Lower Lip With Free Functioning Gracilis Muscle Transfer. *J Craniofac Surg*. 2022 Sep 1;33(6):1655-1658. doi: 10.1097/SCS.00000000000008389

Keywords: free flap, fascial palsy, smile reanimation, lower lip reconstruction, gracilis muscle flap

Figure 1



Before Functional Muscle Reconstruction for Fascial Palsy

Figure 2



Before Revision of Functional Muscle Reconstruction for Fascial Palsy

Figure 3



After Revision of Functional Muscle Reconstruction for Fascial Palsy



OP-061

Reconstruction of Extensive Defects in the Head and Neck Region Through the Utilization of Combined Local Flaps

Canberk Gürbüz, Emrah Kağan Yaşar, Murat Şahin Alagöz

Kocaeli University Hospital Department of Plastic, Reconstructive and Aesthetic Surgery, Kocaeli / Türkiye

Introduction

The main goal in head and neck reconstructions is to achieve the best aesthetic and functional outcome. Particularly, reconstruction in the head and neck region becomes challenging due to the presence of numerous aesthetic and functional structures. Generally, reconstruction for such defects is approached based on the principle of the reconstructive ladder. According to this principle, various options are available for defect reconstruction, ranging from secondary healing to free tissue transfer. Local flaps are preferred, especially for their better color and tissue match and minimal contraction. 1 This study aims to demonstrate the use of combined local flaps in the reconstruction of large defects that occur after head and neck surgery.

Materials and Methods

In this study, four patients who underwent surgery for head and neck region at Kocaeli University Department of Plastic, Reconstructive, and Aesthetic Surgery between 2020 and 2022 were examined. Multiple combined local flaps were used for the reconstruction of the defects in these patients. The average age of the patients was 72, and the definitive diagnoses of the lesions were squamous cell carcinoma (SCC) in three patients, malignant melanoma (MM) in one patient and Necrotizing Fasciitis in one patient. The locations of the defects and the local flaps used are listed (Table 1). During the post-operative follow-ups, there were no issues with flap viability, for one patient who is being followed for suspected SCC recurrence.'

Results

The reconstruction of large defects in the head and neck region is one of the challenging aspects for plastic surgeons. The complexity of aesthetic and functional units, especially in the facial region, makes the surgeon's task considerably more difficult. Factors that need to be considered during reconstruction include aesthetic subunits, relaxed skin tension lines, preservation of essential structures, and the patient's ability to participate in postoperative care. 1

The reconstructive ladder is a useful concept utilized in our plastic and reconstructive surgery department for surgical planning. This method aims to select the least invasive and safest approach to achieve the most optimal outcome in reconstruction. It typically progresses from secondary healing to primary closure, skin grafting, local flaps, and free tissue transfer. However, the choice of reconstruction method to obtain the best result should depend on the characteristics of the defect and the surgeon's preferences. 2

Secondary healing can be beneficial, especially for patients with comorbidities who are not suitable candidates for general anesthesia. Its advantages lie in fewer complications and the possibility of intervening post-cancer pathology. However, delayed wound healing and the need for sterile dressings to keep the wound closed daily are among its disadvantages.3

Full-thickness skin grafts (FTSG) demonstrate better color match and lower rates of contraction compared to split-thickness skin grafts (STSG) in head and neck reconstruction. STSG is particularly used for large scalp defects and for closing the donor site after flap harvest.

When compared to secondary healing and skin grafts, local flaps offer several advantages, including better color match and less contraction. Local flaps can be classified based on their mobility and vascularity. According to the mobility method, they can be classified as advancement, rotation, and transposition flaps, while based on vascularity, they can be categorized as axial and random pattern flaps.4



Another option that is increasingly used is the use of free flaps. Free flaps are preferred, especially in cases of large defects or when bone or vital structures are exposed, as seen in our study. However, due to the requirement for longer hospital stays, additional medical treatments, and lower tissue compatibility compared to local flaps, local flaps may be a more suitable choice in head and neck reconstruction.

In our study, we focused on the examples of using combined local flaps in the repair of large defects in the head and neck region. Considering the surgical ease and patient comfort during the postoperative recovery period, the use of combined local flaps should be considered as a good option for repairing such defects.

References

- 1- Eid IN, Arosarena OA. Reconstruction of Cutaneous Cancer Defects of the Head and Neck. *Otolaryngol Clin North Am.* 2021 Apr;54(2):379-395. doi: 10.1016/j.otc.2020.11.011. Epub 2021 Feb 15. PMID: 33602515.
- 2- Ge NN, McGuire JF, Dyson S, Chark D. Nonmelanoma skin cancer of the head and neck II: surgical treatment and reconstruction. *Am J Otolaryngol.* 2009 May-Jun;30(3):181-92. doi: 10.1016/j.amjoto.2008.03.003. Epub 2008 Jul 22. PMID: 19410124.
- 3- Becker GD, Adams LA, Levin BC. Secondary intention healing of exposed scalp and forehead bone after Mohs surgery. *Otolaryngol Head Neck Surg.* 1999 Dec;121(6):751-4. doi: 10.1053/hn.1999.v121.a98216. PMID: 10580232.
- 5- Brenner MJ, Moyer JS. Skin and Composite Grafting Techniques in Facial Reconstruction for Skin Cancer. *Facial Plast Surg Clin North Am.* 2017 Aug;25(3):347-363. doi: 10.1016/j.fsc.2017.03.007. PMID: 28676162.

Keywords: Head and Neck Surgery, Reconstruction, skin cancers, local flap, free flap, graft

Figure 1



Case 1

Figure 2



Case 2

Table 1

	Location	Flap-1	Flap-2	Etiology
Case-1	Left alar of nose – left malar region	Paramedian forehead flap	Local advancement flap	Malign Melanoma
Case-2	Left parieto-occipital region	Rotation flap	Bipedicle advancement flap	Squamous cell carcinoma
Case-3	Extending from the dorsum of the nose to the left medial canthus	Paramedian forehead flap	V-Y advancement flap	Squamous cell carcinoma
Case-4	Dorsum of the nose	Right side nasolabial fasciocutaneous flap	Left side nasolabial fasciocutaneous flap	Squamous cell carcinoma
Case-5	Neck	Right myocutaneous pectoral flap	Left myocutaneous pectoral flap	Necrotizing Fasciitis

Etiology, location and reconstruction techniques of patients



OP-062

Correction of Periorbital Contractures with Different Methods

Canberk Gürbüz, Emrah Kağan Yaşar, Murat Şahin Alagöz

Kocaeli University Hospital Department of Plastic Reconstructive and Aesthetic Surgery, Kocaeli / Türkiye

Introduction

Scar contractures occurring on mobile areas on the body surface, like the neck, the joints, the hand, and the face may induce functional limitations in skin availability during movements. Extensive burns, trauma, and infected wounds may be found as risk factors. The activation of populations of myofibroblasts may explain the occurrence of skin contracture, as they mechanically act on the matrix and induce skin retraction. Scar formation around the eyes can cause aesthetic concerns and if not treated properly, it can lead to lagophthalmia with eyelid retraction, axis asymmetry and incorrect positioning. As a result, dryness and irritation of the cornea can lead to keratitis, corneal opacity and visual impairment. It is essential to have a understanding of periorbital reconstructive options, as the surgical approach has a significant impact on both the functional and the aesthetic outcomes. There are a number of therapies apart from surgery to reduce contractures including intra-lesional corticosteroid injection, antihistamines, hydrotherapy, dynamic or static splinting, laser therapy, compression therapy, and surgical excision and reconstruction; yet, it is still unknown which therapy should be chosen for which contracture, when they should be initiated, and how long should be the period or how often they should be continued. The most powerful treatment option for contracture release and reconstruction is by surgical procedures, in which skin grafts and flaps have been successfully used, although it is still unclear which procedure is most effective. Various techniques have been described for the surgical treatment of the periorbital scar contractures. Some of the most popular techniques include full-thickness skin graft, Z-plasty, V-Y-plasty and its analogues, and partial-thickness skin graft (STSG) in cases where the risk of late-stage contracture is high. However, there is no gold standard technique. In this study, we applied three different techniques as subcutaneous Z-plasty, Z-plasty and K-M-plasty to periorbital contracture patients and evaluated the results.

Method

Patients with periorbital contractures were screened between 2018 and 2022. The techniques used for contracture release in these patients were noted. Patients' ages, techniques, contracture sites, etiologies and complications were compared.

Conclusion

Patients with periorbital scarring aged between 18 and 77 years, six with lateral canthus involvement and one with medial canthus involvement, were successfully treated using subcutaneous Z-plasty, Z-plasty, and K-M-plasty. Six patients had post-traumatic contracture and one patient had post-oncological surgical contracture. Complications were evaluated and no complications or recurrences were observed. Eye complaints improved during the patient follow-up. Contracture bands were loosened satisfactorily using the required size and the number of flaps. The routine wound care was performed after surgery. Contractures did not recur, resulting in aesthetically pleasing and functionally uncompromising results.

Discussion

Z-plasty is a critical and reliable technique that is useful for scar revisions and correction of free margin distortion. A Z-plasty can help lengthen a contracted scar, change the direction of a scar so that it is better aligned with the relaxed skin tension lines, or interrupt and break a scar for better camouflage. Z-plasty and its analogues such as K-M-plasty represent an ideal surgical method to permanently correct the eyelid malposition, asymmetry, ectropion, and lagophthalmos in patients with severe periorbital scar contractures following facial trauma. The periorbital trauma could vary from simple to complicated injuries. The injury of important structures such as the medial canthus ligament and lacrimal system can be overlooked and missed in the surgical management. The periorbital region is an important aesthetic region that is formed by complexity of tissues. Some authors used "periocular region" and "periorbital region" as interchangeable terms. Either region was described as the area including the upper eyelids, lower eyelids, and canthal regions. In case of periorbital contracture, these relatively simple and quick surgeries can yield successful aesthetic and functional results. Some of the most popular techniques include full-thickness skin graft, Z-plasty, V-Y-plasty and its analogues, and partial-thickness skin graft (STSG) in cases where the risk of late-stage contracture is high. However, there is no gold standard technique.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

References

- 1- Chambers, Christopher B, and Kristen S Moe. "Periorbital Scar Correction." Facial plastic surgery clinics of North America vol. 25,1 (2017): 25-36. doi:10.1016/j.fsc.2016.08.007
- 2- Demir, Can Ilker et al. "A Novel Method for Correction of the Tethered and Contracted Facial Scars: The Three-Dimensional Subcutaneous Z-Plasty." The Journal of craniofacial surgery vol. 33,5 (2022): 1307-1311. doi:10.1097/SCS.0000000000000836
- 3- Hundeshagen, Gabriel et al. "Tissue Rearrangements: The Power of the Z-Plasty." Clinics in plastic surgery vol. 44,4 (2017): 805-812. doi:10.1016/j.cps.2017.05.011

Keywords: Contracture, Z-plasty, Scar, oculoplasty, flap

Figure 1



*A: Ectropion due to end-stage contracture after an in-vehicle traffic accident in the medial canthus of the left eye
B: After subcutaneous Z-plasty, regression in ectropion and lagophthalmus, satisfactory relief in the contracture band was observed.
C: Contracture band in the lateral canthus of the right eye after trauma. D: Opening in the contracture band, good aesthetic and functional results.*

Table-1

Patient	Age	Location of Contracture	Etiology	Technique	Complication
A	25	Lateral Canthus	Trauma	Z-plasty	-
B	18	Medial Canthus	Trauma	Subcutan Z-plasty	-
C	31	Lateral Canthus	Trauma	K-M Plasty	-
D	77	Lateral Canthus	Oncologic	Z-plasty	-
E	35	Lateral Canthus	Trauma	Z-plasty	-
F	27	Lateral Canthus	Trauma	Z-plasty	-
G	55	Lateral Canthus	Trauma	Z-plasty	-

Patient epidemiology



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE

2023

13 September
Pre Congress Course
14 - 16 September
Congress



OP-063

Our Clinical Experiences in Mustarde Flap Reconstruction

Furkan Cestepe, Ömer Faruk Dilek, Ismail Ince, Egehan Güngörmez, Soysal Baş

University of Health Science, Sisli Hamidiye Etfal Training and Research Hospital, Plastic Surgery Department, İstanbul / Türkiye

Introduction

The lower eyelid is one of the complex structure of our face. Looking from anterior to posterior, the skin consists of the orbicularis oculi muscle, tars, and conjunctiva. In the subconjunctival region, it contains mucous and sebaceous glands.

Lower eyelid repair is of particular importance for the field of plastic-reconstructive and aesthetic surgery. Unsuccessful repairs can result in serious complications and very significant aesthetic defects that lead to keratitis, conjunctivitis and eventually blindness.

Lower eyelid defects usually occur after tumor excision or as a result of trauma. In total lower eyelid losses; repair can be achieved by Mustarde flap, which is prepared from the cheek and preauricular region and contains the skin and subcutaneous tissues.

The aim of this retrospective study is to reveal the repair techniques with Mustarde Flap, which we use for the reconstruction of lower eyelid defects caused by tumor excision and trauma, and their early and late results-complications.

Material and Method

In this study, defect repair with Mustarde flap used after excision in 12 patients with skin tumors on the lower eyelid between OCTOBER 2019 - JULY 2023 at the University of Health Sciences Şişli Hamidiye Etfal Training and Research Hospital, retrospectively; age, length of stay, size of the defect and additional diseases were evaluated.

Punch biopsy was taken from all patients with tumoral lesions before excision and regional lymph node examination was performed. Lymph node involvement was not detected in any of the patients.

Eyelid reconstruction was performed using Mustarde flap in 12 patients who had defects as a result of tumor excision.

Considering the general condition of the patients, it was observed that they were followed in the plastic surgery service, not in the anesthesia intensive care unit. Postoperative flap monitoring was performed with clinical observation. In the follow-up of the flaps; color, bleeding, capillary filling, turgor and temperature were evaluated.

Results

7 of the patients were female and 5 were male, with a mean age of 68.2 (the youngest 52, the oldest 87).

The lesion was totally excised in all patients with tumors in the lower eyelid. In 2 of the patients, surgical margin examination was performed with peroperative "frozen section" following excision. Reexcisions were performed in patients with tumor at the surgical margin positive

Basal cell carcinoma (BCC) was diagnosed in 10 patients and squamous cell carcinoma (SCC) in 2 patients.

Complications such as lateral and medial canthal position defect, entropion or insufficiency in eye opening-closing functions were not encountered in patients after eyelid reconstruction. There was no problem in flap vascularization. After ecchymosis and edema resolved, lower eyelid functions returned to normal. Acute conjunctivitis occurred in 2 patients although eye protective ointment were applied before the surgery.



One patient had visual impairment and eye pain that started 3 days after the operation. Therefore, the patient was consulted to ophthalmology and started to recommended treatment. During the follow ups, the patient were hospitalized by ophtalmology due to keratitis and hypopyon. 2 months later, the patient underwent a cornea transplant oper

Sutures were removed on average 7 days. In the postoperative period, ectropion was detected in 2 patients who underwent Mustarde flap.

Discussion

Lower eyelid reconstruction is one of the important and difficult subjects of reconstructive surgery in terms of eye protection. Although lower eyelid defect has many etiological causes, the most common cause is tumor excision and trauma. With the repair of total lower eyelid defects; a lid that is symmetrical with the opposite eyelid, has sufficient conjunctival depth, and is stable at sufficient rigidity and height should be obtained.

In reconstruction with the mustarde flap, total lower eyelid defects are repaired by septal chondromucosal graft and a rotation flap prepared from the temporal, cheek regions.

Mustarde flap can be learned easily and the result is predictable. This flap is said to contain all the necessary components for lower eyelid repair. In this technique, the supporting layer is provided with a septal chondromucosal graft. It is reported that the result obtained is at an acceptable level in most of the cases. Secondary corrections are only needed in a very small group of patients.

To get good results in Mustarde flap technique; The flap should be prepared to make a high arch in the temporal region, a composite septal graft should be applied, and the flap should be fixed to the frontozygomatic region with suspending sutures.

There may be retraction and sagging of the flap. This usually occurs within 2-3 years after repair. Other rare complications of Mustarde flap; lateral symblepharon, trichiasis, formation of a notch on the lid margin and round canthus. The development of ectropion in the early period occurs due to wrong planning of the flap, hematoma and tight closure.

Result

As a result, Mustarde flaps are widely used in patients with lower eyelid tumors and in repairing tissue defects secondary to trauma. Colour similarity with the existing area, tissue compatibility, functionality and primary closure of the donor area provides the widespread use of reconstruction with Mustarde flap

References

- 1- Patel SB., Buttars BR., Roy DB. Mustardé flap for primary nasal sidewall defect post-Mohs micrographic surgery. JAAD Case Rep. 2022 Apr 1;23:151-154. doi: 10.1016/j.jder.2022.03.014.
- 2- Mitra S., Panda S., Singh C. et al. Modified Mustardé Flap for Lower Eyelid Reconstruction in Basal Cell Carcinoma: Revisited. Indian J Otolaryngol Head Neck Surg (2023). <https://doi.org/10.1007/s12070-023-03768-4>
- 3- Sugg KB., Cederna PS., Brown DL. The V-Y advancement flap is equivalent to the Mustardé flap for ectropion prevention in the reconstruction of moderate-size lid-cheek junction defects. Plast Reconstr Surg. 2013 Jan;131(1):28e-36e. doi: 10.1097/PRS.0b013e3182729e22. PMID: 23271551; PMCID: PMC4487805.
- 4- Lo Torto F., Losco L., Bernardini N., Greco M., Scuderi G., Ribuffo D. (2017). Surgical treatment with locoregional flaps for the eyelid: a review. BioMed Research International, 2017.
- 5- Ibáñez-Flores N., Bruzual-Lezama C., Castellar-Cerpa J.J., Fernández-Montalvo L. (2019). Lower eyelid reconstruction with pericranium graft and Mustarde flap. Archivos de la Sociedad Española de Oftalmología (English Edition), 94(10), 514-517.

Keywords: eyelid, flap, reconstruction, tumor, mustarde



OP-064

A Novel Modification of Furlow Palatoplasty: Extended Double Opposing Z-Plasty

Murat Kara, Figen Özgür

Hacettepe University Faculty of Medicine, Department of Plastic, Reconstructive and Aesthetic Surgery, Ankara / Türkiye

Introduction and Objective

While various techniques have been described in the literature for repairing cleft palate, there is still no consensus on the ideal repair technique. Factors such as cleft morphology and surgeon preference play a role in the selection of surgical techniques, one of the commonly preferred techniques in the literature is Furlow palatoplasty. 1 Although Furlow palatoplasty offers significant elongation of the palate, one of its drawbacks is a high rate of fistula formation due to tight closure, particularly in wide clefts. 2 Despite various proposed modifications to overcome this limitation, no modified technique has been implemented in clinical practice. 3-5 In this context, the present study proposes a new modification of Furlow palatoplasty to prevent the challenging aspect of tight closure. The aim of the present study is to contribute to the optimization of Furlow palatoplasty outcomes by presenting early postoperative results of this modification.

Materials and Methods

Following institutional ethics committee approval, data of patients who underwent extended double opposing z-plasty (EDOZ) between November 2021 and June 2022 were retrospectively reviewed using ICD-10 diagnostic codes. Demographic and medical data of the patients were recorded. Due to inadequate follow-up duration and unsuitability of patient ages for speech evaluation, velopharyngeal insufficiency and speech data were not presented. In the current study, the methodology of the technique, the necessity of relaxation incision, and surgical outcomes such as fistula development were analyzed.

In contrast to the conventional Furlow palatoplasty technique, the cleft margin incision in the EDOZ technique is made towards the nasal surface of the cleft to increase the horizontal length of the flaps (Figure 1b). Additionally, to increase the longitudinal length of the flaps, the apex of the Z flap was extended to the hard palate for the posterior-based oral mucosal flap and to the uvula by including the basis of the uvula in to flap for the anterior-based oral mucosal flap (Figure 1a). Considering the small tissue dimensions depending on patients' age at the time of surgery, the increase in flaps' dimensions achieved is prominent.

Results

A total of 18 patients underwent palatal repair using the EDOZ technique. Among these patients, 44.4% (n=8) were male, and 55.6% were female. The mean age at the time of surgery was 10.11 ± 1.32 months. No additional procedures (relaxation incision/ flap back-cut) were necessary to facilitate closure or reduce tension in the incision line during the repair. Mild respiratory distress was observed in two patients postoperatively; their symptoms improved with monitored care. No early wound infections or dehiscence were observed. The mean follow-up duration was 15.44 ± 2.38 months. Fistula formation was absent in all patients except one case with a bifid appearance of the uvula apex.

Discussion

The Furlow palatoplasty technique is one of the most commonly preferred surgical techniques for cleft palate repair in the literature. 1 Its advantages include favorable levator muscle positioning, increased levator muscle tone through the overlap effect, palate elongation, and reduced incidence of late contraction compared to straight-line techniques. 6 Considering velopharyngeal insufficiency and fistula development rates, different studies have reported superior outcomes with Furlow palatoplasty compared to straight-line techniques. 6,7 Despite these advantages, Furlow palatoplasty has significant disadvantages, including a vertical learning curve compared to other palatal repair techniques and, especially in wide clefts challenging and tight closure of the oral mucosal layer. 2 To mitigate tension-related complications, the combination of relaxation incisions with the technique has been recommended. 8 However, in wide clefts, the need for extensive relaxation incisions extending towards the base of the oral Z flaps, which may compromise the flap survival. Furthermore, additional incisions potentially lead to increased bleeding and scar formation. In this context, while various modifications have been proposed to overcome the disadvantages of Furlow palatoplasty, no modification has gained widespread acceptance in clinical practice. The EDOZ technique described in the present study achieves tension-free closure and eliminates the need for relaxation incisions.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

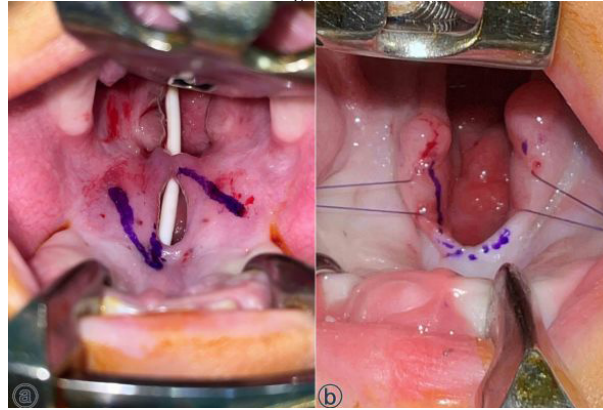
Although the current study contributes to addressing the limitations of Furlow palatoplasty, it has certain limitations. First and foremost, a control group is necessary to fully assess the effectiveness of the technique. In addition to surgical data, a comparison should also include velopharyngeal insufficiency rates and speech data. Due to the inability to evaluate speech based on patient age, our study presents the surgical outcomes of the EDOZ technique. Data collection is ongoing, and a comparison study with a control group and speech data is planned following follow-up assessments. On the other hand, considering the preliminary results of the study, it is anticipated that the EDOZ technique will yield positive results for velopharyngeal insufficiency and speech outcomes.

Conclusion

The EDOZ modification of Furlow palatoplasty overcomes the main limitation of Furlow palatoplasty, the tight mucosal closure. The achieved tension-free closure is an effective modification to address early wound healing issues and reduce fistula formation.

Keywords: Cleft palate, Furlow palatoplasty, palate fistula, Double opposing Z-plasty, Palatal repair

Figure 1



Design of Oral Mucosal Z-Plasty Flaps



OP-065

Maxillary Bone Density of Cleft Lip and Palate Patients with Alveolar Clefts: A Comparative Study with The Normal Population

Sare Demirtas, Gokce Yildiran, Zekeriya Tosun

Plastic Reconstructive and Aesthetic Surgery Department, Selçuk University, Konya / Türkiye

Introduction

Cleft palate patients undergo numerous surgeries even in adulthood. These procedures include procedures such as rapid maxillary expansion, orthognathic surgery, distraction osteogenesis, and placement of dental implants. These patients may also need some orthodontic treatments that require the placement of implants, screws, and plates. Bone density in the maxilla plays a crucial role in the planning of such procedures involving the placement of implants, screws and plates, as well as in the implant placement itself. This is because there is a relationship between bone density and the anchorage of the bone area. However, the bone density of the maxilla in cleft palate patients has not been studied in the literature and compared with the normal population.

The purpose of this study is to determine the trabecular bone density of the maxilla of CLP patients with cleft alveolar palate on both the cleft side and the non-cleft side, and to determine the difference between the two sides and in addition to the normal population with the same characteristics.

Materials and Method

This retrospective study included patients with cleft lip and palate (CLP) who underwent alveolar cleft bone grafting at the Department of Plastic, Reconstructive, and Aesthetic Surgery, Selçuk University, between January 2017 and March 2023 and underwent preoperative cone-beam computed tomography (CBCT). Based on age and sex, the same number of patients were selected as a control group from those patients who had maxillofacial trauma or pathologies other than CLP and had already undergone CBCT in the hospital databases. The control group was selected as a stratified random sample according to the same demographic characteristics as the patient group. Inclusion criteria were CLP patients with unilateral or bilateral alveolar clefts, maxillary trauma patients with intact maxillae, and with previous jaw tomography in both groups. Syndromic patients, patients with isolated cleft lip or palate, patients who underwent bone grafting with alveolar cleft without a preoperative CT scan, trauma patients with previous jaw fracture, and very young or very old patients were excluded from this study.

The Picture Archiving and Communication System (PACS) was used for bone density analysis. For the first group (CLP patients), coronal CBCT slices with a thickness of 1 mm were scanned, and in the slices where the cleft was widest, maxillary trabecular bone density was measured in Hounsfield units (HUs) on both sides of the scans, i.e., on the side with the cleft and on the side without the cleft. For the control groups, 10 mm² circular areas of maxillary trabecular bone density were again measured from the 1-mm-thick coronal CBCT slices on the right and left sides of each patient in the sections where the canines were most visible.

Statistical comparisons were made by sex and bone density of the CLP patients on the cleft and non-cleft sides, respectively. In addition, correlation analysis by age was performed on the CLP patient groups. Finally, the bone density values of the CLP patients in the maxilla were compared with those of the control group.

All data were analysed using SPSS v22.0 (SPSS, Chicago, IL, USA), and a p value of less than 0.05 was considered statistically significant. Because all data were normally distributed in both groups, the independent t-test and Pearson's correlation analysis were used for evaluation.



Results

One hundred CLP patients and one hundred control patients (200 total) were enrolled in this study, and 400 measurements (two pages for each sample) were taken from the CBCT scans. There were 45% (n=45) females and 55% (n=55) males in both the CLP patient group and the control group. The mean age of the CLP group was 17.20 years, that of the control group was 17.98 years, and the mean age of all samples overall was 17.58 (5-40) years. Twenty-six (%26) of the one hundred CLP patients have right-sided cleft, 59 (%59) have left-sided cleft, and 15 (%15) patients have bilateral cleft lip and palate. In bilateral CLP patients, there was no statistical difference in the bone density values of the right and left maxilla ($p > 0.05$)

The mean bone density on the cleft side of CLP patients was 686.43 ± 252.85 HU and the mean bone density on the non-cleft side was 398.54 ± 189.17 HU and there was a statistically significant difference between the bone density on the cleft side and the bone density on the non-cleft side ($p < 0.001$).

The average bone density of the right maxilla of the control group was 441.79 ± 194.81 HU, while the bone density of the left maxilla was 435.44 ± 190.91 HU, with no significant difference between the bone density of the right and left sides of the control group. There were also no statistical differences in maxillary bone density between women and men in the CLP and control groups ($p > 0.05$)

When comparing the CLP group with the control group, the mean values of the total 200 measurements in both groups were 542.48 ± 265.39 and 438.61 ± 192.40 , respectively HU. The mean value of maxillary bone density of CLP patients was higher than that of normal population (control group), and this was statistically significant ($p < 0.05$).

Pearson correlation analyses were performed to determine the relationship between age and bone density. The correlation coefficient (Pearson's r) was 0.185 and 0.132 on the cleft and non-cleft sides, respectively, according to the age intervals, and in both groups it was found that there was no correlation between maxillary bone density and age.

Discussion

There are numerous studies in the literature that address alveolar bone grafting (ABG) and its feasibility with changing bone density over time. Chen et al. measured BMD values in the postoperative 6 months and second year after alveolar bone grafting using three different methods and obtained a significant increase in BMD between 6 months and 2 years after ABG. In contrast, Zhang et al. discovered that BMD did not change significantly between the third and sixth postoperative months, and Canan et al. again found that there were no significant differences in postoperative measurements at 3, 6, and 12 months after alveolar bone grafting. In this study, no measurements were taken on postoperative CBCT scans. However, because both the success of alveolar bone grafts and the success of future dental implants that might be placed in the grafted area could be affected, the maxillary bone densities of CLP patients during the preoperative period were of interest in this study. It was found to be higher than that of a normal population with similar characteristics.

It is well known that age and gender are important factors affecting bone mass and bone mineral density in the human body. The main cause of this difference is the sex hormones testosterone and estrogen in men and women, respectively. In the study of Eghbali et al. on cortical and trabecular bone density of glenoid bone in adults, it was found that BMD of glenoid bone was higher in men than in women in most age groups. Before age 40, the effect of age on BMD was very small in both men and women. However, after age 40, BMD values decrease more in women than in men. Also, no strong correlation was found between age and bone mineral density in this study. This result may be due to the fact that the maximum age of the sample population was 40 years in both the CLP group and the control group. In vivo experimental studies such as the one conducted by Grygorieva et al. in 376 Wistar rats also found that BMD values tended to increase with age, but no significant difference was found between the sexes, similar to this study in humans.

In this study, measurements were taken only in the anterior region of the maxilla, and the focus was on the differences between the cleft and noncleft sides and not on the values of trabecular bone density between the anterior and posterior maxillae. According to the results, it was found that in patients with cleft lip and palate (CLP), bone density on the cleft side of the maxilla was higher than on the noncleft side in all patients, and this difference was statistically significant. This difference is thought to be due to the disruption of the trabecular bone and surrounding cortical bone scaffold on the cleft side of the maxilla. Although the measurements were taken only on the trabecular bone and the cortical bone was excluded from the measured area, it is assumed that this difference is due to this anatomical variation.



Also, when comparing the mean maxillary bone density of CLP patients to a control group, it was found that the mean maxillary bone density values were significantly higher in CLP patients. This is thought to be due to the higher readings on the cleft side of CLP patients, which in turn is due to the presence of cortical bone scaffold near the measurement area. This is because the mean readings on the non-cleft side of the CLP patients were comparable to the readings on the right and left sides of the control group.

Previous studies in the literature have demonstrated the success of dental implant placement based on maxillary bone density. However, there is no known study in the current literature that compared the average values of maxillary bone density between individuals with cleft lip and palate and the normal population with the same characteristics and measured the correlation between age and maxillary bone density of CLP patients with alveolar cleft. This is the first clinical study on this topic.

Conclusion

Individuals' bone density may show considerable variation depending on the abundance of factors, but for the first time in the known literature, CLP patients can be predicted to have higher values of maxillary trabecular bone density than the normal population. These findings may lead to guidelines that may influence future treatment protocols for cleft lip and palate patients with alveolar clefts who require multiple surgeries and long-term follow-up during the treatment process.

References

- 1- Uzel A, Benlidayı ME, Kırkcı M, Kesiktaş E. The Effects of Maxillary Expansion on Late Alveolar Bone Grafting in Patients With Unilateral Cleft Lip and Palate. *J Oral Maxillofac Surg*. 2019 Mar;77(3):607-614. doi: 10.1016/j.joms.2018.07.022. Epub 2018 Jul 27. PMID: 30138625.
- 2- Fanuscu MI, Chang TL. Three-dimensional morphometric analysis of human cadaver bone: microstructural data from maxilla and mandible. *Clin Oral Implants Res*. 2004 Apr;15(2):213-8. doi: 10.1111/j.1600-0501.2004.00969.x. PMID: 15008933.
- 3- Chen PR, Lin YC, Pai BC, Tseng HJ, Lo LJ, Chou PY. Progressive Comparison of Density Assessment of Alveolar Bone Graft in Patients with Unilateral and Bilateral Cleft. *J Clin Med*. 2021 Nov 1;10(21):5143. doi: 10.3390/jcm10215143. PMID: 34768663; PMCID: PMC8585053.
- 4- Zhang DZ, Xiao WL, Zhou R, Xue LF, Ma L. Evaluation of Bone Height and Bone Mineral Density Using Cone Beam Computed Tomography After Secondary Bone Graft in Alveolar Cleft. *J Craniofac Surg*. 2015 Jul;26(5):1463-6. doi: 10.1097/SCS.0b013e31825c75ba. PMID: 26114510.
- 5- Canan LW Jr, da Silva Freitas R, Alonso N, Tanikawa DY, Rocha DL, Coelho JC. Human bone morphogenetic protein-2 use for maxillary reconstruction in cleft lip and palate patients. *J Craniofac Surg*. 2012 Nov;23(6):1627-33. doi: 10.1097/SCS.0b013e31825c75ba. PMID: 23147291.
- 6- Barkaoui A, Ben Kahla R, Merzouki T, Hamblin R. Age and gender effects on bone mass density variation: finite elements simulation. *Biomech Model Mechanobiol*. 2017 Apr;16(2):521-535. doi: 10.1007/s10237-016-0834-x. Epub 2016 Sep 22. PMID: 27659482.
- 7- Eghbali P, Becce F, Goetti P, Vauclair F, Farron A, Büchler P, Pioletti D, Terrier A. Age- and sex-specific normative values of bone mineral density in the adult glenoid. *J Orthop Res*. 2023 Feb;41(2):263-270. doi: 10.1002/jor.25379. Epub 2022 Jun 1. PMID: 35578979; PMCID: PMC10083916.
- 8- Grygorieva NV, Povoroznyuk VV, Gopkalova IV, Orlyk TV. [AGE AND SEX FEATURES OF BONE MINERAL DENSITY IN RATS]. *Fiziol Zh (1994)*. 2017;63(1):26-32. Ukrainian. doi: 10.15407/fz63.01.026. PMID: 29975825.
- 9- Turkyilmaz I, Tözüm TF, Tümer C. Bone density assessments of oral implant sites using computerized tomography. *J Oral Rehabil*. 2007 Apr;34(4):267-72. doi: 10.1111/j.1365-2842.2006.01689.x. PMID: 17371564.

Keywords: Alveolar cleft, Maxilla, Bone density, Cleft lip, Cleft palate, Hounsfield unit



OP-066

In Cases of Head and Neck Burns, Fractional Laser is Our Ally for Both Cosmetic and Functional Recovery

Percin Karakol¹, Yasin Canbaz¹, Agit Sulhan¹, Abdullah Colcinar¹, Yasin Babacan¹, Yalcin Akbulut¹, Mehmet Bozkurt²

¹Plastic, Reconstructive and Aesthetic Surgery, Health Science University, Basaksehir Cam ve Sakura City Hospital, İstanbul / Türkiye

²Private Clinic, İstanbul / Türkiye

Introduction and Aim

Among special region burns, burns to the head and neck are the most important both in terms of cosmetic and functional aspects. Treatment modalities include full-thickness skin grafts from suitable areas with color harmony, partial-thickness skin grafts in areas such as the upper eyelid, skin equivalents that can be used in combination, local and distant flaps. Recently, laser treatments and fat injections have been used in patients with burn scars in both early and late stages.

Material and Methods

When laser energy affects the skin, the rays are absorbed, reflected, transmitted, or scattered. Among these stages, the most important for us clinically is the “absorption” stage. After absorption, the heat emitted by the laser has effects such as stimulating dermal collagen synthesis in the tissue, changing the structural elements of hair follicles and endothelial cells in blood vessels. Fractional lasers are divided into ablative and non-ablative, and they are mostly used for skin surface reshaping purposes. Ablative lasers vaporize the tissue in the microthermal zone, leaving an open wound, while non-ablative lasers coagulate the tissue in this zone without damaging the stratum corneum. Referrals from the Burn Unit of 20 adult patients with head and neck burns were treated with fractional laser therapy under local anesthesia, using wavelengths and pulse distances suitable for aesthetic subunits during the remodeling phase. After the procedure, patients were followed up with topical epithelizing agents, and zinc and selenium support were provided through oral preparations.

Results

After the procedure, a decrease in the redness of scar lines, softening, reduction in functional damage such as ectropion formation following a decrease in scar areas of functional impact like oral commissure and eye area was observed in the early period after peeling in the first week. Neck joint openings and chin sternum distances were recorded, and at the 6th month, the same procedure was repeated with concurrent fat and PRP injections. At the 12th month, the results were significantly different from similar burn cases without treatment, as observed visually through VISIA analysis.

Discussion and Conclusion

Fractional laser types used in skin renewal peel the epidermis and dermal tissue, while also increasing collagen remodeling and initiating the healing process by stimulating the synthesis of other extracellular skin matrix components. In the early and late scar management of special region burns containing both psychological and social components dominant and many different aesthetic units like facial and neck burns, Fractional laser treatment should not be forgotten as an option among alternatives.

Keywords: laser, head, neck, burn, fractional laser



OP-067

Recipient Vessel Problems and Solutions for Frontal Scalp Defects

Yusuf Alper Aytac, Mustafa Canberk Gürbüz, Emrah Kağan Yaşar, Murat Şahin Alagöz

Department of Plastic, Reconstructive and Aesthetic Surgery, Kocaeli University Faculty of Medicine, Kocaeli / Türkiye

Introduction

The superficial temporal artery and vein are two of the most frequently preferred vessels in frontal scalp free tissue transfers. The anatomical variations, lack of sufficient vascular calibration and propensity to vasospasm of aforementioned vessels may bring out undesired challenges within reconstructive planning. The methods we frequently use to deal such difficulties were reviewed in order to find ideal solutions to cope with these challenges.

Material and Method

Patients with large tissue defects in the anterior scalp and frontal region who had underwent free tissue transfer between the years 2020-2023 were reviewed.

7 patients, 6 of which underwent microvascular free tissue transfer and one underwent scalp replantation were reviewed.

The flaps of choice were anterolateral thigh flap (ALT) in three cases, 3 latissimus dorsi (LD) myocutaneous flap in 3 cases and amputated scalp soft tissue for the scalp replantation case. All of the aforementioned flaps were free flaps, performed by using microsurgical techniques. In all of the cases, the superficial temporal artery was preferred as the recipient vessel, but it was observed that vascular structures in the submandibular region were needed in patients who underwent latissimus dorsi flap and replantation, and the use of vein graft was required in two of these patients. For the patients with latissimus dorsi flap who did not undergo vein grafting, latissimus dorsi muscle was thinned, and then placed in the defect created in the preauricular region. This bulky muscle tissue was revised with the following weeks. In one patient, the absence of flow was observed in superficial temporal vein (STV) anastomosis in the post-operative follow-ups and immediate anastomosis revision was performed by using a vein graft.

Methods that were used in order to overcome challenges regarding the recipient vessel are documented.

Results

Microvascular surgery were performed for reconstruction of the aforementioned region in a total of 7 patients, 6 of which microvascular free tissue transfer and one is scalp replantation. The flaps of choice were anterolateral thigh flap (ALT) in three cases, 3 latissimus dorsi (LD) myocutaneous flap in 3 cases and amputated scalp soft tissue for the scalp replantation case. In all of the cases, the superficial temporal artery was the choice of the recipient vessel, but it was observed that vascular structures in the submandibular region were needed in patients who underwent latissimus dorsi flap and replantation, and vein graft was required in two of these patients. In patients with LD flap who did not undergo vein grafting, it was observed that the latissimus dorsi muscle was thinned by perivascular muscle tissue reduction, and then placed in the defect opened in the preauricular region. This bulky muscle tissue was revised later. In one patient, the absence of flow was observed in superficial temporal vein (STV) anastomosis and anastomosis was revised by using a vein graft.

All of the cases were transferred to ICU postoperatively and discharged the following day. Subsequent treatments and follow-ups were carried on in the plastic, reconstructive and aesthetic surgery ward.

Each patient was given antibiotics, iv fluid therapy, analgesics, gastroprotective agents, dexamethasone, low molecular weight heparin (LMWH) and pentoxifylline. Apart from these, no other antiaggregant or anticoagulant agents were used.

Catheter assisted intermittent injections of marcaine and papaverine were applied to the anastomosis line in all patients.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Except for one patient who underwent anastomosis revision surgery due to lack of venous flow within superficial temporal vein in the postoperative period, no complications related to anastomoses or anastomosis-related flap necrosis or soft tissue loss were observed.

However, in one patient, local necrosis of the flap due to compression while in the ICU was observed, which was managed conservatively without the necessity of any surgical intervention.

Discussion and Results

The superficial temporal artery and vein, which are frequent vessels of choice due to lack of vascular structures in the relevant region, can be evaluated preoperatively in terms of clinically and radiologically. The foreseen pedicle length of the flap to be preferred and the distance between defect and the recipient vessels should be evaluated meticulously. For the foreseeable perioperative vascular problems, methods such as interpositional vein grafting by reaching the neck or using a preauricular defect should be kept in mind.

Keywords: Frontal, Scalp, Free flaps, Scalp reconstruction, Recipient vessel



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Figure 1



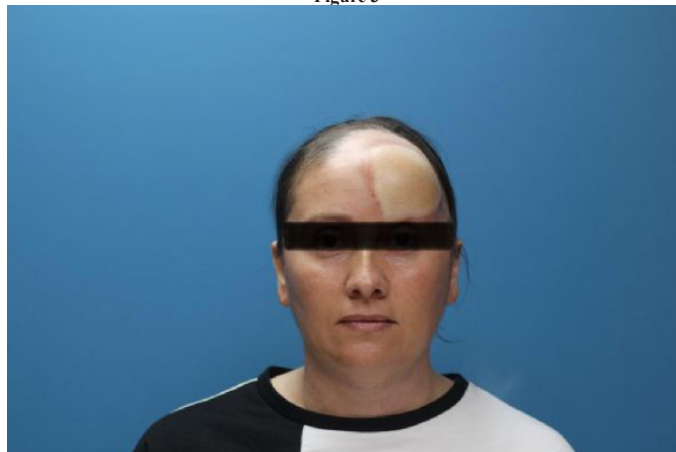
36-year-old female patient with left frontal region tumoral lesion.

Figure 2



Perioperative view.

Figure 3



Late term result of the patient who underwent microvascular reconstruction by using ALT free flap.

OP-068



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Reconstruction Results with Free Pulp Flap, Clinical Experience

Ahmed Şamil Güvel, Ramazan Erkin Ünlü, Burak Yaşar, Hasan Murat Ergani, Özer Özmut, Özden Baz, Rıza Türk

Ankara Bilkent Şehir Hastanesi, Plastik Rekonstrüktif ve Estetik Cerrahi Anabilim Dalı, Ankara / Türkiye

Introduction

Fingertip soft tissue defects, which are common in the modern era, can be challenging to manage, as they can lead to functional impairment and decreased quality of life. Reconstruction alternatives range from primary closure, skin grafts, local, pedicled or free flaps. Surgeon should consider most suitable method for various circumstances of the patient. Free pulp flap reconstruction has emerged as a valuable technique to address such defects, providing functional and aesthetic reconstruction. This abstract aims to highlight our clinical experience, the advantages of this flap, the surgical approach, and the results of free pulp flap reconstruction.

Materials and Methods

Between December 2022 to May 2023, five patients with finger pulp defects underwent treatment via the transplantation of pulp tissue from the second toe, with the plantar vein, artery, and nerve of the toe. An anastomosis of the toe and finger artery, an anastomosis of the toe and finger vein and nerve coaptation was conducted. Four of patients were males and one patient was female. All of the flaps were done in elective situation after emergency post-traumatic finger amputation replantation operation failure. The cases included reconstruction of one thumb, two index and two ring finger. All of the digits reconstructed with second toe pulp flap. Follow-up evaluation included both functional and aesthetic assessment. Donor tissue sites were primarily closed without deformities or other complications with acceptable donor site morbidity.

Results

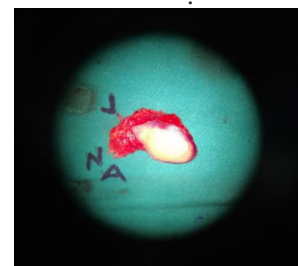
Three flaps survived completely, one suffered partial loss, and one flap failed totally. The patient with total flap failure has had a pheochromocytoma that accidentally found after hypertension couldn't regulated. The median follow-up period was 5 months (range 2-7 months). Patients reported partial recovery of touch sensation in the free pulp flap at two months post-surgery, while pain recovery was evident in some patients at 5 months post-surgery. The Semmes-Weinstein monofilament score varied from 5-8 mm. There was the return of temperature sensation in three of patients; two had cold intolerance. There were no deformities or complications were observed at the donor site. Patients ability to walk normally was not disrupted.

Conclusions

The free pulp flap is a good choice for fingertip defects reconstruction with a great coherence. This surgical approach can easily be conducted with satisfactory clinical outcomes. The pulp of the toe provides a coherent source to cover the fingertips.

Keywords: Finger Tip, Toe pulp, Free Flap, Hand injury, Digital pulp defect, Second toe, Transplantation

Free pulp flap late post operational follow up



Intraoperational free toe to pulp flap

OP-069



Is Implant Selection Important in Metacarpal Shaft Fractures? A Comparison of Open Reduction Internal Fixation and Closed Pinning

Ebubekir Eravsar¹, Ali Özdemir²

¹Konya City Hospital, Orthopaedics and Traumatology, Konya / Türkiye

²Selçuk University Faculty of Medicine, Hand Surgery, Konya / Türkiye

Introduction and Objectives

Metacarpal fractures constitute approximately 36% of all hand fractures(1). These fractures can occur due to direct blows, axial loading, and torsional loading on the metacarpals(2). In cases where there is significant bone shortening or unacceptable angulation due to the fracture, attempting conservative treatments may lead to poor functional outcomes. In such situations, surgical options become more favorable. The ideal surgical technique for stabilization and fixation should aim to achieve maximum bone healing with minimum cost, proper rotation, length, and alignment, and a quick restoration of normal functions. The most commonly preferred surgical treatment methods are plate-screw osteosynthesis and pinning with K-wires. These techniques offer effective stabilization and fixation of the fractured bone, facilitating proper healing and functional recovery.

K-wires are considered to have advantages in terms of being technically easy to apply, minimally invasive, and cost-effective. However, their biomechanical stability is believed to be relatively less compared to other method. On the other hand, miniplate fixation provides a more stable fixation despite the drawbacks of requiring open surgery, being technically more challenging, and having higher costs(3). This belief may encourage surgeons to promote early mobilization. Early movement can increase joint flexibility, reduce swelling, and enhance functional recovery, while also preventing tendon adhesions(4).

Both treatment methods have their own advantages and disadvantages. The purpose of this study is to evaluate whether one of these two treatments has superiority over the other from an orthopedic perspective. The aim is to assess and compare the outcomes of the mentioned treatments to determine their effectiveness in managing metacarpal fractures.

Materials and Methods

Between the years 2016 and 2021, metacarpal shaft fractures that were surgically treated were retrospectively investigated through the clinical archives. Open fractures, intra-articular fractures, cases with vascular, nerve, or tendon injuries, injuries requiring flap surgery, and bennett and reverse bennett fractures were excluded from the study. After excluding these cases, a total of 49 metacarpal fractures were included in the study, with 18 of them treated using K-wire fixation and 31 treated using plate-screw fixation. In the surgical technique of K-wire application, after closed reduction of the fracture under fluoroscopy guidance, two retrograde K-wires were used. The use of two wires aimed to achieve a more stable fixation, especially in rotational aspects. During miniplate application, a dorsal approach was used, and the extensor tendon was retracted to access the fracture site. The miniplate and screws were then used for fixation at the fracture site (Fig. 1). In this study, the imaging of these patients, complications that developed during follow-up, and measurements of range of motion (ROM), Q-DASH (Quick Disabilities of the Arm, Shoulder, and Hand), and VAS (Visual Analog Scale) scores were compared. Normality assessments were conducted using Levene and Kolmogorov-Smirnov tests. Accordingly, non-parametric Mann-Whitney-U test was used for intergroup comparisons.

Results

In two patients who underwent plate-screw osteosynthesis, early implant failure was observed, and subsequently, stronger implants were used for internal fixation. Satisfactory results were achieved in the follow-up of these two patients. When the two groups were compared, no statistically significant difference was observed in terms of ROM (U=274.5, p=0.921), Q-DASH scores (U=276, p=0.946), and VAS scores (U=261, p=0.672) (Fig. 2,3). The immobilization time for patients treated with miniplate was significantly less than those treated with K-wires (1.7 weeks vs. 3.9 weeks) (U=39, p<0.0005) (Fig. 3)



Discussion and Conclusion

The treatment of metacarpal fractures is highly important for maintaining hand function. The primary advantages of percutaneous fixation with K-wires include being a minimally invasive technique, having low cost, and enabling rapid application. Since the fracture site is not opened, it helps preserve the hematoma, which is essential for bone healing. Fixation with K-wires often promotes healing through the formation of callus and secondary bone healing is observed. However, K-wires are biomechanically flexible implants, which may require excessive immobilization. This can lead to early limitations in movement and joint stiffness, which can affect hand function(5). K-wires can be applied either in an antegrade or retrograde manner. Antegrade application is believed to be clinically more successful in the early stages(6). In the case of miniplate fixation, it provides a strong biomechanical fixation, allowing for early mobilization. It offers a more anatomical reduction and promotes primary bone healing without the formation of callus. However, it requires an incision that opens the fracture site, which may lead to potential issues such as infection, scarring, or nonunion. Concerns may arise about the possibility of tendon irritation due to bulky implant placement right below the tendon in miniplate applications. However, this is generally not observed(3).

In our study, patients who underwent miniplate fixation showed a significant advantage in early initiation of movement. However, it is important to note that both K-wire and miniplate fixation methods have been yielding excellent results in the surgical treatment of metacarpal fractures. No superiority in outcomes could be demonstrated for plate-screw osteosynthesis compared to classic K-wires. Additionally, our study's results align with findings from the literature, where studies comparing miniplate and K-wire fixation for metacarpal and phalanx fractures also did not show any significant difference in outcomes between the two surgical methods(1, 3, 7). However, as shown in our study, early initiation of movement was significantly achieved in miniplate applications(1). One of the most important limitations of the study is the lack of comparison regarding the duration of the surgical procedure. Another significant limitation is the absence of a comparison regarding the number of fluoroscopy shots and radiation exposure during fixation. These aspects could be taken into consideration in future studies.

Both treatment methods can be preferred for the treatment of these fractures if they are applied properly to the technique. Therefore, the most crucial aspect in the choice of implant for the treatment of these fractures is the surgeon's familiarity and expertise with the chosen method.

References

- 1- Vasilakis V, Sinnott CJ, Hamade M, Hamade H, Pinsky BA. Extra-articular Metacarpal Fractures: Closed Reduction and Percutaneous Pinning Versus Open Reduction and Internal Fixation. *Plastic and reconstructive surgery Global open*. 2019 May;7(5):e2261.
- 2- Pandey R, Soni N, Bhayana H, Malhotra R, Pankaj A, Arora SS. Hand function outcome in closed small bone fractures treated by open reduction and internal fixation by mini plate or closed crossed pinning: a randomized controlled trial. *Musculoskeletal surgery*. 2019 Apr;103(1):99-105.
- 3- Wutphiriya-angkul SJTTJoS. Comparison of miniplate and K-wire in treatment of metacarpal and phalangeal fractures. 2009;30(1-2).
- 4- Wang D, Sun K, Jiang W. Mini-plate versus Kirschner wire internal fixation for treatment of metacarpal and phalangeal fractures. *The Journal of international medical research*. 2020 Mar;48(3):300060519887264.
- 5- Chin SH, Vedder NB. MOC-PSSM CME article: Metacarpal fractures. *Plastic and reconstructive surgery*. 2008 Jan;121(1 Suppl):1-13.
- 6- Kim JK, Kim DJ. Antegrade intramedullary pinning versus retrograde intramedullary pinning for displaced fifth metacarpal neck fractures. *Clinical orthopaedics and related research*. 2015 May;473(5):1747-54.
- 7- Ahmed Z, Haider MI, Buzdar MI, Bakht Chughtai B, Rashid M, Hussain N, et al. Comparison of Miniplate and K-wire in the Treatment of Metacarpal and Phalangeal Fractures. *Cureus*. 2020 Feb 19;12(2):e7039.

Keywords: metacarp, metacarpal fracture, miniplate, k-wire, closed reduction



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Figure 1



Figure 2

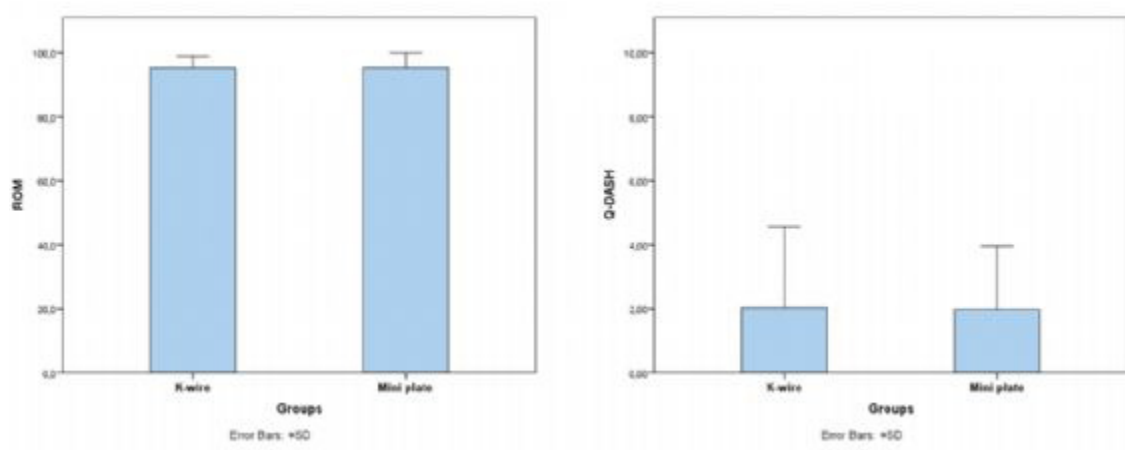
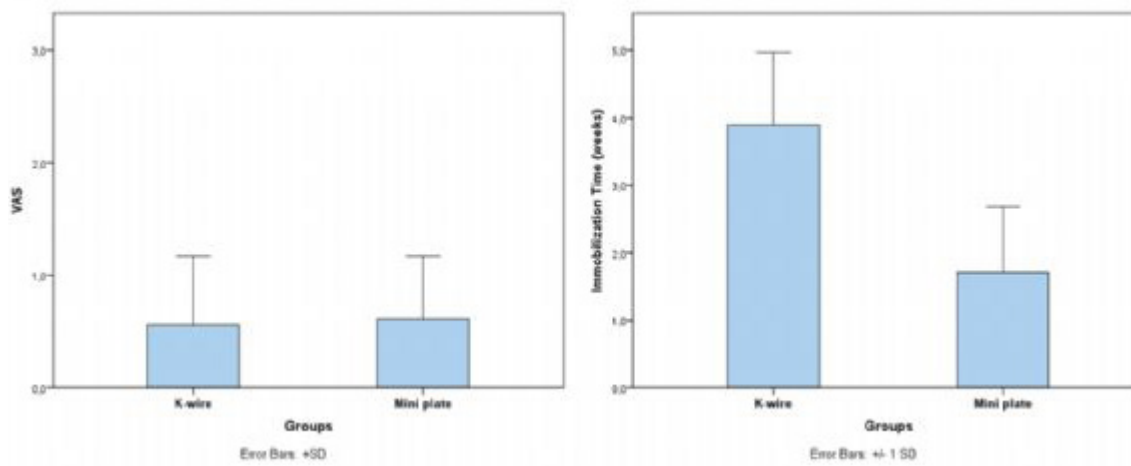


Figure 3





OP-070

Management of the Rope Friction Burn and Review of the Literature

Nuh Evin¹, Emine Parlak Kapucu¹, Şeyda Güray Evin²

¹Department of Plastic, Reconstructive and Aesthetic Surgery, Bezmialem Vakıf University, İstanbul / Türkiye

²Department of Plastic, Reconstructive and Aesthetic Surgery, Marmara University, İstanbul / Türkiye

Introduction

Friction is the force that prevents two bodies or surfaces in contact with each other from sliding over each other. Because friction has the property of preventing movement, it has the effect of reducing the mechanical energy of the objects. To the extent that the mechanical energy is reduced, it is converted into thermal energy.[1] The increased thermal energy causes burn injury, and mechanical friction causes tissue damage. This type of injury is called friction burns.[2]

The most common etiologies of burns are contact, scalding, flames, chemicals, and electricity burns. However, friction burns generally represent a meager etiological rate (1%) admitted to the emergency department with burns.[3] Most of them may be missed and causes functional and cosmetic deformities.[4]

Among the causes of friction burns, road traffic accidents, sports equipment injuries, and exposure to cleaning robots account for a large proportion.[5] Rope injuries are also a significant cause of friction burns. Rope injuries are mechanical and thermal damage to the skin caused by rapid or repetitive friction from a coarse rope or cable. Rope injuries usually occur in rope-pulling races, aerial acrobatics, rock climbing, cattle halter pulling, camping, boating, and fruit pickers cutting their basket ropes. Depending on the severity of the trauma, the most common rope injuries are superficial or deep burns, which can result in vascular, nerve, and tendon lacerations, dislocations and fractures of the joint and bone, and amputations of the fingers due to circular injuries [5]

This paper presents our experience managing rope friction burns and reviews the literature.

Materials and Methods

23 patients were treated for full-thickness defects after rope friction burn were retrospectively reviewed. The study did not include multiple trauma patients, first and second-degree superficial burns that can be treated conservatively without surgery, patients who had mental problems, and patients who did not complete 12 months of follow-up. Demographic characteristics of patients, comorbidities, injury mechanisms, localization and dimension of defects, surgical procedures, complications, and follow-up were researched. All patients enrolled provided written and verbal informed consent before surgery. The study was conducted in compliance with the principles of the Declaration of Helsinki and approved by the local ethics committee.

Before and at 12 months after surgery, functional disabilities of the injured hand were evaluated using the disabilities of the arm, shoulder, and hand (DASH) by patients. At 12 months after surgery, surgical scars were evaluated using the patient and observer's scar assessment scale (POSAS) by patients and two observers selected from independent plastic surgeons with at least five years of experience. All results were compared statistically. This paper presents our experience managing rope friction burns and reviews the literature.

Surgical Procedure and Postoperative Care

Serial debridement and reconstructions were performed in all patients under tourniquet and local and general anesthesia. After debridement, defect dimensions and tissue deficiencies were determined. Reconstruction was performed simultaneously. Patients were followed up for 15.8±3.5 (12–30) months.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 15 September
Congress

Result

A total of 23 patients (6 female, 17 male; mean age, 31.4 ± 9.5 years, range 15-46) were included in this study. Ten patients had various comorbidities, including smoking ($n=7$), diabetes mellitus ($n=2$), and asthma ($n=1$). The etiologies included animal halter ($n=10$), tug-of-war ($n=8$), rock climbing ($n=3$), and boat rope ($n=2$) injuries. Six patients had tissue defects in the bilateral hands, 13 patients had tissue defects in the right hand, and four patients had tissue defects in the left hand. Four patients had tissue defects in one region, 14 patients in 2 regions, three in 3 regions, one in 4 regions, and one in 7 regions. The mean size of defects was 6.8 ± 1.5 cm². In 9 patients, at least one of the vascular, nerve, and tendon structures was injured. Debridement and primary repair in 11 patients, full-thickness skin graft in 5 patients, local flaps in 4 patients, and free flap surgeries in 3 patients were performed. Postoperatively, all surgical sites healed uneventfully without early and late complications. Preoperatively, severe functional limitations of the hands improved after reconstruction (mean preoperative DASH: 83.9 ± 4.02 ; 12th-month DASH: 6.65 ± 2.57), and the improvement was significant ($p < 0.001$). Mean patients' and observers' scar scores were 2.8 ± 0.19 and 2.87 ± 0.17 , with no significant differentiation ($p = 0.106845$).

Discussion

The rope friction burns present with various clinical deformities, depending on the severity of the trauma. There need to be more studies on rope burn injury in the literature. It is frequently encountered as a type of injury that accompanies other traumas. The rope friction burns are usually seen in energetic young adult men actively participating in sports or adrenaline-addicted physical activities. Hummel et al.[2] presented 26 cases of waterskiing-related injuries. Twenty-one patients were male, five were female, and the mean age was 26. Regan et al.[3] presented eight patients with leading horse injuries. Six of these patients were female, and two were male. Four of the patients were adolescents, and 4 in the young age group. Their mean age was 26.6 ± 15.6 . Kirvan et al.[4] present 22 patients with roping injuries. The mean age of them was 29.5 years-old. Fifteen of them were female, and seven were male. Four patients were in the adolescent group (between 12 and 17 years old), and 18 were in the young adults (between 18 and 55 years-old). In our study, 17.4% of the patients were adolescents, 82.6% were young adults, and 73.9% of the patients were male, 26.1% were female.

The etiology of rope friction burn varies in the literature. Regan et al.[1] reported a study of 8 cases of hand injuries due to the inappropriate grip of the reins or halter rope while leading a horse. The defects were located on the thumb ($n=4$), index ($n=1$), middle ($n=1$), ring ($n=1$), and trim ($n=1$) fingers. Five of them underwent reconstruction with abdominal interpolation flap, toe to hand free flap, cross-finger flap, tendon and nerve repair, and dislocation reduction. However, 3 of them underwent finger amputation. Kirwan et al. [2] analyzed 22 patients injured during the rodeo. It was determined that 19 of these patients were caused by the rope in the rodeo. In the study of 38 finger injuries, replantation of 9 patients, including ten fingers, was successful, while replantation of 7 fingers of 3 patients failed. In this study, it was determined that the most commonly injured finger was the thumb. 83% of the dominant hand was injured. Most injuries occurred at the proximal phalanx level. The thumb alone injured 63 percent, and with other fingers, 16 percent. In cases where amputations were incomplete, flexor tendons remained intact 86% of the time. It is also known that injuries due to animal halters may cause friction burns and amputations in the hand during the animal's escape by entangling the halter to the finger in the regions dealing with animal farming. The animal halter was the most common etiologies in our study, with 43.5% of the patients. The patients generally lived in urban areas and were working in animal farming. The injury mechanisms were reported to have occurred when the finger was caught in the animal's halter, and the animal escaped. Among the 23 patients in our study, ten patients had animal halter etiology. One of these patients had a bilateral hand injury, and three fingers were affected. In addition, the patient had a digital artery and digital nerve injury. FTSG was used in the treatment of this patient. Seven patients had isolated right-hand injuries, six had two fingers, and one had one finger injury. In addition, one patient had digital artery and digital nerve injury, and one patient had SFT injury. 4 of the seven patients were treated with primary repair, one local flap, 1 FTSG, and one free flap. 2 patients had isolated left-hand injury. Patients had 1 and 2 finger injuries, respectively. Both patients had digital nerve injuries. One patient was repaired with primary and another with FTSG. We did not perform finger amputation.



Tug-of-war injuries have been widely reported in the literature, but detailed data on hand injuries caused by tug-of-war have yet to be included. Tug-of-war can cause superficial fractional burns and full-thickness burns, and other structures, such as the digital artery, can be damaged. Smith et al.[1] examined 252 tug-of-war athletes, 187 males and 65 females. Among 149 injuries in these athletes, strain-type injuries were 62 and accounted for 41.2% of all injuries. Abrasion/burn/blister-type injuries were 29 and accounted for 19.5% of the total injuries. Ligament sprain, bruise/contusion, dislocation, and tendinitis were other injury types. Regarding the injury location, upper extremity injuries accounted for 19% of the total injuries. Tug-of-war injuries were the second most common etiology in our study, with 34.8%. In our study, 8 of 23 patients were injured due to tug-of-war. Four patients had bilateral hand injuries, and multiple fingers were affected. 2 patients had isolated right-hand injuries.

The other two patients had isolated left-hand injuries. The number of affected fingers was 2. 3 of 8 patients recovered with the primary repair; two patients were repaired with a local flap, one with FTSG, and one with a free flap.

Logan et al.[1] reported that 9% of the 545 cases included in the study were rope burns after rock climbers. It was stated that 25% of total injuries had finger tendon damage, and lacerations and abrasions were in second place with 15%. In our study, 13% of patients had hand injuries due to climbing. In these patients, friction burns occurred when they lost their balance while climbing and tried to hold on to the rope they were tied to when they fell. They had isolated right-hand injuries; 1 patient had a single finger injury and an additional digital nerve injury. Primary repair was performed. 2 of the patients had two finger injuries, and 1 of them also had digital artery and nerve injury. This patient was repaired with a free flap, while the patient with no additional injury was repaired with a local flap.

Hummel et al.[1] presented water-skiing-related injuries of 26 patients. 4 of them were injured due to the tow rope of the boat; 37 years-old female patient had a degloving injury and open phalanx fracture in the thumb, 33 years-old male patient had tip avulsion and open phalanx fracture, 36 years-old male patient had index finger avulsion, forearm laceration, and humerus fracture, and 15 years-old male patient had a rope burn, skull fracture. In our study, 8.7% of the patients had boat tow rope-related injuries. One of these patients had a bilateral hand injury, and three fingers were injured. Others had isolated right-hand injuries. We used local flaps to treat these patients and encountered no complications.

References

- 1- Marchalik, R., et al., Upper Extremity Friction Burns in the Pediatric Patient: A 10-year Review. *Plast Reconstr Surg Glob Open*, 2018. 6(12): p. e2048.
- 2- Castana, O., et al., Traumatic injuries with deep abrasion: "a burn". *Ann Burns Fire Disasters*, 2009. 22(1): p. 44-7.
- 3- Ewings, E.L. and J. Pollack, Pediatric upper extremity burns: outcomes of emergency department triage and outpatient management. *J Burn Care Res*, 2008. 29(1): p. 77-81.
- 4- Attalla, M.F., A.A. al-Baker, and S.A. al-Ekiabi, Friction burns of the hand caused by jogging machines: a potential hazard to children. *Burns*, 1991. 17(2): p. 170-1.
- 5- Agrawal, A., S.C. Raibagkar, and H.J. Vora, Friction burns: epidemiology and prevention. *Ann Burns Fire Disasters*, 2008. 21(1): p. 3-6.
- 6- Hummel, G. and B.J. Gainor, Waterskiing-related injuries. *Am J Sports Med*, 1982. 10(4): p. 215-8.
- 7- Regan, P.J., J.O. Roberts, L. Feldberg, and A.H. Roberts, Hand injuries from leading horses. *Injury*, 1991. 22(2): p. 124-6.
- 8- Kirwan, L.A. and F.A. Scott, Roping injuries in the hand: mechanism of injury and functional results. *Plast Reconstr Surg*, 1988. 81(1): p. 54-61.
- 9- Smith, J. and B. Krabak, Tug of war: introduction to the sport and an epidemiological injury study among elite pullers. *Scand J Med Sci Sports*, 2002. 12(2): p. 117-24.
- 10- Logan, A.J., N. Makwana, G. Mason, and J. Dias, Acute hand and wrist injuries in experienced rock climbers. *Br J Sports Med*, 2004. 38(5): p. 545-8.

Keywords: Finger injury, friction burn, hand injury, rope burn, rope injury

Figure 1





OP-071

Hand Tumors in Single Center Experience

Furkan Cestepe, Sabri Öztürk, Burak Arkan, Kamuran Zeynep Sevim, Hüseyin Emre Ulukaya

University of Health Science, Sisli Hamidiye Etfal Training and Research Hospital Plastic Surgery Department, İstanbul / Türkiye

Introduction

Hand tumors are common in primary healthcare. They have the potential to impair functioning abilities. According to studies, 15% of all soft-tissue tumors and 6% of bone malignancies develop in the hand (1). Overall, hand tumors have a good prognosis and are benign in 95% of cases (2). Unlike all other areas of the body, malignant tumors are frequently superficial and small. Usually, they appear as painless lesions on sun-exposed regions, such as dorsum of the hand. Squamous cell carcinoma (SCC), basal cell carcinoma (BCC), and melanoma are most prevalent skin cancers of the hand, respectively (3). In this study, hand tumors in the last 5 years are evaluated in our center.

Methods

The medical records of 36 men and 40 women (mean age 43.8 years) who had hand tumors removed between June 2018 and June 2023. The locations were divided into three main groups: (a) distal to the metacarpophalangeal joints (MCPJs) (Group 1); (b) between the MCPJs and carpometacarpal joints (CMCJs) (Group 2); and (c) between the CMCJs and the radiocarpal joint (RCJ) (Group 3).

Results

There are 20 of our patients with malignant hand tumors, 15 of them are SCC, 2 of them are Bowen's disease (in situ SCC), 2 of them are malignant melanoma and 1 of them is BCC. Out of 20 malignant tumors, 8 (40%) belonged to Group 1, 10 (50%) to Group 2, 2 (10%) to Group 3. The most common malignant tumors in all groups are SCC, in addition, SCC is most commonly exist in Group 2. Of the malignant tumors in group 1, 4 of them originated from the thumb, 3 of them are from the ring finger and 1 of them from the index finger.

There are 56 patients with benign hand tumors; 19 of them are Giant Cell tendon sheath tumors (GCTSS) and 13 of them are ganglion cysts. Out of 56 benign tumors, 36 (64.2%) belonged to Group 1, 7 (12.5%) to Group 2, 13 (23.2%) to Group 3. 16 of GCTTS are from Group 1, and it is the most common benign tumor from Group 1. Ten of the ganglion cysts are exist in Group 3, and it is the most common benign tumor from Group 3.

According to the results of our clinic, malignant tumors are most common in Group 2, while benign tumors are most common in Group 1.

Discussion and Conclusion

Our results supported those in the literature that benign tumors of the hand are more prevalent than malignant tumors (4). We found that ganglions were the most frequent tumors removed from hands. However, since ganglions can be asymptomatic and may not require excision, the true incidence may be greater (5). Many patients complaint from cosmetic appearance of the cyst and fair from malignant transformation. A minority of patients had pain.

Most hand cancers are caused by skin cancer. Early diagnosis and treatment of these lesions can reduce the burden of the disease (6). A multidisciplinary strategy involving hand surgeons, dermatologists, oncologists, and radiation oncologists is frequently required for advanced disease. Secondary metastatic tumors in the hand are quite uncommon (%0.1) (7). The primary method of diagnosis is clinical, however X-ray, USG, and MRI are useful diagnostic tools. At the diagnosis stage, radiology's function is to first identify the anatomical region from which the lesion is arising.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

References

- 1- Kransdorf MJ, Meis JM. From the archives of the AFIP. Extraskelatal osseous and cartilaginous tumors of the extremities. Radiographics. 1993;13:853-84.
- 2- J. Sacks, K. Azari, S. Oates, D. Chang. Benign and malignant tumors of the Hand. Neligan PC Plastic Surgery. Neligan PC Plastic Surgery Saunder, vol. 6, Elsevier, Philadelphia (2013) p. 311-32.
- 3- Erum N Ilyas, Charles F Leinberry, Asif M Ilyas. Skin cancers of the hand and upper extremity. J Hand Surg Am. 2012 Jan;37(1):171(8).
- 4- Campbell DA, Millner PA, Dreghorn CR. Primary bone tumours of the hand and wrist. J Hand Surg Br. 1995;20:5-7.
- 5- Mitchell E Nahra, John S Bucchieri. Ganglion cysts and other tumor related conditions of the hand and wrist. Hand Clin. 2004 Aug;20(3):249-60.
- 6- Sanjeev Kakar, Ryan Endress. Skin cancer of the hand: current concepts. J AM Acad Orthop Surg. 2015 May;23(5):307-16.
- 7- N K Datta, K P Das, P K Aish, M Datta, S K Banik, S K Sen, R M Chowdhury. Management of the Hand Tumors. Mymensingh Med J. 2023 Jan;32(1):135-143.

Keywords: Hand tumors, carcinoma, malignant, giant cell tendon sheath tumours, ganglion



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-072

An Entity As Important As The Right Technique In Cts Surgery: Detailed Preoperative Examination

Ibrahim Caltuner, Gökçe Yıldırım, Zekeriya Tosun

Selçuk Üniversitesi Tıp Fakültesi Plastik Rekonstrüktif ve Estetik Cerrahi Anabilim Dalı, Konya / Türkiye

Introduction

Carpal tunnel syndrome (CTS) is the most common entrapment neuropathy of the upper extremity, diagnosed by a thorough examination of the hand. Early symptoms of carpal tunnel syndrome include pain, numbness, and paresthesias. In the early stages of the disease, symptoms usually occur at night while lying down and subside during the day. As the disease progresses, symptoms also occur during the day, especially with certain repetitive activities such as drawing, typing, or playing video games. With advanced disease, symptoms may be constant.

Typical occupations of patients with carpal tunnel syndrome include those who work at computers for extended periods of time, those who work with equipment that causes vibration, such as construction workers, and any other occupation that requires frequent, repetitive movements.

Surgery should be considered in patients who fail to improve with conservative treatment and in patients with severe carpal tunnel syndrome as defined by electrophysiologic testing. The definitive treatment for persistent carpal tunnel syndrome is surgery with release of the carpal tunnel after nerve conduction studies show significant axonal degeneration. Carpal tunnel release is usually performed by a plastic surgeon or hand surgeon. This procedure can be performed either open or endoscopically. Carpal tunnel release is a procedure in which the transverse carpal ligament or flexor retinaculum is cut, creating more space in the carpal tunnel and reducing pressure on the median nerve. Overnight hospitalization is usually not required. Surgical release of the transverse ligament results in an initial success rate of greater than 90 % and a low complication rate. However, several studies have found that the long-term success rate is lower than initially thought.

Due to its high prevalence, it may be overlooked in busy clinics without thorough examination. However, in cases where median nerve neuropathy is not thoroughly investigated, compression at a level outside the carpal tunnel may result in patients not showing improvement after surgery. In this study, patients who did not improve after surgery were compiled and retrospectively studied.

Material And Method

Between 2020 and 2022, patients who had undergone surgery in other centers and presented to the hand surgery outpatient clinic of our hospital with different complaints at different postoperative follow-up intervals were studied. For each patient, the following information was recorded: Age, sex, postoperative follow-up time (months), complaints, detailed examination findings, Q-DASH scores, Boston carpal tunnel questionnaire results, and presence of hypertrophic scars.

Results

Ten female and nine male patients with an average age of 48 years who had undergone carpal tunnel release surgery in other centers were evaluated in our hand surgery clinic. Patients presented an average of 10 months postoperatively (range was from 4 to 15 months). On examination, nontransient hypoesthesia in the first two fingers (n = 10), loss of pinch strength (n = 5), palmar pain (n = 5), hypertrophic scar (n = 4), and pillar pain (n = 4) were noted.

The patients' mean Q-DASH score was 46.3, and the mean BCTQ score was 44.8. After a thorough examination, five patients were diagnosed with inadequate carpal tunnel release, and five patients were diagnosed and treated for pronator syndrome. The remaining patients received rehabilitation to treat scar and pillar pain.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Discussion

Carpal tunnel syndrome (CTS) is a common nerve condition affecting the upper extremities. The syndrome is diagnosed by examination of the hand and manifests as symptoms of pain, numbness, and tingling. CTS is often associated with repetitive activities and certain occupations such as computer work or construction. Conservative treatments are tried initially, but in severe cases or when conservative methods fail, surgery may be required. Carpal tunnel decompression is an open or endoscopic surgical procedure designed to relieve pressure on the median nerve. The surgery has a high initial success rate, but may be less successful in the long term. In carpal tunnel syndrome surgery (CTS), the most common reason for reoperation is inadequate relief during the initial procedure. However, in this case series, it was reported that there were as many patients with pronator syndrome as with inadequate relief. Because of the high frequency of CTS, a thorough examination may be overlooked in busy clinics. This may result in overlooking various levels of median nerve compression that may present with symptoms similar to CTS and potentially impact surgical outcomes.

In the hand surgery clinic, it is recommended that patients who present with symptoms of sensory compression of the median nerve be carefully evaluated. These symptoms may include pain over the pronator teres with weight-bearing pronation, forearm numbness, loss of pinch strength, and altered sensory perception in the palmar region, which should be maintained at CTS. Examination should also look for weakness in flexion of the first and second fingers.

Conclusion

Therefore, it is critical to differentiate CTS from pronator syndrome, lacertus syndrome, cervical disc herniation, and other similar clinical conditions before operating CTS. This distinction is as important to achieving good postoperative outcomes as the surgical technique itself.

References

- 1- Neurologic Disorders Masquerading as Carpal Tunnel Syndrome: 12 Cases of Failed Carpal Tunnel Release Witt J, Clarke Stevens J Mayo Clinic Proceedings (2000) 75(4) 409-413
- 2- Clinical diagnosis of carpal tunnel syndrome: A systematic review MacDermid J, Wessel J Journal of Hand Therapy (2004) 17(2) 309-319
- 3- The carpal tunnel syndrome: Diagnostic utility of the history and physical examination findings Katz J, Larson M, Liang M Annals of Internal Medicine (1990) 112(5) 321-327
- 4- Carpal tunnel syndrome: Clinical manifestations and diagnosis – UpToDate
- 5- [Diagnostic pitfalls in carpal tunnel syndrome] Petiot P, Bernard E Revue neurologique (2011) 167(1) 64-71

Keywords: Carpal tunnel syndrome, pronator syndrome, physical examination, Median nerve, entrapment



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE

2023

13 September
Pre Congress Course
14 - 16 September
Congress



OP-073

Our Clinical Experiences in Percutaneous Aponeurotomy and Fat Graft for Early-Stage Dupuytren Contractures

Percin Karakol, Yasin Canbaz, Kurtulus Oz, Serhat Inan, Fatih Cinar

Basaksehir Cam and Sakura City Hospital, İstanbul / Türkiye

Introduction

Dupuytren's disease, or Dupuytren's contracture, is a hand condition where the tissue beneath the skin thickens, forming cords that cause fingers to bend inward. Treatment options include non-surgical methods like physical therapy, splinting, and injections. Surgical procedures may be considered if the condition severely affects hand function, involving techniques to release or remove the affected tissue and cords. The choice of treatment depends on the severity of the condition and individual circumstances.

In this study, we present our clinical outcomes of adipose fat grafting with needle aponeurotomy as treatment of early-stage Dupuytren's disease contractures.

Material and Method

Patients

In this study, 13 patients who were treated with this method between January 2023 and

March 2023 in our clinic. Six of the patients, 8 men, and 5 women were diagnosed with diabetes mellitus. The mean patient age was 56 and the mean time to onset of symptoms of Dupuytren's disease was 36 months. There were varying degrees of preoperative MCP and PIP joint contractures in all of the patients, as shown in Table 1.

Operative Technique

All patients were operated under general anesthesia. As a tumescent solution containing 20 ml of 2% lidocaine and 1 ml of 1:1000 epinephrine per liter of physiologic serum solution infiltrated.

At the beginning of the operation, approximately 20 cc (after filtration) fat grafts were obtained from the abdominal region in 11 patients and from the medial thigh of 2 patients (due to abdominal fat paucity) by using a 4 mm liposuction cannula. After the received fat grafts are subjected to filtration and thinning, pathological cords are released via percutaneous aponeurotomy with the 26G needle. The operation was completed by injecting approximately 10 cc of fat into each hand. The patients were used to an extension splint for 2 weeks postoperatively. Each patient received physical therapy for a minimum of 1 month.

Result

Measurements were made at the 1st and 3rd months for postoperative control and contracture degrees were noted. Major complications such as hypoesthesia and hematoma due to neurovascular injury were not observed in any of the patients. Minor wound dehiscence in a patient with diabetes was completely healed with secondary healing. Postoperative MCP joint flexion contractures reach almost normal ROM range, while some PIP joint contractures persist due to pathological changes in structures around the joint capsule. Preoperative and postoperative 3rd-month flexion contracture degrees of the patients are given in Table 1. There was a mean of 19.30 ± 5.94 degrees of flexion contracture in the PIP joints and 19.76 ± 5.68 degrees of flexion contracture in the MCP joints preoperatively. Postoperatively, these measurements were 6.30 ± 2.13 and 4.30 ± 1.93 at 3 months, respectively. There was a statistically significant difference between these measurements ($P < 0.001$).



Discussion and Conclusion

There is no definitive treatment to cure Dupuytren's disease and cease its progression. Contracture bands that are established after the progression of the disease are the main factor that restricts the patient's hand movements and hinder daily life activities. Therefore, treatment options have been developed to eliminate these contracture bands. These treatments are aimed at preventing the formation of contractures such as extension splint and physical therapy in the early stages of the disease. Invasive methods are preferred in untreated or progressive Dupuytren's contractures. There are methods that are classified as open and closed surgical treatments. Partial and total excision of the palmar fascia is prominent in open methods. Open surgery is generally recommended for patients with MCP contracture >30 degrees and or PIP contracture of any degree. Closed methods are more focused on a needle or chemical release of contracture bands. Among these closed methods, steroid injection, collagenase injection, percutaneous needle aponeurotomy are the most common. Closed methods are a good alternative to avoid the risks of surgery, especially in patients who do not meet the indications for surgery.

Among them, needle aponeurotomy is faster, simpler, low risky than collagenase and steroid injection. Technically damage to neurovascular structures by injection is common to all closed methods but it is possible to avoid the side effects of steroid and collagenase. In steroid injection, there are drawbacks such as skin atrophy and depigmentation. Collagenase injection, on the other hand, has local and systemic side effects, albeit rare. One of the main findings of Dupuytren's contracture patients is skin atrophy. An important advantage of fat grafts, which are used widely in plastic surgery, is that they increase skin quality and thickness. For this reason, it is advantageous to use fat graft as a combined treatment in patients undergoing needle aponeurotomy. It is beneficial both to increase the thickness and quality of the atrophied skin and to prevent the recurrence of contractures.

Its major benefit is that fat grafts interpose between the contracture bands and prevent the recurrence of adhesions between the skin and the contracture band. Similar to open surgery, extension splint and effective physical therapy for all patients after the operation are important in long-term success and prevention of recurrence. In our study, patients treated with this method were followed up for a minimum of 3 months. While patients benefit from the method with minimum risk and maximum yield, we think that at least 1-year follow-up is required for longer-term results. It is clear that the benefits of the method will be better demonstrated in larger randomized controlled trials.

References

- 1- Feldman G, Rozen N, Rubin G. Dupuytren's Contracture: Current Treatment Methods. *Isr Med Assoc J.* 2017 Oct;19(10):648-650. PMID: 29103246.
- 2- McMillan C, Binhammer PJ. Steroid injection and needle aponeurotomy for Dupuytren contracture: a randomized, controlled study. *Hand Surg Am* 2012;37:1307-12.
- 3- Atroshi I, Nordenskjöld J, Lauritzson A, Ahlgren E, Waldau J, Walde'n M. Collagenase treatment of Dupuytren's contracture using a modified injection method: a prospective cohort study of skin tears in 164 hands, including short term outcome. *Acta Orthop* 2015;86:310-5
- 4- Peimer CA, Blazar P, Coleman S, Kaplan FT, Smith T, et al. J Dupuytren contracture recurrence following treatment with collagenase clostridium histolyticum (CORDLESS study): 3-year data. *J Hand Surg Am* 2013;38: 12-22.
- 5- Mickelson DT, Noland SS, Watt AJ, Kollitz KM, Vedder NB, Huang JI. Prospective randomized controlled trial comparing 1-versus 7-day manipulation following collagenase injection for Dupuytren contracture. *J Hand Surg Am* 2014;39 [1933-41.e1].
- 6- McMillan C, Binhammer PJ. Steroid injection and needle aponeurotomy for Dupuytren contracture: a randomized, controlled study. *Hand Surg Am* 2012;37:1307-12.

Keywords: Dupuytren's contracture, fat graft, needle aponeurotomy, fasciotomy, hand surgery

Figure 1



Fat graft injection



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Table 1

Patients	Preoperative MCPJ Contracture Degree	Postoperative 3.month MCPJ Contracture Degree	Preoperative PIPJ Contracture Degree	Postoperative 3.month PIPJ Contracture Degree
Patient 1	20	4	18	9
Patient 2	15	5	14	6
Patient 3	10	3	14	5
Patient 4	25	4	10	3
Patient 5	20	6	25	8
Patient 6	25	3	20	9
Patient 7	15	2	17	5
Patient 8	17	3	16	8
Patient 9	18	5	24	7
Patient 10	14	4	28	4
Patient 11	30	9	30	7
Patient 12	26	2	20	8
Patient 13	22	6	15	3
Mean ±SD	19,76 ±5,68	4.30±1.93	19.30±5,94	6.30±2.13



OP-074

The Effect of Triquetrum Bone Excision in Wrist Arthrodesis: When?

Kamil Yamak¹, Mehmet Tapan²

¹Buca Seyfi Demirsoy Education and Research Hospital, İzmir / Türkiye

²Department of Plastic, Reconstructive and Aesthetic Surgery, Akdeniz University, Antalya / Türkiye

Introduction and Objectives

The wrist has a complex biomechanical structure. When end stage arthrosis in this complex anatomy develops to prevent the movements of the wrist, the movement is restricted and the daily activities of a patient are limited due to pain. This situation seriously affects the quality of life of the patient.

Degenerative, inflammatory, post-infectious, or post-traumatic, painful and restrictive radiocarpal and midcarpal arthritis with active patients are the most common indication for total wrist arthrodesis. (1) Various methods have been defined for wrist arthrodesis and these methods have been tried to be standardized. Wrist flexion-extension, radial and ulnar deviation is no longer be possible in wrist arthrodesis. However, the patient's forearm pronation and supination are preserved. One of the many complications that can be seen after wrist arthrodesis is ulnocarpal impaction (abutment), in which pronation and supination are restricted and painful, and the distal ulna contacts the carpal bones. There are few procedures in the literature that correct this painful condition. The aim of our study was to examine the results of triquetrum excision and its use as a graft during arthrodesis who underwent total wrist arthrodesis due to end-stage wrist arthrosis and had ulnocarpal impaction causing forearm supination pronation limitation.

Material and Methods

Total wrist arthrodesis was performed to 12 patients with degenerative, inflammatory, postinfectious or post-traumatic, painful and restrictive radiocarpal and midcarpal arthritis between 2018 and 2022. The inclusion criteria were: 1) All patients underwent total wrist arthrodesis; 2) Patients who had limited forearm supination and pronation in the preoperative examination and who have ulnar sided-pain in this examination; 3) no arthrosis of the distal radioulnar joint in the preoperative direct radiographs; 4) Positive ulnar variance or ulnocarpal impaction in the preoperative direct radiographs; 5) and ulnocarpal impaction in the forearm full supination and pronation during surgery in the scopic view. Three patients who had all criteria were included in this study. Demographic data, causes of arthrodesis and follow-up periods of the patients were recorded. Before the surgical treatment, the forearm supination and pronation degrees were measured with a goniometer while the patient was in the sitting position, the shoulder was in adduction, the elbow was in 90 degrees flexion, and the forearm was in the neutral position, and the patients' Quick-DASH scores were calculated. Complications that may develop after surgical treatment and union status were evaluated. At the end of the surgical follow-up period, in the first year, forearm supination and pronation degrees were measured with a goniometer and Quick-DASH scores were calculated and evaluated.

Surgical Technique

With the dorsal approach, both the 3rd and 4th compartments are released. The EPL tendon must be transferred dorsal to the extensor retinaculum. With subperiosteal dissection, the third metacarpal, capitulum, lunate, scapoid, triquetrum and dorsal radius are exposed. The Lister tubercle on the radius surface is shaved. All the joint surfaces are shaved. The bone surfaces are brought together. An AO wrist arthrodesis plate or a 3.5 mm LC DCP plate is placed on the dorsal aspect of the third metacarpal and radius. Each hole of the plates must be screwed. The position of fusion is made according to the functional status of the patient and dominant hand. Although the choice of the position depends on being bilateral or unilateral, a slight ulnar deviation and 10-20 degrees of wrist extension are performed. At this time, we control the impaction of the distal ulna and carpal bones with two scopic view both pronated and supinated forearm. If ulnocarpal impaction is seen and indicated, the triquetrum is excised. And the lunate bone that comes into contact with the ulna is brought in front of the radius bone towards the radial side, so that there is no structure on which the ulna can impinge on distally. The excised triquetrum is used as a graft. We did not perform third carpometacarpal joint arthrodesis during surgery. In all three patients, grafts from the distal radius and proximal ulna were used in addition to the use of the triquetrum as a graft. No graft was harvested from the iliac crest. A penrose drain was used in all cases. After wound dressing, a short arm splint was applied.



Results

The mean age of three patients who underwent triquetrum excision to prevent the development of ulnocarpal impaction during total wrist arthrodesis was 42 years. One of the patients was female and two were male. Two patients developed post-traumatic wrist arthrosis, and one patient developed wrist arthrosis due to rheumatologic disease. The patients were followed for an average of 18 months. An AO wrist arthrodesis plate was used in one patient, and a 3.5mm LC DCP plate was used in 2 patients. The supination degrees of the patients were 35 (min 30-max 40) degrees on average, and their pronation degrees were 45 (min 35-max 45) degrees on average before the surgical treatment. The mean of Quick-DASH scores before surgical treatment was 69.7 (min 63.6 - max 75). In the controls at the end of the follow-up, the mean forearm supination degree was 81.6 degrees (min 80-max 85), and the mean pronation degree was 85 degrees (min 80-max 90). The mean Quick-DASH score at the end of follow-up was 5.3 (min 2,3-max 9.1).

It was observed that hematoma developed in one patient after surgical treatment and there was minimal dehiscence at the wound site. With conservative follow-up, the hematoma regressed and the wound site healed. In one patient, extensor tendon irritation was observed in the distal third metacarpal, and the complaint regressed with conservative treatment. In all patients, fusion was achieved in the arthrodesis line. No infection was observed in any patient, no implant failure was observed. At the end of the follow-up, the implant was not removed.

Discussion and Conclusion

Wrist arthrodesis procedures can range from single joint fusion to total wrist arthrodesis, depending on the extent of the disease and the estimated progression of the disease. Partial wrist arthrodesis options should also be considered in a significant portion of wrist degenerative disease. (2) Total wrist arthrodesis continues to be a safe and successful treatment in upper extremity surgery, despite loss of wrist motion and advances in other surgical techniques and implant technology. (1) Rheumatologic diseases, post-traumatic causes [SLAC (scapholunate advanced collapse), SNAC (scaphoid nonunion advanced collapse), nonunion or malunion of distal radius fractures], end-stage Kienbock's disease, spastic wrist contracture, previous arthrodesis in pseudoarthrosis, unsuccessful proximal row carpectomy, Preiser Disease, silicone synovitis and joint arthrosis due to old infection and treatment of unsuccessful wrist arthroplasty can be counted as the main indications. (1, 3) The decision for total wrist arthrodesis is not based only on the radiographic appearance of the wrist. It should be noted that the severely deformed wrist is surprisingly minimally painful and its functional abilities can be satisfactory. (4) Arthrodesis was performed in two patients for post-traumatic arthrosis, and in one patient for advanced wrist arthrosis due to rheumatologic disease.

In a review study, which included a total of 1,782 wrists in which 45 studies were evaluated, an overall complication rate of 29%, consisting of 19% major and 10% minor complications, and nonunion rate of 4.4% were reported. (3) Complete fusion was achieved in the arthrodesis line in all 3 patients in our study. In one patient, hematoma and minimal dehiscence healed uneventfully with conservative treatment. In one patient, extensor tendinitis was observed in the dorsal of the third metacarp, whose complaints regressed with conservative treatment. Implant failure and infection were not observed in any of the patients.

Forearm supination and pronation was necessary for surgical treatment success. (5) Persistent sources of postoperative discomfort and dissatisfaction following a well-performed wrist arthrodesis include ulnocarpal impaction syndrome, which should be carefully evaluated preoperatively and addressed during arthrodesis. (1) It was found that ulnocarpal impaction may develop in many disorders that reduce carpal height and bring the ulnar carpal bones into contact with the distal ulna, but the rate of development of ulnocarpal impaction after arthrodesis has not been definitively determined. (6) Simple excision/resection of the distal ulna, the "Darrach procedure", is usually sufficient in the treatment of ulnocarpal impaction following total wrist arthrodesis, in patients with inadequate DRUJ function, ulnar neutral/negative variance, and inactive patient's requirements. (2) Another approach is hemiresection of the distal ulna or shortening osteotomy of the ulna, especially in the treatment of ulnocarpal impaction with positive ulnar variance. (2) These suggested surgical treatments will alleviate the limitation of motion due to ulnocarpal impaction, however, in ulnar shortening osteotomy, there may be a problem of union in the osteotomy line, and additional problems may develop in young, active patients due to the instability that will develop later in the distal ulna in Darrach resection. (2,8) As a result, these treatments may cause the cause of pain in the wrist to be replaced by another pain. (8) In the literature, Trumble et al. applied triquetrum and pisiform bone excision in patients with ulnocarpal impaction, which restricts forearm movements and causes pain after wrist arthrodesis after fusion. The authors recommended evaluating friction during arthrodesis surgery and excising the carpal bones during arthrodesis to predict impaction problems before they occur. (6)



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

In our study, it was showed that ulnocarpal impaction/abutment syndrome that may develop after total wrist arthrodesis can be prevented in the same session with arthrodesis surgery by excision of the triquetrum after appropriate patient selection, removal of the carpal bone that does not contribute to wrist stability, and removal of the lunate completely in front of the radius on the radial side. We think that it is important to evaluate forearm supination and pronation in the examination performed before the surgical treatment, to evaluate positive ulnar variance and ulnocarpal impaction in the direct X-ray, and to have no signs of arthrosis in the distal radioulnar joint in the selection of the appropriate patient.

The ideal position of the wrist arthrodesis and the joints that must be joined for successful wrist arthrodesis have been discussed in the literature. Some authors argue that a neutral fusion position provides better pronation and supination and better balance of flexor and extensor forces.(8)Others argue that slight extension and ulnar deviation are more beneficial for daily activities.(9) Ulnocarpal impaction may occur due to arthrodesis position and is typically more common when fusion of the wrist in extreme ulnar deviation.(10)The ulnocarpal impaction that may occur with the arthrodesis position can also be prevented by excising the triquetrum and further distancing the lunate from the ulna with the ulnar deviation of the wrist.

During total wrist arthrodesis, the radio-scaphoid, radio-lunate, scapholunate, scaphocapitate, and lunocapitate joints are routinely included in the fusion. There is controversy in the literature regarding the inclusion of the third carpometacarpal joint. (4)In our study, the arthrodesis was not applied to the third carpometacarpal joint, and bridge plating was performed and no clinical problems were encountered.

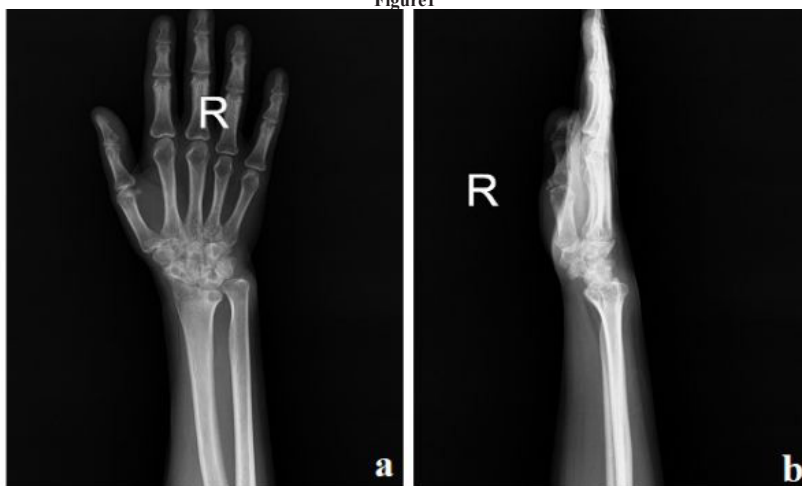
We recommend that this treatment when there is positive ulnar variance, there is no arthrosis in the distal radioulnar joint, pronation-supination is limited preoperatively or intraoperatively, here is an impaction in the ulna, be performed routinely with total wrist arthrodesis procedure.

References

- 1- Jebson PJJ, Adams BD. Wrist arthrodesis: review of current techniques. J Am Acad Orthop Surg 2001; 9(1):53–60.
- 2- Gaspar MP, Kane PM, Shin EK. Management of complications of wrist arthroplasty and wrist fusion. Hand Clin. 2015;31(2):277-292. doi:10.1016/j.hcl.2015.01.004.
- 3- Wei DH, Feldon P. Total Wrist Arthrodesis: Indications and Clinical Outcomes. J Am Acad Orthop Surg. 2017;25(1):3-11. doi:10.5435/JAAOS-D-15-00424.
- 4- Hayden RJ, Jebson PJ. Wrist arthrodesis. Hand Clin. 2005;21(4):631-640. doi:10.1016/j.hcl.2005.08.004
- 5- Rehnagel K. Arthrodesis of the wrist joint. A follow- up of sixty cases. Scand J Plast Reconstr Surg 1971;5(2):120–3.
- 6- Trumble TE, Easterling KJ, Smith RJ. Ulnocarpal abutment after wrist arthrodesis. J Hand Surg Am. 1988;13(1):11-15. doi:10.1016/0363-5023(88)90190-6.
- 7- Bell MJ, Hill RJ, McMurtry RY. Ulnar impingement syndrome. J Bone Joint Surg 1985;67B:126-9.
- 8- Clayton ML. Surgical treatment at the wrist in rheumatoid arthritis: A review of thirtyseven patients. J Bone Joint Surg Am 1965; 47(4):741-750.,
- 9- Barbier O, Saels P, Rombouts JJ, Thonnard JL. Long-term functional results of wrist arthrodesis in rheumatoid arthritis. J Hand Surg Br 1999;24(1):27-31.
- 10- Zachary SV, Stern PJ. Complications following AO/ ASIF wrist arthrodesis. J Hand Surg Am 1995; 20(2):339–44.

Keywords: pain, triquetrum bone excision, ulnocarpal impaction, wrist arthritis, wrist arthrodesis

Figure1



Preoperative X-ray views of Patient 1



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



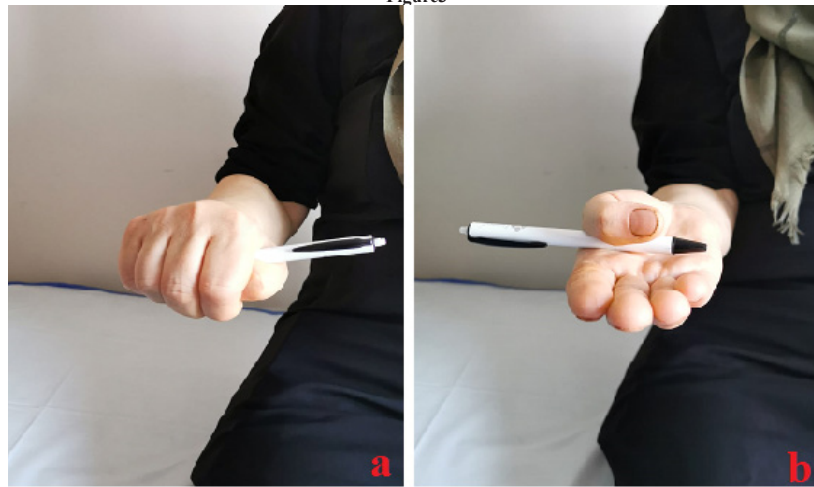
13 September
Pre Congress Course
14 - 16 September
Congress

Figure2



Postoperative X-ray views of Patient 1. Total wrist arthrodesis with dorsal plate.

Figure3



Postoperative forearm pronation and supination



OP-075

Microsurgery Experience in Upper Extremity Traumas Between 2015-2020

Melikhan Tatar, Bilsev Ince, Mehmet Dadaci

Necmettin Erbakan University Faculty of Medicine, Department of Plastic Surgery, Konya / Türkiye

Hand injuries are highly prevalent and often necessitate surgical intervention. Due to their pivotal functional role, these injuries are associated with significant morbidity rates and can result in prolonged labor loss. According to Trybus et al., the musculoskeletal system accounts for a range of 6.6% to 28.6% of all reported injuries, with hand injuries specifically contributing to 28% of all trauma cases.(1)

These injuries primarily occur in industrial settings, but they are not limited to such environments. Incidents also happen at homes, public places, during traffic accidents, and even in sports activities. The continuous advancement of microsurgical instruments, coupled with increased experience, has enabled meticulous postoperative patient monitoring. The use of essential medical agents, including anticoagulants and antiplatelets, following procedures such as replantation, revascularization, and nerve coaptation, has significantly enhanced the likelihood of successful outcomes.

The objective of this study was to contribute to the epidemiological data related to hand injuries in Türkiye by examining the patient profiles at a Hand Surgery Clinic in Konya. A retrospective analysis was conducted on data from patients with hand trauma who were treated using microsurgical techniques between January 2015 and December 2022. The study included a total of 782 patients who underwent revascularization, replantation, and nerve repair procedures. Patient classification encompassed general information, etiology, injury type, and the treatment modality applied, using standardized criteria and methods.

Replanted patients received follow-up care for a duration of 7 to 12 days. All patients who underwent replantation or revascularization were administered a daily dosage of 100-300 mg ASA (acetylsalicylic acid). Similarly, patients undergoing nerve coaptation were provided with vitamin B12 supplementation. In the case of replantation, intravenous heparin infusion was initiated. If no complications arose after assessing blood parameters, the infusion continued for 5 days, followed by the introduction of low molecular weight heparin.

Patients experiencing venous insufficiency during the postoperative period underwent bleeding and leech applications. Upon discharge, patients were prescribed ASA, vitamin B-12, and low molecular weight heparin to support their recovery process.

Result

When the distribution of the patients by gender and age group was examined; It was observed that 782 patients were male (83.9%) and 150 patients were female (16.1%).

While 164 of the patients (17.5%) were in the pediatric group under the age of 18, 678 patients (72.1%) were in the young adult-adult age group between the ages of 19 and 59, and 83 patients (8.9%) were geriatric age group over the age of 60. Considering the etiology of the injury, 443 patients (47.5%) with guillotine injuries, 452 patients (48.4%) with crush injuries, and 37 patients (4.1%) with avulsion injuries. "Punching the glass", which is frequently encountered among patients, was evaluated as a separate factor

The number of patients who had hand injuries as a result of punching glass was 373 (40.02%).

The most common injury level as a result of punching glass was found to be in flexor zone 5. 'Isolated Amputations' occurring in the forearm and distal forearm were seen in 218 patients (23.3%). The most common amputation levels are distal phalanx and distal level of the DIP joint.

When the microsurgical treatment methods applied to the patients are evaluated; 438 arterial anastomoses, 541 nerve coaptations, 223 veins anastomoses performed using microsurgical methods. 37 veins graft was used during arterial anastomosis in patients. Isolated finger replantation was performed in 166 patients Isolated artery anastomosis was performed in 438 patients, and isolated nerve coaptation was performed in 541 patients. 75 patients who underwent replantation were re-operated for revision The number of patients who had stump repair after replantation was 19 (11.4%).



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Discussion

Thanks to advances in microsurgical techniques, replantation and reconstructive procedures success rate has increased. Another important factor affecting the success of replantation surgery is the mechanism of injury

They found that the chance of survival of the finger in replantations after guillotine type amputation was 5.7 times more successful than in replantations after crush and avulsion type amputations as crushing and exposure to avulsion increases, the chance of success decreases in finger(5)

Leech therapy is also very effective in venous insufficiency, but antibiotherapy and hematocrit monitoring are very important. It is common for patients treated for hand injuries to have a significantly higher male gender, especially in the working adult-young adult age group

Although guillotine type injuries were seen most frequently in our examination, our hospital's location in an area where agricultural activities are intense; patients with crush injuries made up a large part of our study

We are thinking that keeping in shelters the rotating parts of agricultural machinery that cause injury, informing the families dealing with agriculture by health workers, informing children about agricultural accidents and prevention methods in schools in regions where the agricultural sector is developed, beneficial in preventing accidents

Hand injuries can be reduced to a large extent by increasing the security factor in the design of social living areas.

When the type and shape of hand injuries are examined, it can be seen that most of the patients do not continue their activities in social life, and cause significant losses in daily life activities, working capacity and social functions, mental problems (2).

In addition, loss of work force, long physical therapy and rehabilitation process, secondary surgery requirements cause a serious economic loss (3).

Therefore, it is extremely important to treat hand traumas with the least possible morbidity in maintaining the quality of life of patients (4).

A microscope with good magnification, an experienced surgeon, sensitive microsurgical instruments, close postoperative follow-up, necessary support materials (leech, sedative, anticoagulant, antiaggregant etc. drugs) and good physical therapy after surgery, we believe that replantation / revascularization will be successful and reduce the morbidities that may develop.

Keywords: amputation, hand surgery, microsurgery, replantation, revascularization



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Finger Transfer



Four Finger Replantation





12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-076

Using a Prophylactic VAC Therapy After Inguinal Lymph Node Dissection

Ismail Tekfiliz¹, Berkay Cinar¹, Can Ilker Demir², Emrah Kagan Yaşar¹, Murat Sahin Alagoz¹

¹Kocaeli University, Medical Faculty, Plastic Reconstructive and Aesthetic Surgery, Kocaeli / Türkiye

²Plastic Reconstructive and Aesthetic Surgeon, İstanbul / Türkiye

Introduction

Inguinal lymph node dissection is frequently used in the diagnosis and treatment of malignant melanomas.¹ High complication rates after dissection has become a problem that needs to be solved. Seroma encountered in approximately 80% of patients after dissection, delayed wound healing, infection, hematoma, and lymphedema are the main complications.² These short and long term complications not only reduce the patient's quality of life but also complicate the treatment of the primary disease. This study aims to compare the rate of complications between negative pressure wound therapy (VAC) and conventional dressing in patients who underwent inguinal lymph node dissection.

Materials and Methods

This study examined 14 patients who underwent inguinal lymph node dissection due to malignant melanoma in our clinic between 2019-2022. Patients with suspected residual tumors after inguinal lymph node dissection and those who could not be followed up for more than a year were excluded from the study. Preoperative photographs of patients planning to undergo inguinal dissection were taken, and a 2x2 cm² area below the inferior femoral triangle was left open during surgery, and a VAC device was applied to the wound area. (Figure 1A-B) In all patients, VAC was operated at a negative pressure of 120mmHg. The VAC device was switched to intermittent mode after 24 hours. Two sessions were applied, and the VAC was changed every four days. Daily drain measurements were taken from the patients. The remaining 7 patients were followed using conventional dressing without VAC application. Daily drain measurements were taken. Both groups were regularly checked for seroma, wound site infection, and hematoma. (Figure 1C)

Results

A total of 14 patients who underwent inguinal lymph node dissection due to malignant melanoma were divided into two groups: conventionally followed (group-1) (n=7) and VAC followed (group-2) (n=7) patients. The demographic characteristics of the two groups were similar. The mean age was 73.2 in Group 1 and 75.6 in Group 2. In patients followed with VAC, the average drain removal time was (n=7) 14.7 days, while it was 8.3 days in the conventionally followed group (n=7). The average daily drain output was noted as 85 mL in group 1 (n=7) and 190 mL in group 2. Seroma was observed in 3 patients (42.8%) in group 1, while it was not observed in group 2 (0%). Wound site infection was not encountered in group 2, whereas it was observed in 2 patients (28.5%) in group 1. (Table-1) No significant changes were observed in lower extremities diameter in both groups, and lymphedema was not observed.

Discussion

Inguinal lymph node dissection is frequently used today to stage and control the disease in high-risk melanoma patients. Although inguinal lymph node dissection offers the possibility of regional disease control in melanoma patients, it also brings along high-risk complications. Among these complications, seroma takes the lead, with wound site infection, lymphedema, and hematoma also being frequently observed. While post-dissection complications are commonly encountered, minimal invasive lymphadenectomy techniques and preservation of the fascia have been developed over the years to cope with these complications. However, the effectiveness and oncological safety of these techniques have not been proven.³

To reduce post-dissection complications, meticulous preparation and surgical intervention are fundamentally required. Eba et al. used sartorius muscle transposition flap in 28 patients to prevent seroma formation after inguinal lymph node dissection, but no decrease in complications was observed.⁴ In another study, the relationship between repair with pedicled omental flap after dissection and complications was investigated, but no significant results were obtained. The need for a second incision in the abdomen and the possibility of cancer spreading to the peritoneum were stated as deficiencies of the study.⁵



Negative pressure wound therapy (VAC) supports wound healing by applying equal negative pressure to the wound surface. Its effectiveness is explained by four main mechanisms: macrodeformation of tissues, drainage of extracellular inflammatory fluids, stabilization of the wound environment, and microdeformation.⁶ While it has various applications, such as chronic wounds and diabetic foot management, and adaptation of skin grafts, its use in malignancies is considered contraindicated due to its stimulation of growth factors and angiogenesis. However, recent studies have challenged this theory. Cai et al. used VAC for wound healing after tumor excision on the anterior abdominal wall, reporting no side effects. Another study used VAC treatment for wound healing after excision in oncoplastic breast cancer patients, suggesting its potential future use.⁷⁻⁸

Conclusion

Our study found that VAC application following inguinal lymph node dissection reduces complications such as seroma, wound detachment, and infection. We believe that post-dissection VAC application could be beneficial, although the high cost of materials and prolonged drain removal time are disadvantages that need to be considered.

References

- 1- Faries MB, Thompson JF, et al. Completion Dissection or Observation for Sentinel-Node Metastasis in Melanoma. *N Engl J Med*. 2017 Jun 8;376(23):2211-2222. doi: 10.1056/NEJMoa1613210. PMID: 28591523; PMCID: PMC5548388.
- 2- Chang SB, Askew RL, Xing Y, Weaver S, Gershenwald JE, Lee JE, Royal R, Lucci A, Ross MI, Cormier JN. Prospective assessment of postoperative complications and associated costs following inguinal lymph node dissection (ILND) in melanoma patients. *Ann Surg Oncol*. 2010 Oct;17(10):2764-72. doi: 10.1245/s10434-010-1026-z. Epub 2010 Mar 25. PMID: 20336388; PMCID: PMC2943041.
- 3- Jørgensen MG, Toyserkani NM, Thomsen JB, Sørensen JA. Prophylactic incisional negative pressure wound therapy shows promising results in prevention of wound complications following inguinal lymph node dissection for Melanoma: A retrospective case-control series. *J Plast Reconstr Aesthet Surg*. 2019 Jul;72(7):1178-1183. doi: 10.1016/j.bjps.2019.02.013. Epub 2019 Mar 2. PMID: 30898502.
- 4- Erba P, Wettstein R, Rieger UM, et al. A study of the effect of sartorius transposition on lymph flow after ilioinguinal node dissection. *Ann Plast Surg* 2008;61:310e3.
- 5- Benoit L, Boichot C, Cheynel N, et al. Preventing lymphedema and morbidity with an omentum flap after ilioinguinal lymph node dissection. *Ann Surg Oncol* 2005;12:793e9.
- 6- Normandin S, Safran T, Winocour S, Chu CK, Vorstenbosch J, Murphy AM, Davison PG. Negative Pressure Wound Therapy: Mechanism of Action and Clinical Applications. *Semin Plast Surg*. 2021 Aug;35(3):164-170. doi: 10.1055/s-0041-1731792. Epub 2021 Sep 10. PMID: 34526864; PMCID: PMC8432996.
- 7- Cai SS, Gowda AU, Alexander RH, Silverman RP, Goldberg NH, Rasko YM. Use of negative pressure wound therapy on malignant wounds - a case report and review of literature. *Int Wound J*. 2017 Aug;14(4):661-665. doi: 10.1111/iwj.12665. Epub 2016 Oct 3. PMID: 27696723; PMCID: PMC7949817.
- 8- Iqbal FM, Reid JP, Vidya R. Oncoplastic breast surgery: the role of negative pressure wound therapy. *J Wound Care*. 2020 Dec 2;29(12):777-780. doi: 10.12968/jowc.2020.29.12.777. PMID: 33320749.

Keywords: drain, inguinal dissection, lymph, seroma, VAC



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Figure 1



A: Pre-operative left side inguinal lymph node dissection patient

1.B: After per-operative lymph node dissection, schematic of the inferior location of the femoral triangle where VAC will be applied

1.C: 6th month control of the patient followed up with post-operative VAC

Table 1

	Patients followed up with conventionally Group-1 (n=7)	Patients followed up with VAC Group-2 (n=7)
Ages (year)	73.2	75.6
Average fluid from drain per day (mL)	85	190
Average removal time of drains (days)	8.3	14.7
Number of patients with seroma	3(%42.8)	0
Number of patients with wound infection	2(%28.5)	0
Number of patients with lymphedema	0	0



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-077

Clinical Experience in The Reconstruction of Soft Tissue Defects in Gunshot Injuries of The Lower Extremities with Reverse Neuroadipofascial Flaps

Elnara Salmanli¹, Mahir Aliyev²

¹Baku City Hospital, Department of Plastic Surgery, Baku / Azerbaijan

²The Military-Medical Department of the State Security Service of Azerbaijan Republic. Department of Plastic Surgery, Baku / Azerbaijan

Objective

Reconstruction of soft tissue defects of the lower limb, especially the distal 1/3 of the lower leg and foot during gunshot injuries (GSI), is one of the most difficult areas of plastic surgery. In high-energy injuries such as mine injuries and projectile explosions, along with soft tissue defects, the integrity and exposure of bones, tendons, and neurovascular structures further complicates reconstruction. [1] The reverse neuroadipofascial flaps still stands today as an adequate compromise to ensure healing of wounds of lower extremity. [2-5] In this study, we resumed our case history of this flap, and we evaluated the stability of the scar to verify if this type of reconstruction is able to ensure long-term results.

Patients and Methods

In 2011-2020 we have performed reconstruction with neuroadipofascial flaps to 16 patients with high-energy GSI of lower extremity. All patients were male, mean age 28 years (19-48 years). Sural flap was used for reconstruction in 11, Saphenous flap was used in 5 cases.

Result

In all cases, perforator vessels were identified preoperatively by Doppler ultrasound and marked to help plan the base of the flap (in sural flaps, 2-7 cm proximal to the lateral malleolus fibular artery, and posterior tibial artery perforator veins in the saphenous flaps proximal to the medial malleolus). The area of the flap was marked on the skin, the base being the edge of the defect closest to the line of perforators. The length and width of the flap were decided by the length and width of the defect, to allow tension - free positioning of the flap. All patients received 5000 units of heparin, subcutaneously, twice daily. In 12 surgeries, it was planned that the flap would consist of skin-fascia, 3 proximal part adipofascial, distal part skin-fascia and 1 flap proximal part skin-fascia, distal part tubular-adipofascial tissues. A tubular adipofascial component was used to fill a cylindrical space (4 cm in diameter and 4 cm deep) between the tibia and fibula bones in the distal 1/3 of the leg with vascularized tissue. In cases where the distance between the recipient area and the donor area of the flap was 5-10 cm, the leg was reconstructed through the subcutaneous tunnel (5 patients), and in cases where the distance was 10-15 cm (6 patients), the reconstruction was performed over the open subcutaneous flat bed. In 5 patients where this distance was greater than 15 cm, after the 20-day revascularization period was completed, the pedicle was cut and returned to its place. Thus, thinning of the leg in the subcutaneous tissue on the medial tibia after saphenous flap reconstruction became thickened with tissue. In all surgeries, the flap donor area was reduced and covered with a skin graft. Flaps ranged in size from 5x6 cm to 9x15 cm (average 8x10 cm). There were no complications in 15 of the surgeries. However, in 1 surgery, skin necrosis of 7x1.5 cm, which did not descend to the fascia, occurred distal to the flap. In this case of complications, the size of the flap was 12x11 cm and the length of the pedicle was 12 cm. Transfer of the flap to the receiving area was carried out by means of a subcutaneous tunnel. In this patient, the area of skin necrosis was repaired by grafting. All patients are kept in bed for 1 week, the patient is allowed to walk with 2 crutches without placing the affected foot on the floor. After 2 weeks, the patient is allowed to walk with 1 crutch and place the foot on the floor but without loading on it. After 4 weeks the patient started normal perambulation. After the surgery, the patients were observed between 20 days and 1.5 years. In all cases, the results were cosmetically and functionally satisfactory.

Conclusion

As a conclusion, the reconstruction of soft tissue defects of the distal leg, ankle-calf joint and leg areas caused by high-energy GSI with reverse neuroadipofascial flaps is a safe and easy-to-use method in selected patients due to the low risk of complications and ease of flap dissection. Flap harvesting is easy in both cases, with short surgical time with minimal blood loss. The flap can be harvested with a long pedicle, which implies a wide rotational arch. No sacrifice of main vessels is required.

Keywords: Gunshot injury, soft tissue defect, reverse neuroadipofascial flap, Sural flap, Saphenous flap



12th

BAPRAS CONGRESS

2023

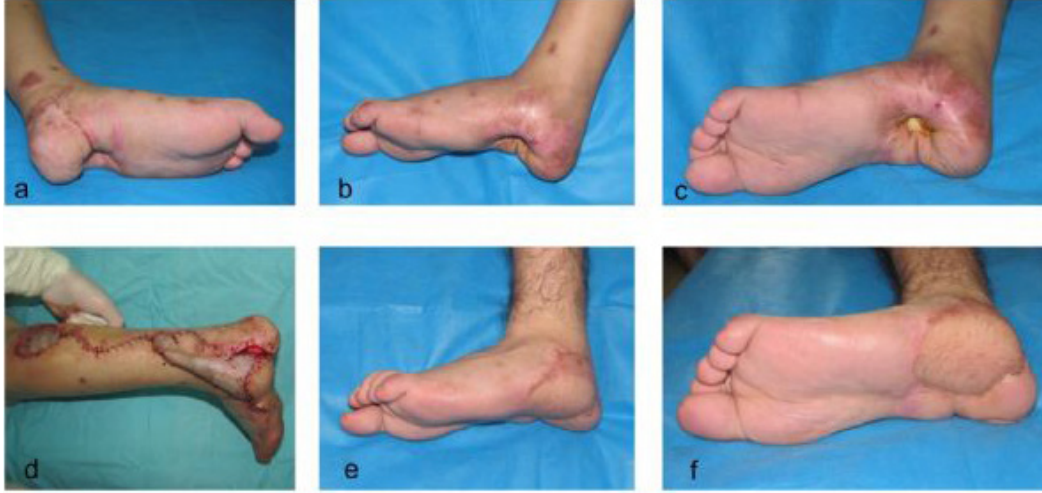
Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Figure 1 Foot sole mine injury



a,b,c- 7 month after mine injury d- Moving Sural flap with distal fasciocutaneous and proximal adipofascial component to defect area. After completing the revascularization period, pedicle will be cut. e,f- 3 months after surgery

Figure 1 Shrapnel injury of the lower 1/3 of the calf



a,b - Cylindrical (4x4 cm) defective wound. c- Sural flap with distal adipofascial and proximal fasciocutaneous tissue components. d- Adipofascial component into a cylinder shape. e- Moving the flap to the defect area. A cylinder-shaped distal component was used to fill the dead space. f- The end of the operation, pedicle is grafted.



OP-078

Reconstruction of Lower Extremity Defects with a Free Anterolateral Thigh Flap: Evaluation of 17 Patients

Hasan Murat Ergani

Plastic Reconstructive and Aesthetic Surgery, Ankara Bilkent City Hospital, Health Science University, Ankara / Türkiye

Introduction and Objectives

Anterolateral thigh flap (ALT) was first used as a septocutaneous free flap in the reconstruction of head and neck defects in 1984 (1). ALT Flap provides soft tissue, has a long pedicle, can be elevated as a flow through, can be performed with Tensor fasciae latae for tendon reconstruction, provides nerves for sensation. It has gained popularity due to its low donor site morbidity and rich vascular network. It has been shown to be beneficial in healing infected wounds.

The variety of thickness, size and flexibility of the ALT flap makes it ideal for lower limb reconstruction. It can also be used with pedicles in the reconstruction of defects from the patella to the bellybutton area.

Trauma-related lower extremity defects may be more complex than simple soft tissue defects with dead space and vascular injury. Local flaps are not adequate for reconstruction of complex and large lower extremity defects. Instead, free flaps can be used successfully. With the development of microsurgery over the years, perforator dissection can be performed and the ALT flap can be elevated to various thicknesses, or it can be elevated chimerically with the Vastus lateralis muscle (2).

ALT morbidity at the donor site of the flap is also minimal. Depending on the size of the flap, the donor site can be primarily closed or reconstructed with a graft. The disadvantage of the ALT flap is that intramuscular dissection is required because most perforators that reach the skin pass from muscle to skin rather than directly to the skin. Therefore, this is an operation that requires surgical expertise.

In this study, we will talk about clinical experience and clues in the use of ALT free flap in lower extremity defects.

Materials and Methods

Informed consent for the surgical procedure was obtained from all patients before surgery. Patients All patients who underwent ALT within a 1-year period between August 2022 and August 2023 were included in the study. The number of patients who were transferred from the orthopedic service and consulted to us in the emergency department underwent ALT. Patients included 10 men and 7 women with a mean age of 10-62 years (mean: 42.8). Osteomyelitis in 2 patients, hypertension in 3 patients and diabetes mellitus in 2 patients. The demographic data of the patients and the characteristics of the defects are shown in Table 1. Twelve of the patients had trauma, and 5 of them were due to gunshot wounds. In the early period, patients were monitored for hematoma, infection, and wound dehiscence. In the late postoperative period, functionality and ambulation were monitored.

Surgical Technique

The patient was anesthetized in the supine position under general anesthesia. The spina iliaca anterior superior and the patella superolateral were marked. The two anatomical structures were connected with a marking pen and the midpoint was marked. From the midpoint, a circle with a radius of 3 cm was drawn, and the perforators in other areas were palpated and marked using Doppler. A measurement was taken and the flap was marked to include the perforators, taking contraction into account (Figure 1). After appropriate debridement, the first team prepared the donor area while the other team participated in flap harvesting. The muscle fascia was sutured to the skin with 4-0 absorbable sutures. It was elevated from the subfascial level to the septum. The septum was incised and the perforator was seen under the muscle fascia of the vastus and isolated. The vastus was advanced under the muscle fascia and the perforator was isolated. The perforator was advanced through the vastus lateralis muscle to reach the lateral circumflex femoral artery. The flap was elevated (Figure 2).



Results

Vascular repairs were performed end-to-end in all flaps. Partial necrosis developed in 1 of 17 patients, and the other patients underwent successful reconstruction. The average hospital stay of patients was 28 days (21-36 days). Venous congestion and arterial insufficiencies were not observed. Five of the donor sites were closed primarily. None of the patients had difficulty opening a hematomatous wound. The median follow-up time of the patients was 11 months after discharge (Figure 3).

Discussion and Conclusion

The way lower extremity defects are closed with soft tissue depends on the location and size of the defect (3). The goal in treating the lower extremity is to protect the limb functionally and achieve an acceptable cosmetic result. While local fasciocutaneous and muscle flaps are adequate for some defects, they cannot be used for complex and large defects.

The ALT flap can replace many flaps such as the latissimus dorsi, rectus abdominis, radial forearm, and parascps. All of these flaps have morbidities and limitations. To close a three-dimensional defect, they are elevated along with the vastus lateralis muscle to provide excess tissue while facilitating flap removal.

The inferior flap is supplied with blood by septocutaneous or musculocutaneous perforators. The arterial diameter of the flap averages 2.0 mm and the venous diameter averages 2.4 mm. The larger the vessel diameter, the greater the chance of success. The pedicle length of the ALT flap is about 12-16 cm. The pedicle must be long so that it can move away from the trauma zone. The ALT flap does not need to be lifted at the same time during surgery. It allows two teams to work together. It is also an advantage that this flap can be removed as a flow.

The flap has some disadvantages. If the donor area of the flap is larger than 6-8 cm, it cannot be closed primarily. In elderly and non-obese patients, primary closure of up to 10 cm can occur. While the donor site of the flap can be concealed in men, it may cause some concern in women. However, we believe this is acceptable considering its advantages. Another disadvantage of the lower flap is that its vascular structure is unstable.

AO et al.(4) achieved successful results in tendon reconstruction with the fascia lata flap. In our study, emergency tendon reconstruction was performed in one patient by vascular incorporation of the fascia lata into the flap, and our results are comparable to those of this study.

In conclusion, despite the differences in vascular structure, the flap has many advantages, apart from minimal donor site morbidity. It has a long and wide vascular structure, is delicate, and at the same time, blood flow can be raised.

References

- 1- Song YG, Chen GZ, Song YL. The free thigh flap: a new free flap concept based on the septocutaneous artery. *Br J Plast Surg* 1984;37(2):149-159
- 2- Gravvanis A, Tsoutsos D, Karakitsos D, Iconomou T, Papadopoulos O. Blood perfusion of the free anterolateral thigh perforator flap: its beneficial effect in the reconstruction of infected wounds in the lower extremity. *World J Surg* 2007;31(1):11-18
- 3- Coessens BC, Van Geertruyden JP, Vico PG. Free TRAM flap for lower-extremity reconstruction. *J Reconstr Microsurg.* 1994;10:305- 311.
- 4- Ao M, Nagase Y, Mae O, et al. Reconstruction of posttraumatic defects of the foot by flow-through anterolateral or anteromedial thigh flaps with preservation of posterior tibial vessels. *Ann Plast Surg* 1997;38:598-603

Keywords: lower extremity, reconstruction, anterolateral thigh flap, necrosis, fasciocutaneous flap



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Figure 1



Preoperative marking

Figure 2



The flap is harvested



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Figure 3



Postoperative result

Table 1

Case	Age	Sex	Etiology	Defect Diameter	Hospitalization(day)	Defect area	Complication	Comorbidity
1	21	M	Gunshot Injury	6x4	18	lower extremity	-	-
2	61	M	Traffic accident	5x4	13	lower extremity	-	Diabetes Mellitus
3	40	M	Traffic accident	7x5	15	lower extremity	-	-
4	62	M	Traffic accident	5x5	16	lower extremity	-	Diabetes Mellitus
5	51	F	Traffic accident	6x6	18	lower extremity	-	Hypertension
6	55	M	Traffic accident	5x4	19	lower extremity	-	Osteomyelitis
7	61	M	Traffic accident	7x3	24	lower extremity	-	-
8	60	M	Traffic accident	6x5	30	lower extremity	Partial necrosis	Hypertension
9	43	F	Gunshot Injury	6x2	25	lower extremity	-	-
10	63	F	Gunshot Injury	5x4	23	lower extremity	-	Hypertension
11	34	F	Gunshot Injury	4x4	22	lower extremity	-	Osteomyelitis
12	25	F	Gunshot Injury	4x3	19	lower extremity	-	-
13	20	F	Traffic accident	5x4	17	lower extremity	-	-
14	10	M	Gunshot Injury	5x2	14	lower extremity	-	-
15	24	M	Traffic accident	4X4	15	lower extremity	-	-
16	35	M	Traffic accident	8X8	22	lower extremity	-	-
17	42	F	Traffic accident	7x4	25	lower extremity	-	-

The demographic data of the patients and the characteristics of the defects



OP-079

Sural Artery Flap as an Alternative for Lower Extremity Reconstruction

Bilgen Can, Hatip Dag, Duygu Karakayalı, Nehyet Ceri, Betül Gözel

Plastic Aesthetic and Reconstructive Surgery, Balıkesir University, Balıkesir / Türkiye

Introduction

Lower extremity reconstruction is one of the most challenging areas in plastic surgery due to the limited options for local flaps in this region, as it is not suitable for grafting because of the pressure area. With the advancements in free tissue transfer, free tissue transfer has become an ideal option for defects in this area. However, it has some disadvantages such as requiring specialized expertise and equipment, long surgery times, and the further reduction of the vascular structure of this region, often involving sacrificing a vessel.

Distally-based reverse sural artery flap is used as an alternative for the distal 1/3 of the leg, ankle, heel, and proximal region of the foot dorsum in lower extremity reconstruction. This flap's ease of dissection, a wide rotation arc due to its long pedicle, and containing sufficient tissue volume for most cases make it a practical option for lower extremity reconstruction.

Case 1

A 16-year-old male patient presented to our clinic following an injury with an axe. A soft tissue and bone defect of approximately 4 cm in diameter was observed at the medial malleolus level. The patient did not have any bone fractures or neurovascular injuries. He had no known medical conditions and there was no history of tobacco, drug or alcohol abuse. The defect area was repaired using a distally-based reverse sural artery flap. The flap was designed to be larger than %10 of the defect area. On the 3rd postoperative day, the patient was discharged without any complications. During clinical follow-ups, there was no need for revision.

Case 2

"A 24-year-old male patient with no known chronic illnesses presented with a drop foot due to a gunshot injury in the lumbar region. The patient had been using an orthosis for 1 year, which led to a chronic pressure wound of approximately 3 cm in size at the lateral malleolus level.. The flap was designed to be larger than %10 of the defect area. After effective debridement of the defect and the surrounding unhealthy tissues, the defect was reconstructed using a reverse sural artery flap. The patient was discharged without any complications after a 7-day hospital stay. During follow-ups, no complications were observed, and there was no need for revision.

Case 3

"A 78-year-old male patient with known Alzheimer's disease was referred to our orthopedic department due to a skin defect caused by necrosis following an ankle surgery. The patient had an approximately 4x6 cm-sized defect in the medial malleolus region, which was being monitored with vacuum-assisted closure (VAC). Wound cultures excluded local infection. Subsequently, the patient was admitted to our service for a reverse sural artery flap procedure.. The flap was designed to be larger than %10 of the defect area. On the 12th postoperative day, the patient had no complications and was discharged. During the outpatient follow-ups, no complications were observed, and there was no need for revision."

Discussion

"Although the distally-based reverse sural artery flap may be sufficient for medium-sized defects in the back distal 1/3 of the leg, ankle, and heel region, it can be inadequate for larger defects. However, it offers an ideal solution for patients who cannot undergo free flap procedures due to their general condition and peripheral vascular pathologies. The most common major problem associated with the sural artery flap is complications related to venous insufficiency. Nevertheless, our patients did not experience any postoperative complications, which can be attributed to the absence of chronic systemic diseases which might have alter their vascular system. In cases where there are factors such as vascular system pathology, smoking, age, etc., delaying the flap procedure can reduce postoperative complications.3,4,5



To reduce venous congestion due to the flap's venous return occurring through concomitant veins, techniques such as anastomosing or cannulating a vein in the saphenous vein defect area have been attempted, but our patients did not require such methods.⁴

Although cases with neuroma development due to not dissecting the sural nerve and including it in the flap exist, we did not observe neuroma formation during our clinical follow-ups.⁴

Conclusion

The sural artery flap is an effective surgical option in lower extremity reconstruction due to its technical ease, wide rotation arc enabled by a long pedicle, suitability for spinal anesthesia in patients who are not suitable for general anesthesia, and short surgical and post-operative hospital stays. Especially in patients with additional diseases causing microangiopathy, it should be kept in mind as a practical choice for lower extremity reconstruction.”

References

- 1- Follmar, Keith E., et al. “The distally based sural flap.” Plastic and reconstructive surgery 119.6 (2007): 138e-148e.
- 2- Schmidt K, Jakubietz M, Meffert R, Gilbert F, Jordan M, Jakubietz R. The reverse sural artery flap- How do modifications boost its reliability? A systematic analysis of the literature. JPRAS Open. 2020 Aug 1;26:1-7. doi: 10.1016/j.jpra.2020.07.004. PMID: 32875046; PMCID: PMC7451805.
- 3- Kneser, Ulrich M.D.; Bach, Alexander D. M.D.; Polykandriotis, Elias M.D.; Kopp, Juergen M.D.; Horch, Raymund E. M.D.. Delayed Reverse Sural Flap for Staged Reconstruction of the Foot and Lower Leg. Plastic and Reconstructive Surgery 116(7):p 1910-1917, December 2005. | DOI: 10.1097/01.prs.0000189204.71906.c2
- 4- Johnson L, Liette MD, Green C, Rodriguez P, Masadeh S. The Reverse Sural Artery Flap: A Reliable and Versatile Flap for Wound Coverage of the Distal Lower Extremity and Hindfoot. Clin Podiatr Med Surg. 2020 Oct;37(4):699-726. doi: 10.1016/j.cpm.2020.05.004. Epub 2020 Aug 12. PMID: 32919599.
- 5- Tripathi S, Basnet SJ, Lamichhane A, Hariani L. How Safe Is Reverse Sural Flap?: A Systematic Review. Eplasty. 2022 Jun 3;22:e18. PMID: 35873071; PMCID: PMC9275416.

Keywords: Reverse sural artery, Lower Limb Reconstruction, Wound, fasciocutaneous flap, adipofascial flap

Images 1



Images 2



Images 3





OP-080

A Reconstructive Algorithm for Achilles Tendon and Surrounding Tissue Defects

Osman Enver Aydın¹, Ender Ceylan¹, Mustafa Gök², Mustafa Celik¹, Harun Karaduman³

¹Plastic Reconstructive and Aesthetic Surgery Dept., Medical School, Aydın Adnan Menderes University, Aydın / Türkiye

²Radiology Dept., Medical School, Aydın Adnan Menderes University, Aydın / Türkiye

³Plastic Reconstructive and Aesthetic Surgery Dept., Medical School, Sıtcu Imam University, Kahramanmaraş / Türkiye

Achilles Tendon is the largest tendon in the human body. It bears considerably immense stress and trauma during daily activities. What is more, it is prone to trauma as a part of the lower extremity. This trauma can be limited to the tendon itself but also may also involve the surrounding and covering tissue. The unique properties of the Achilles tendon make the reconstructive efforts exhausting. In this report, we aim to present our experience with Achilles rupture and tissue defects of the region with concomitant Achilles tendon defects.

The case series includes 15 cases and 16 interventions with various aetiologies like 7 crash injuries, 6 spontaneous ruptures, 1 electrical burn, 1 diabetic wound, and 1 postoperative defect. Of the 16 interventions, 9 were free anterolateral thigh-fascia lata composite flap, 3 were reverse sural flap + vascularized tendon graft, 3 were primary repair and 1 was free anterolateral thigh-vastus lateralis- fascia lata composite flap. The cases were classified into 3 groups as follows; Complicated Defects of the Achilles Tendon region (CDATr), Complicated Achilles Tendon Rupture (CATR), and Neglected Achilles Tendon Rupture (NATR). The median follow-up duration was 18.5 months. We had 2 total flap failures; one of the cases died due to COVID-19-related complications. The other failed free flap was reconstructed with reverse sural flap + vascularized tendon graft.

Patients with diabetes mellitus had significantly lower AOFAS and ATRS scores compared to non-diabetics. Logistic regression analysis revealed that peripheral vascular disease decreased the success of the treatment.

Prior algorithms proposed by Kuwada and Myerson have limited categories to include all cases. Our algorithm covers all cases that we encountered and proposes a management method for each of them. The algorithm that we used in our clinic suggests that surgeons should

- 1- Use minimally-invasive methods during the reconstruction of the Achilles tendon.
- 2- Protect the posterior calf region in case reverse sural flap + vascularized tendon graft is needed as a salvage procedure.

Keywords: Achilles Tendon, Algorithm, Microsurgery, Reconstruction, Anterolateral Thigh Flap, Reverse Sural Flap, Vascularized Tendon graft



OP-081

Adjuvant Hyperbaric Oxygen Therapy for Limb Salvage in Crush Injuries: Our Clinical Experience With Earthquake Patients

Nevra Seyhan

Gülhane Training and Research Hospital, Plastic Surgery Department, İstanbul / Türkiye

Introduction

In severe crush injuries, achieving satisfactory limb salvage can be difficult. These type of injuries are very complicated and may involve bones, muscles, tendons, vessels and skin. The primary treatment includes immediate intravenous antibiotics, surgical debridement, bone stabilization, vascular repair and soft tissue reconstruction.

Hyperbaric Oxygen Therapy (HBOT) is one of the new treatment modalities that was first described for chronic wound management in the early 1960s (1). HBOT is a process involving pure oxygen (100%) at pressures higher than local atmospheric pressure to treat injury or disease (2). Crush injury and acute traumatic ischemia are considered approved indications for HBOT. We aim to evaluate the efficacy of Hyperbaric Oxygen as an adjuvant treatment in crush injuries and present our clinical experience with patients who were injured in February 6/2023 earthquake in our country.

Materials and Methods

Between February to June 2023, 21 patients who were rescued from the earthquake and hospitalized in Plastic Surgery Department of our hospital were enrolled. The age, gender, comorbidities, the duration of stay in our clinic, the number of operations, the number of HBOT sessions, site of fasciotomies, surgery related complications and limb amputations were all recorded.

The principles of wound management included intravenous broad spectrum antibiotics, irrigation, meticulous debridement, restoration of vascularity, bone stabilization followed by soft tissue coverage.

Patients were placed in the hyperbaric chamber and received oxygen at 2.4 ATA for a duration of 2 hours in each session. Patients were treated 5 days per week except the day of operations. HBOT stopped when the wound stabilized.

Results

A total of 21 patients were evaluated comprising 9 men and 12 women. The average age of the patients was 37.2 years (range 5-60). 17 patients received HBOT, 4 patients were not eligible. The exclusion reason was the pulmonary problems. The average number of HBOT session were 21.35 (range 10-36 sessions). The average stay in our clinic was 49.57 days (min 18-max 126 days). Average number of operations from the initial admission to our clinic to the last reconstruction was 8.4. Average number of surgical debridements was 6.3. Unilateral lower extremity fasciotomy was performed in 7 patients, bilateral lower extremity fasciotomy was performed in 2 patients, bilateral upper extremity fasciotomy was performed in 2 patients, and unilateral upper extremity fasciotomy was performed in 5 patients as soon as they were rescued, before their admission to our hospital. For coverage of fasciotomy defects most patients received split thickness skin graft. Above knee amputation was performed in one patient, below knee amputation was performed in 2 patients before their admission to our hospital. All of them were women.

Surgery related complications were partially loss of graft in 3 patients and total necrosis of flap in 3 patients.

We only amputated left thumb of a 25 year old man, right hand second digit from PIP level in a 23 year old girl. We performed below knee amputation in a 22 year old girl and right foot amputation in a 10 year old boy. Limb salvage was successful in rest of the cases.

All patients were called for control one month after discharge. Most clinical finding on follow up were good.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Discussion

Crush injuries are a profound challenge to the plastic surgeon and can lead to limb loss and severe functional impairment. Hyperbaric Oxygen has valuable therapeutic effects in such injuries. These include reduction in edema and ischemic necrosis, mitigation of reperfusion injury and potential to accelerate the healing of bone, nerve, tendon, muscle and skin (3).

It is difficult for the surgeon to decide whether or not to amputate the limb. Hyperbaric Oxygen helps in making the definitive decision. The object of HBOT is to counteract the effects of ischemia by elevating tissue oxygenation, improving skin viability and neovascularization (4).

Adjunctive HBOT is an effective treatment of severe musculoskeletal injuries that assists the healing of compromised wounds and may improve outcomes in limb salvage(5).It should be provided as soon as feasible. Earlier HBOT is administered, the more effectively it promotes wound healing and minimize the risk of limb amputation. We obtained satisfactory results despite the severity of the injuries.

Conclusion

Adjunctive HBOT was effective in preserving partially viable tissue and restoring limb function in patients with severe crush injuries.

References

- 1-Kulonen E, Niinikoski J. Effect of hyperbaric oxygenation on wound healing and experimental granuloma. Acta Physiol Scand 1968; 73(3):383-4.
- 2-Sjöberg F, Singer M. The medical use of oxygen: a time for critical reappraisal. J Intern Med 2013; 274(6):505-28.
- 3-Thom SR. Hyperbaric oxygen: its mechanisms and efficacy. Plast Reconstr Surg.2011; 127(1):131-141.
- 4-Strauss MB. The effect of hyperbaric oxygen in crush injuries and skeletal muscle compartment syndromes. Undersea Hyperb Med 2012; 39:847-55.
- 5-Dauwe PB, Pulikkottil BJ, Lavery L, Stuzin JM, Rochrich RJ. Does hyperbaric oxygen therapy work in facilitating acute wound healing: a systematic review. Plast Reconstr Surg 2014; 133:208-15.

Keywords: Adjuvant Therapy, Hyperbaric Oxygen, Limb Salvage, Crush Injury, Earthquake Patients



OP-082

Comparative Analysis of Free and Pedicled Flap Options in Foot and Ankle Reconstruction

Sare Demirtas¹, Ahmet Rifat Dogramaci¹, Gokce Yildiran¹, Mustafa Sutcu², Osman Akdag², Zekeriya Tosun¹

¹Plastic Reconstructive and Aesthetic Surgery Department, Selçuk University, Konya / Türkiye

²Private Clinic

Introduction

Complex soft tissue injuries to the foot and ankle may result from trauma, tumor, chronic infection/wound, or burn. These injuries may also be accompanied by bone fractures and tendon injuries. Reconstruction options for complex soft tissue defects in these areas include grafts, pedicled flaps, and free flaps. Flap reconstruction is considered the primary option for foot and ankle reconstruction compared to grafts. The purpose of this study is to compare the functional outcomes of pedicled and free flaps in reconstruction of the distal 1/3 of the lower extremity.

Materials and Method

Patients who underwent foot and ankle reconstruction between 2016 and 2021 were retrospectively evaluated. A total of 26 patients with pedicled flaps and free flaps were included in the study. Patients with defects that extended to the middle third of the lower extremity and reconstructions with grafts were excluded from the study. Patients were evaluated for lower extremity function scale, visual analogue score (at rest and during movement), sensory feedback, wearing shoes, use of an assistive device such as a walking stick/crutch or orthosis, postoperative complications, and need for further surgery. Data analysis was performed using SPSS version 22.0 (SPSS Inc, Chicago, IL). A value of $p < 0.05$ was considered statistically significant.

Results

Reconstruction was performed in 16 patients with a free flap and in 10 patients with a pedicled flap. The average age of the patients was 49 years (17-73). While 18 patients were operated for trauma, 8 patients were operated for burns and chronic wounds. It was found that 10 free ALT (anterolateral thigh) flaps, 2 free groin flaps, 2 gracilis muscle flaps, 1 chimeric flap based on the thoracodorsal artery, and 1 SCIP (superficial circumflex iliac artery perforator) flap were used in patients who underwent reconstruction with a free flap. It was found that the defects of patients who underwent a pedicled flap were reconstructed with 5 flaps based on the sural artery, 2 flaps based on the peroneal artery, 2 local rotation flaps, 1 adipofascial flap, and 1 flap based on the medial plantar artery. While the mean score of the lower extremity function scale was 35 in patients with free flap and 61 in patients with pedicle flap reconstruction, there was a statistically significant difference between the lower extremity function scales of the two groups ($p=0.005$). When comparing the means of the visual analogue score, there was no significant difference between the two groups at rest ($p=0.093$), while the pain felt by the patients with free flap during exercise was statistically significant compared to the patients with pedicled flap ($p=0.017$). It was found that 4 patients in the free flap group and 1 patient in the pedicled flap group could not wear shoes, with no statistically significant difference. Similarly, 5 patients in the free flap group and 3 patients in the pedicled flap group required a cane or crutches when walking. Although no nerve repair was performed during any flap surgery, it was observed that patients in both groups had return of sensation during the average postoperative follow-up period of one year in the flap area.

Discussion

According to current knowledge, there is no consensus on the ideal reconstruction option for reconstruction of defects in the distal 1/3 of the lower extremity. In the study of Sönmez et al, it was found that sensory return in fasciocutaneous flaps without nerve coaptation was better than sensory return in muscle flaps without nerve coaptation. In the study by Hong et al, it was reported that sensory return depended on flap thickness and that sensory return was faster in thin flaps. In our study, the thickness and times for sensory return of the flaps were not examined, but although no nerve coaptation was performed, sensory return was observed in 22 patients, regardless of whether they were pedicled or free. Although nerve coaptation was not performed in this study, the high rate of sensory return during the 1-year postoperative follow-up period was an indication that patients in whom nerve coaptation was performed were not superior in outcomes to patients in whom nerve coaptation was not performed during foot and ankle reconstruction.



Foot and ankle reconstruction is critical because they support the entire weight of the body and provide walking function. In the study, patients who were able to wear shoes indicated that they were able to walk comfortably and without pain with flexible athletic shoes that were one size larger than their own foot size. It was noted that they did not prefer custom orthopedic shoes, which are expensive and can lead to ulcers because they are not suitable for flap atrophy and may not even be flexible enough. It was found that the patients who used an assistive device (cane/crutch) for walking had bone fractures and the average age was higher than the other patients. Although fracture healing was complete, the fact that they did not stop using the cane suggested that the physical therapy process was not complete. However, from the data obtained at the end of the study, the walking function of the foot was restored without problems in the majority of patients in both groups.

According to the results of the visual analog score, the patients who underwent reconstruction with free flaps reported more pain during physical activity than those who underwent a pedicled flap, and the results were significant. It was suggested that more damage to the soft tissue in the donor site in patients with free flaps may have contributed to this situation.

In a similar study conducted by Struckmann et al, it was reported in the literature that visual analog scale scores differed significantly between patients with pedicled and free flaps during exercise, but there was no difference between the lower extremity function scale scores of the two groups. In contrast to our study, lower extremity function scale scores were also significantly higher in patients with pedicled flaps. This suggests that despite the many factors influencing flap selection, the pedicled flap should be preferred over the free flap whenever possible in terms of postoperative quality of life and functional return of patients.

The limitations of the study are the small sample size and the heterogeneity of the flap options used in the group, making comparisons between subgroups impossible. Therefore, no conclusion could be drawn regarding the superiority of one flap option over the other.

Conclusion

Functional outcomes in foot and ankle reconstruction are not thought to depend so much on flap type and transfer technique. The critical factors to consider when selecting a flap should be the patient's personal needs, the size of the defect, and the repair of the defect, and it is believed that the easiest and safest way should be chosen to restore the functional characteristics of the foot.

References

- 1- Li P, Zhang H, Zhu J, Qiu H, Ni X, Yu F, Xiao J, Wang J, Du S. Foot and ankle reconstruction using the lateral supramalleolar flap versus the anterolateral thigh flap in the elderly: A comparative study. *Int Wound J*. 2022 Oct;19(6):1518-1527. doi: 10.1111/iwj.13751. Epub 2022 Mar 23. PMID: 35318821; PMCID: PMC9493231.
- 2- Laitonjam M, Khan MM, Krishna D, Cheruvu VPR, Minz R. Reconstruction of Foot and Ankle Defects: A Prospective Analysis of Functional and Aesthetic Outcomes. *Cureus*. 2023 Jun 25;15(6):e40946. doi: 10.7759/cureus.40946. PMID: 37378308; PMCID: PMC10292190.
- 3- Sonmez E, Safak T. Reconstruction of the soft tissue defects of foot and ankle with neural-island flaps: mono-institutional case series. *J Reconstr Microsurg*. 2011 Sep;27(7):403-8. doi: 10.1055/s-0031-1281514. Epub 2011 Jun 29. PMID: 21717389.
- 4- Hong G, Steffens K, Wang FB. Reconstruction of the lower leg and foot with the reverse pedicled posterior tibial fasciocutaneous flap. *Br J Plast Surg*. 1989 Sep;42(5):512-6. doi: 10.1016/0007-1226(89)90035-0. PMID: 2804513.
- 5- Struckmann V, Hirche C, Struckmann F, Kolios L, Lehnhardt M, Kneser U, Daigeler A. Free and pedicled flaps for reconstruction of the weightbearing sole of the foot: a comparative analysis of functional results. *J Foot Ankle Surg*. 2014 Nov-Dec;53(6):727-34. doi: 10.1053/j.jfas.2014.06.009. Epub 2014 Aug 30. PMID: 25179455.

Keywords: Foot, ankle, reconstruction, pedicled flap, free flap



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-083

Two-Stage Major Transtibial Amputation Technique in Acute Progressive Diabetic Foot Infection: Our Results

Servet Yekta Aydın¹, Alp Ercan¹, Cemal Burak Sirkeci¹, Uğur Çelik²

¹Istanbul University-Cerrahpasa Cerrahpasa Faculty of Medicine, İstanbul / Türkiye

²Turkish Minister of Health Haseki Research And Education Hospital, İstanbul / Türkiye

Introduction

Acute progressive diabetic foot infections are common conditions encountered in clinical practice. While minor amputations, incision-drainage, and debridement procedures may suffice for some patients, major amputation may be necessary when sepsis cannot be prevented, minor amputations are inadequate, and there is no functional foot structure suitable for ambulation after debridement. Major amputations, especially when accompanied by simultaneous closure, carry a higher risk of stump infection and other complications. To reduce this risk, the classic guillotine amputation technique is used. However, this technique has various disadvantages. In our clinic, to avoid these disadvantages, we apply the tibiotalar desarticulation and vertical crural fasciotomy procedure, followed by transtibial amputation after the septic condition has improved.

Materials and Methods

Sixty patients who underwent transtibial amputation between 2016 and 2022 were included in the study. Records were retrospectively examined and evaluated from the hospital system. Only patients diagnosed with diabetes and having acute progressive diabetic foot infection were included in the study; patients who underwent transtibial amputation for different etiological reasons or major amputations other than transtibial were not included. Patients' demographic data, preoperative laboratory values (WBC, CRP, Albumin), and postoperative complications were recorded. Mann-Whitney U test was applied for statistical significance.

Surgical Technique

1. Tibiotalar desarticulation and vertical crural incision: Applied under regional or peripheral nerve block. Tibiotalar joint entry is facilitated in plantar flexion position. Circumferential incisions are made at both malleolus levels to complete the amputation by cutting through all anatomical structures from anterior to posterior. If there is suspicion of infection spreading to the crural region, vertical crural fasciotomies are opened along the V. Saphena magna and parva.
2. Interval Period: Open wounds are followed with wet-dressing twice a day. Bed rest, elevation of the affected limb, serial debridement, and appropriate antibiotic therapy are applied. Clinical and laboratory data of the infection are monitored.
3. Secondary transtibial amputation: Traditional transtibial amputation with a posterior flap closure is applied when suitable for closure.

Results

In a total of 56 patients, 5 stump detachment occurred. Four of these detachments were due to infectious reasons, and 1 was post-traumatic. Two patients required a higher-level transtibial amputation due to detachment. Two patients underwent transfemoral amputation due to infection reaching the knee joint. Remaining one patient's wound was healed by skin grafting. Mean CRP value in noncomplicated patients was 70,2 while in complicated group mean value was 115,4. Mean White Blood Cell count in mm³ was 9,71 in noncomplicated group, and 12,86 in complicated group. Mean albumin values were 3 and 2,68 in noncomplicated and complicated groups, respectively.

Discussion

In the presence of acute progressive diabetic foot infection affecting the midfoot and hindfoot and posing a septic and life-threatening condition, a decision for major amputation may be taken. Major amputations are performed either as a one-stage or two-stage procedure. One-stage final transtibial amputations carry a high risk of wound site infection due to the presence of acute progressive soft tissue infection preoperatively. The classic guillotine amputation technique, a one-stage procedure, has disadvantages, such as infection and necrosis of preserved anatomical structures and physiological retraction of muscles postoperatively, leading to flexion contracture.



12th

BAPRAS CONGRESS

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center

Konya, TÜRKİYE

The tibiotalar desarticulation with a vertical crural incision and subsequent secondary transtibial amputation is a faster and more suitable technique. Rapid tibiotalar desarticulation during septic conditions results in a regression of septic signs within hours after the operation. In cases of acute infection signs in the crural region, drainage of related compartments is provided with vertical crural incisions. Regression of acute progressive soft tissue infection signs is verified by laboratory values during the interval period. Subsequent secondary transtibial amputations reduce the likelihood of ulceration or surgical revision in the stump. With this method, early ambulation is allowed for patients at risk of immobilization due to concurrent systemic diseases and low cardiopulmonary reserve.

Conclusion

Two-stage transtibial amputation is a safe and functional method used in diabetic foot patients not suitable for limb-preserving surgery in the septic condition. It results in fewer infections of deep anatomical structures and complications in the amputation stump when compared to classic below-knee or guillotine amputation techniques. Thus, a functional amputation stump is provided for the use of appropriate prosthetics, enabling patient mobilization.

Keywords: diabetic foot infection, transtibial amputation, acute progressive infection, major amputation, limb preserving surgery



12th

BAPRAS CONGRESS
Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org

Figure 1



Diabetic foot infection, on the right side after debridement

Figure 2



Tibiotalar desarticulation

Figure 3



Secondary completion transtibial amputation



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-084

Application of Superior Lateral Genicular Artery Perforator Flap for Knee Defects

Süleyman Cecen¹, Prof. Dr. Selçuk Akın²

¹Bursa Uludağ University, Faculty of Medicine, Department of Plastic Reconstructive and Aesthetic Surgery, Bursa / Türkiye

²Bursa Uludağ University, Faculty of Medicine, Department of Plastic Reconstructive and Aesthetic Surgery, Bursa / Türkiye

Introduction and Objectives

The knee is the human body's biggest joint and is susceptible to trauma, severe burn injuries, tumor, infection, and post-surgical complications, such as hard-wire or prosthesis exposure. These injuries may result in substantial consequences, such as tendon, bone, joint, and ligament injuries and exposure of essential structures.

Local flaps, muscle flaps, perforator flaps, and free tissue transfers have been identified and used for the soft reconstruction of the knee. Even though it seems local flaps are a reasonable option for the reconstruction, due to the previous injuries and the extent of trauma, local options may not be available enough for this purpose. In that case, some muscle flaps have been identified around the knee for different scenarios, such as the gastrocnemius flap, sartorius flap, vastus lateralis flap, etc. But for significant knee defects, free flap options with or without vascular loops will be convenient if all local options are insufficient. (1)

This study aims to evaluate the use of fasciocutaneous flaps originating from the superior lateral genicular artery, located on the distal of the thigh, in knee reconstruction.

Materials and Methods

Between 2018 and 2022, this flap was used in 5 patients suitable for these evaluations. We chose five patients with soft tissue defects around the knee and reconstructed defects with the SLGP flap. All of the patients were male. The patients ranged in age from 36 to 60 years (mean, 48.4 years) and were followed up for a mean of 21,4 months (range, 3-72 months).

Indications for this flap were patellar fracture in 3 cases, tibia plateau fracture in 1 case, and burn in 1 case. All affected sides were left. Flap sizes ranged between 12x8 cm to 20x6 cm. Patients' data are presented in Table 1.

Age Reason Injury Defect size Flap size Complication Follow up

1	53	MVA	Patella Fracture	8X6 CM	12X8 CM	Marginal necrosis	3 months
2	36	MVA	Patella Fracture	6X5 CM	15X8 CM	None	4 months
3	40	Burn	Bone exposure	12X10 CM	25X10 CM	None	6 year
4	53	MVA	Hard-wire exposure	5X3 CM	20X6 CM	Marginal necrosis	2 year
5	60	Fall	Patella Fracture	15X7 CM	18X8 CM	None	4 months

Table 1: Patient Data

In the preoperative evaluation of patients with soft tissue defects in the knee region, this flap was planned to be applied if an appropriate pedicle was detected in the assessments made with CT angiography, angiography, color duplex ultrasonography, or handheld Doppler.

CT angiography provides information about the origin and course of the pedicle. However, in the case of a knee prosthesis e, optimal imaging may not be possible due to interference. The estimated location of the pedicle can be determined with a handheld Doppler, and the flow of the pedicle can also be evaluated with superficial Doppler ultrasound.

Surgical Technique

Landmarks are marked on the lateral aspect of the distal thigh, such as the fibular head, lateral tibial condyle, superolateral edge of the patella, posterior border of the iliotibial band, and biceps femoris. The posterior border of the iliotibial band and biceps femoris tendon, a line connecting the fibular head, and the superolateral edge of the patella form a triangle. The perforator pierces deep fascia in that triangle and is approximately 7 cm away from the fibular head. (Figure1)



Figure 1: Pedicle location between biceps femoris and tensor fascia lata

The flap is designed on the lateral side of the distal thigh. The detected point of the perforator is positioned on the distal side of the flap. Dissection begins from the anterior of the flap, proceeding in the loose areolar layer above the iliotibial band. At the posterior border of the iliotibial band, numerous perforators will be visible. After an incision at this level, through the iliotibial band, an intermuscular space between the vastus lateralis and the short head of the biceps femoris muscle will be encountered, and the vascular pedicle can be seen piercing through the muscle belly of the biceps femoris short head. The pedicle can be dissected between the muscles as far as necessary to obtain an adequate arc of rotation and a tension-free reach into the defect.

The flap is incised circumferentially, and the islanded flap is transferred into the defect. Primary closure of the donor site is managed proximally, but a split-thickness skin graft is used for the distal end of the donor site. (Figure 2)

Figure 2: Perioperative view of exposed bone structures and after flap inset

Figure 3: 6th year Follow up view

Results

Two patients had marginal necrosis of the distal tip of the flap. These patients' marginal flap loss management was with debridement and primary closure. Primary donor site closure wasn't possible, managed with split skin grafts. No late complications were observed in the donor area or the covered defect site. (Figure 3)

Discussion and Conclusion

Proper management of the knee wound is challenging for the reconstructive surgery point of view. After an injury in the knee area, the quality of the surrounding tissues may not be sufficient for local flap harvest and may not have the required tissue characteristics. In addition, after injuries to the knee region, both bone and tendon structures may be exposed, so both dead space obliteration and coverage are provided with reliable tissue with a good blood supply. In this case, muscle flaps are the first option. Since these needs are frequently encountered in knee injuries, muscle flaps are still the first choice in the soft tissue reconstruction of the knee and upper one-third of the leg. (1) (2) Muscle flaps have important advantages, such as being technically easy, rich in blood supply, or eliminating dead spaces, but they lack in providing soft and pliable tissue.

Both heads of the gastrocnemius muscle and the proximally based soleus muscle flap are defined for knee reconstruction. The medial head of the gastrocnemius is suitable for defects located medial to the knee, while the lateral head is suitable for defects situated laterally. However, anatomically, the lateral head of the gastrocnemius is smaller than the medial head and may provide less coverage. In addition, it may be necessary to separate it from the insertion and dissection of the pedicle for easy access to the defect area. (3) However, in that case, attention should be paid to the peroneal communis nerve, located close to the pedicle, and its insertion. Although it has been repeatedly stated in the literature that muscle flaps do not cause significant morbidity, it should be kept in mind that this may change with new and current studies. (4)

Due to the characteristics of the knee joint, the skin over the knee should be thin, soft, and distensible in maximum extension. In soft tissue defects developing in the knee region, obtaining tissues with this character is an important problem, posing a significant challenge for plastic surgery. Especially in the last 30 years, there has been an evolution from muscle flaps to perforator flaps to create a better cosmetic result and less donor morbidity in reconstructing any body part.

The distally based anterolateral thigh flap (ALT) is identified for this region's reconstruction. Even if this option doesn't have a muscle component, it is a good option for coverage. But this flap relies on anastomosis between the descending branch of the lateral circumflex femoral artery and the superior lateral genicular artery, or deep femoral artery. It has been stated that various complications may accompany due to the robustness of this anastomosis, and different recommendations have been made to overcome this obstacle. (5)

Most muscle flaps, fasciocutaneous flaps, which can be used as free flaps in the reconstruction of knee defects, can provide adequate coverage. A free flap would always be an option for any reconstruction, but its technical and time-demanding nature are important issues. Also, the characteristics of transferred tissue are another point for free tissue transfer. Even muscle flaps provide durable and robust coverage, such extensive tissue defects may be covered with latissimus dorsi muscle flaps, but they are bulky and not pliable. (6)



The most important advantage of the superior lateral genicular artery perforator flap over other options is that it has characteristics similar to the skin of the knee and knee circumference. Even though a perforator flap that can be obtained from the superior medial of the knee and is based on the descending genicular artery has been defined, fasciocutaneous flaps originating from the medial knee remain thicker than the lateral region.

The flap pedicle travels within the septum between the lateral vastus and the biceps femoris, penetrating the deep fascia behind the iliotibial band and nourishing the skin island. In addition, pedicles originating from the deep femoral artery and emerging from the same septum can also be encountered more proximal to this pedicle. With pedicles developing from more than one but different systems, this region allows for a VY flap and keystone flap design. (7)

However, if a propeller flap is preferred, the proximal pedicle may need to be ligated. It has been reported in the literature that marginal necrosis occurs at different rates in the distal flap. Although we encountered the same problem in some patients in our series, it was overcome with the help of minimal debridement and secondary healing.

The superior lateral genicular artery is reliable with consistent anatomy. Although the need for grafting of the donor site may develop, the superior lateral genicular artery perforator flap is a reasonable option for soft tissue defects in the knee region.

References

- 1- Soltanian H, Garcia RM, Hollenbeck ST. Current Concepts in Lower Extremity Reconstruction. *Plast Reconstr Surg*. 2015 Dec;136(6):815e-829e.
- 2- Menderes A, Demirdover C, Yilmaz M, Vayvada H, Barutcu A. Reconstruction of soft tissue defects following total knee arthroplasty. *Knee*. 2002 Sep;9(3):215-9.
- 3- Daigeler A, Drücke D, Tatar K, Homann H-H, Goertz O, Tilkorn D, et al. The pedicled gastrocnemius muscle flap: a review of 218 cases. *Plast Reconstr Surg*. 2009 Jan;123(1):250-7.
- 4- Kim J, Lee H, Pyon J-K, Mun G-H, Bang SI, Jeon B-J, et al. Association of Unilateral Latissimus Dorsi Muscle Harvest for Breast Reconstruction with Postoperative Spinal Posture. *Plast Reconstr Surg*. 2022 Sep 6;150(3):644e-654e.
- 5- Yamada S, Okamoto H, Sekiya I, Wada I, Kobayashi M, Goto H, et al. Anatomical basis of distally based anterolateral thigh flap. *J Plast Surg Hand Surg*. 2014 Jun;48(3):197-200.
- 6- Ha Y, Lee BH, Park JA, Kim YH. Reconstruction of soft tissue defect around knee with thoracodorsal artery perforator flap and muscle-sparing latissimus dorsi flap. *Microsurgery*. 2023 Feb 15;
- 7- Morsy M, Sur YJ, Akdag O, Eisa A, El-Gammal TA, Lachman N, et al. Anatomic and high-resolution computed tomographic angiography study of the lateral femoral condyle flap: Implications for surgical dissection. *J Plast Reconstr Aesthetic Surg*. 2018 Jan;71(1):33-43.

Keywords: Knee soft tissue coverage, Perforator flap, Wound, Superior lateral genicular artery, SGLP

Figure 1



Pedicle location between biceps femoris and tensor fascia lata



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



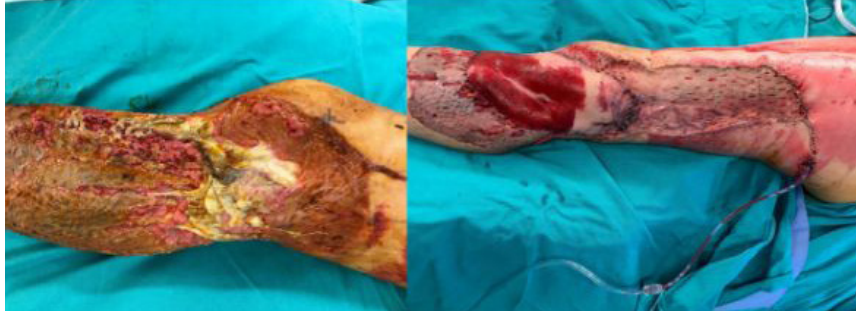
13 September
Pre Congress Course
14 - 16 September
Congress

Figure 2



Perioperative view of exposed bone structures and after flap inset

Figure 3



6th year Follow up view

Table 1

	Age	Reason	Injury	Defect size	Flap size	Complication	Follow up
1	53	MVA	Patella Fracture	8X6 CM	12X8 CM	Marginal necrosis	3 months
2	36	MVA	Patella Fracture	6X5 CM	15X8 CM	None	4 months
3	40	Burn	Bone exposure	12X10 CM	25X10 CM	None	6 year
4	53	MVA	Hard-wire exposure	5X3 CM	20X6 CM	Marginal necrosis	2 year
5	60	Fall	Patella Fracture	15X7 CM	18X8 CM	None	4 months

Patient Data



12th

BAPRAS CONGRESS 2023
Selçuklu Convention Center Konya, TÜRKİYE



13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org

OP-085

Lower Extremity Salvage with Free Flap Transfers

Burak Ozkan, Süleyman Savran, Abbas Albayati, Çağrı A. Uysal

Plastic Reconstructive and Aesthetic Surgery, Baskent University, Ankara / Türkiye

Objectives

Patients who had unhealed amputations stumps have generally poor vascular condition due to vasculopathies or crush injuries. Tendons and bones are superficial and covered with a thin skin and amputation stump should be revised or changed to a more proximal level. Because the local tissue sources are insufficient for reconstruction in the distal extremity, free microvascular tissue transfers are the primary choice for reconstruction in many trauma centers as the source for required tissue. Because the local tissue sources are insufficient for reconstruction in the distal extremity, free microvascular tissue transfers are the primary choice for reconstruction in many trauma centers as the source for required tissue.

Materials and Methods

10 patients were reviewed retrospectively between 2020-2023. Patients were evaluated according to demographics, etiology of the amputations, location of the defects, flap type, recipient vessels, anastomosis fashion, early and late complication rates and hospitalization length.

Results

The mean age of the patients was 58 years. Nine of 10 extremity length were successfully preserved with free flap transfers. One patient was referred to orthopedic department for higher amputation level.

Conclusions

Free microvascular tissue transfers are important reconstructive options for extremity salvage.

Keywords: Free flap, perforator flap, microsurgery, lower extremity reconstruction, limb salvage



Reconstruction of a Chopart amputation stump with exposed malleolus with free alt flap and late term image

Figure 1



A amputation stump reconstructed with free alt flap in a diabetic patient. The anastomosis were performed to anterior tibial artery in an end to side fashion



OP-086

Reconstruction with Gastrocnemius Flaps in Lower Extremity

Tibet Kaan Yolsal, Mert Şen, Harun Güleç, Furkan Temizayak, Arda Tınaz, Tuğba Akgün, Furkan Yıldırım, Rıza Türk, Ramazan Erkin Ünlü, Burak Yaşar, Hasan Murat Ergani

Ankara Bilkent Şehir Hastanesi, Plastik Rekonstrüktif ve Estetik Cerrahi, Ankara / Türkiye

Introduction and Objectives

The need for reconstruction with flaps frequently arises in defects of the lower extremity after trauma, tumor surgery, prosthetic surgery and infection. Depending on the suitability of the patient and the defect, reconstruction with fasciocutaneous, myocutaneous, perforator flaps as well as free flaps are the weapons of plastic surgery in the lower extremity.(1) The gastrocnemius muscle flap, which is applied especially for defects around the proximal leg and knee, is one of the workhorse flaps in the reconstruction of these regions. The aim of this study is to report our experience with gastrocnemius muscle flaps.

The pedicled gastrocnemius muscle flap is one of the workhorse flaps of lower extremity reconstruction with its features such as being used in distal femur, knee and proximal tibia defects, having a reliable anatomy, being easily elevated and highly vascularized.(1) It has 2 heads, medial and lateral, and are supplied by the lateral or sural arteries arising from the popliteal artery and this makes it a mathes & nahai type 1 flap with these features. They are also innervated by the lateral and medial sural nerves branching from the tibial nerve. The lateral and medial head can be used in isolation by elevating over its own pedicle, and the use of only one of them causes negligible functional morbidity in the donor area. (2) Due to its good blood supply, it ensures the delivery of oxygen, antibiotics and systemic immune modulators to the recipient site(3) and is one of the leading reliable reconstruction methods in chronically infected defects.

The medial head is usually longer and thicker.(4) It is suitable for use in medial and anterior defects of the knee or leg. The pedicle excursion is longer because the lateral head is affected by the presence of the fibula. Both heads have a fairly wide rotational arc. The disadvantages are that it creates a medium-length curvilinear scar area in the donor area and the need for reconstruction with partial-thickness skin graft after adaptation, creating a second donor area morbidity.

Materials and Methods

All gastrocnemius muscle flaps performed since the opening of our clinic (February 2019) were retrospectively analyzed. Inclusion criteria were as follows: being older than 18 years of age, a single defect and a single reconstruction method, and regular attendance to post-discharge follow-up visits. Exclusion criteria were the presence of additional injuries in the same extremity and the use of both heads of the gastrocnemius in reconstruction.

All soft tissue reconstruction operations were performed by the same surgical team. Patients who needed reduction for bone fractures were taken over from the orthopedic department after reduction and fixation were achieved. After adequate debridement of the defects of the patients, pedicled lateral or medial gastrocnemius muscle flaps were denervated based on the medial or sural artery through the incision opened from the dorsum of the leg and adapted to the defect areas by tunneled subcutaneously. 2 drains were placed, one in the recipient and one in the donor site. The flaps were covered with partial-thickness skin grafts from the medial aspect of the contralateral thigh. In patients with unrestricted knee movements, immobilization was provided with a long leg splint to prevent stretching of the incision lines and pedicle. The recipient site was closed with a wet and loose dressing.

In all patients, hematoma control was performed on the first day of the postoperative period with donor and recipient site dressing every 4 hours. Hemogram was monitored twice on the first day and once on the following days. Leg elevation was performed for edema prophylaxis. From the 1st postoperative day, ankle movements were supported in patients who had the opportunity according to the type of injury. Knee movements were not performed for 1 week in order not to disrupt the flap viability and not to create tension in the incision lines. After the first week, knee movements were started mildly or consulted to physical therapy and rehabilitation and orthopedics and traumatology departments.

All drains were removed at the end of day 7. Patients were followed up at the first week, second week, first month, third month and sixth month after discharge.



Results

The study included 26 patients. In this group of patients, 19 males and 7 females aged 23-71 years, 3 were operated on for total knee replacement, 5 for infection after plate fixation, 6 for gunshot wounds and 12 for defects secondary to traffic accidents. These defects were grouped as 2 medial knee, 3 anterior knee, 1 anterolateral tibia, 5 anteromedial tibia, 6 lateral tibia and 9 anterior tibia. 20 medial and 6 lateral gastrocnemius muscle flaps were performed for these defects.

In the defects formed secondary to plaque exposure and infection and the gunshot and vehicle accident patient group with dirty injuries, it was observed that infection findings and parameters such as discharge, foul odor, non-healing wound tissue patients regressed in a total of 13 after reconstruction with gastrocnemius muscle flap following debridement. Days after the operations wound site culture results turned negative.

Total necrosis did not develop in any flap and partial necrosis and partial dehiscence developed distal to three flaps. Conservative follow-up was preferred in these patients because of the absence of bone exposure and signs of infection, and the defect closed with secondary healing in all three patients.

Dehiscence was seen in the donor area in none of the patients. Hematoma was detected in 2 patients on day 1 and 2 patients on day 2 and hematoma evacuation was performed under operating room conditions. In the follow-up, hematoma did not recur and the donor areas healed without complications.

On the 7th day, a patient whose drain was removed on the 1st week after discharge showed minimal seroma at the first follow-up visit. The seroma was drained under outpatient clinic conditions and the seroma did not recur in the follow-up with pressure dressing.

At the 6th month follow-up, the patients had no major complaints except minor complaints about muscle flap and skin graft donor site morbidity.

Discussion and Conclusion

Pedicled gastrocnemius muscle flap is an indispensable option for lower extremity reconstruction with flaps due to its reliable anatomy,(4) easy applicability. It may be preferred over fasciocutaneous or perforator flaps due to its efficacy in infected areas.(2) The medial head is especially preferred in medial and anterior defects, while the lateral head is more suitable for the lateral region of the tibia and knee because its rotation is prevented by the fibula. Flap donor site morbidity is minimal. The disadvantages are that it creates a second donor site morbidity secondary to the graft requirement because it is a muscle flap and it creates a bulky area in the recipient site, depending on the patient's gastrocnemius. The aesthetic results of reconstructions with a single head are considered acceptable by patients. (5) One of the main limitations of this study is the limited number of patients, the lack of pediatric patients and the dramatic decrease in the number of patients with follow-up after the 6th month. At the same time, since the patients had additional traumas including fractures that prevented both knee and ankle movements, functionality could not be analyzed in a homogeneous large group. Additional complications may be seen in longer follow-up.

References

- 1- Andres LA, Casey WJ, Clarke HD. Techniques in soft tissue coverage around the knee. *Tech Knee Surg.* 2009;8(2):119-25
- 2- Arnold, P. G., & Mixer, R. C. (1983). Making the most of the gastrocnemius muscles. *Plastic and reconstructive surgery*, 72(1), 38-48. <https://doi.org/10.1097/00006534-198307000-00010>
- 3- Gerwin, M., Rothaus, K. O., Windsor, R. E., Brause, B. D., & Insall, J. N. (1993). Gastrocnemius muscle flap coverage of exposed or infected knee prostheses. *Clinical orthopaedics and related research*, (286), 64-70.
- 4- Taylor, G. I., & Pan, W. R. (1998). Angiosomes of the leg: anatomic study and clinical implications. *Plastic and reconstructive surgery*, 102(3), 599-618.
- 5- Kroll, S. S., & Marcadis, A. (1987). Aesthetic considerations of the medial gastrocnemius myocutaneous flap. *Plastic and reconstructive surgery*, 79(1), 67-71.

Keywords: gastrocnemius, flap, lower extremity, muscle flap, pedicled



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Postoperative Photo



Preoperative Photo





OP-087

Investigation of the Effect of Wireless Microcurrent Stimulator (WMCS) on Burn Wound Healing: An Experimental Burn Model in Rats

Anıl Pehlevan¹, Osman Enver Aydın¹, Barış Atakan², Serhat Çelikbağ¹, Ender Ceylan¹

¹Plastic Reconstructive and Aesthetic Surgery Dept., Medical School, Aydın Adnan Menderes University, Aydın / Türkiye

²Department of Electrical and Electronics Engineering, Faculty of Engineering, İzmir Institute of Technology, İzmir / Türkiye

In healthy skin tissue, there is an electrical potential difference on both the inner and outer sides of the skin. In the event of an injury, this potential difference is disrupted, leading to the generation of an electrical current. This current is referred to as the wound current or current of injury. This current has positive effects on wound healing, such as macrophage chemotaxis, fibroblast proliferation, stimulation of keratinocytes, anti-edematous and antibacterial effects. It is believed that the continuation of this current during the healing process and the inability to generate the current properly can lead to a halt in the healing process. In cases where this current is not generated healthily, electrical stimulation is applied to promote healing in both acute and chronic wounds. Electrical stimulation devices can mimic this current, thus initiating and accelerating the healing process.

Over the decades electrical stimulation has been successfully used in chronic and acute wound models. Most of these models require wires and physical contact with the wounds' surrounding tissues. Wireless microcurrent electrical stimulation is a relatively new technique in delivery of electrical stimulus. The aim of this study is to investigate the effects of WMCS on burn wound healing in a rat burn model.

For this purpose, 20 Wistar Albino rats were divided into 2 groups. Then, 10 cm² wide 2nd degree skin burns were created on the back of the rats, using the brass block method, in both groups.

Group 1 (n=10): control group, no treatment was applied.

Group 2 (n=10): treatment group, WMAS treatment was applied 3 days a week for 3 weeks. Each session lasted 45 minutes and the current was set at 1.5 microamperes.

The burn site on the left side was used for histopathological examination. Cross-sectional biopsy was taken on days 3, 7, and 17. Inflammation, fibroblastic activity, angiogenesis, epithelialization parameters were evaluated.

The burn site on the right side was used for macroscopic examination. Total necrotic area and recovery time parameters were evaluated.

On the 17th day, in both groups, the burn area on the right side of the rat's back was photographed from a distance of 25 cm. Rats were positioned appropriately before the photography session. A ruler was placed for calibration purposes. The ImageJ software (ImageJ 1.53a, NIH, USA) was utilized for measuring the necrotic area. By calibrating the pixel-mm ratio using the ruler in the photograph, the necrotic area was calculated. The calculated areas from both groups were compared

Chi Square tests were performed for categorical data, 3rd, 7th and 17th day scores for inflammation, fibroblastic activity angiogenesis and epithelialization. Student's T test was used for continuous data, wound closure day and total necrotic area. Statistical significance was assumed when p<0,05.

There is a significant difference between the control and experimental groups in terms of inflammation scores only on the 17th day. $X^2 (2, 20) = 16,364, p < 0.001$. According to these results, no significant difference was observed in inflammation scores between the experimental and control groups on the 3rd and 7th days. However, a significant difference was detected in inflammation scores on the 17th day. Accordingly, the overall inflammation score in the experimental group was found to be lower than that in the control group. This means that there was less inflammation observed in the experimental group on the 17th day.

According to the test results, there is a significant difference between the control and experimental groups in terms of re-epithelialization scores on the 17th day. $X^2 (1, 20) = 8,571, p = 0.003$.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

There was no significant difference between the two groups in fibroblastic activity and angiogenesis. Epithelialization was detected on the 17th day in the treatment group. Areas of necrosis were similar in both groups. Recovery time was shorter in the treatment group.

The day of complete wound closure was not found to be significantly different between the experimental (M=35.20 days, SD=5.37) and control (M=41.10, SD=6.98) groups, according to the test results. $T(18) = 2.118$, $p = .048$. Therefore, based on this, wounds in the experimental group have closed significantly earlier compared to the control group.

WMCS significantly reduces inflammation in the burn area in a rat burn model and accelerates healing. WMCS device seems to be a promising model in treatment of second degree burns.

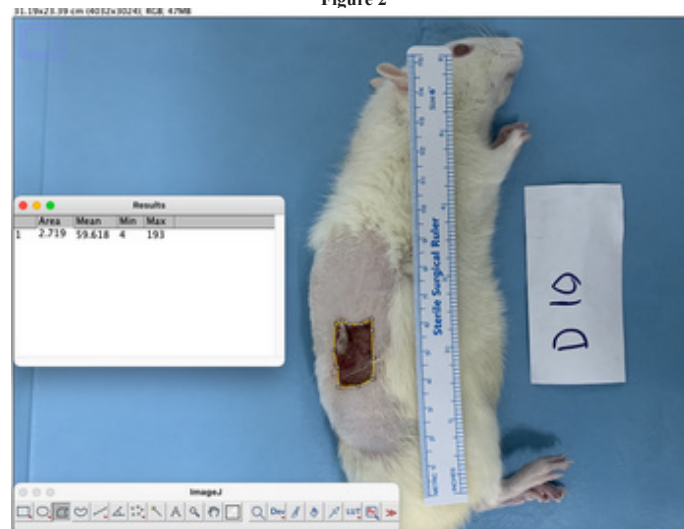
Keywords: Wireless Microcurrent Stimulator, Burns, Wound Healing, epithelialization, inflammation

Figure 1



WMCS device at work.

Figure 2



Necrotic area cacuation using ImageJ.



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

OP-088

Impact of Various Factors on Post-Operative Functional Outcomes in Open Treatment of Condylar Neck Fractures Utilizing Rigid Internal Fixation

Mustafa Akyurek, Orhun Ali

Canakkale Onsekiz Mart University, Plastic Reconstructive and Aesthetic Surgery, Çanakkale / Türkiye

This retrospective study aims to explore factors influencing the success of Open Reduction and Internal Fixation (ORIF) in treating condylar neck fractures. Data from 21 patients treated with ORIF for such fractures between 2013 and 2023 were retrieved and analyzed. Detailed operation reports identified patients specifically treated for condylar neck fractures, noting patient data including age, sex, Body Mass Index (BMI), duration of surgery, and timing of surgery. Postoperative facial nerve function assessments were gathered from patients' final examination records and analyzed using Pearson's point biserial correlation test via the SPSS software program.

The results reveal that 80% of patients experienced temporary facial nerve damage postoperatively, with no correlations found between the duration of facial paralysis and any of the clinical data collected (including BMI, age, timing, and duration of surgery). The absence of correlation is hypothesized to be related to the numerous anatomical variations of the facial nerve described in current literature. This study affirms the need for continued exploration of techniques to enable open reduction for subcondylar fractures without causing damage to the facial nerve.

Keywords: Craniofacial, trauma, mandibular condyle, facial nerve, open reduction

Table 1

Patient no	Age / sex	Time of intervention	BMI	Operation Time Duration	Facial Palsy Duration
n1	17 f	2 days	20.6	30 min	0 days
n2	56 m	7 days	23.3	100 min	x>50 week
n3	44 m	5 days	27.1	30 min	6 week
n4	25 m	2 days	24.8	100 min	6 week
n5	46 f	6 days	25.2	45 min	8 week
n6	31 m	8 days	28.5	120 min	5 week
n7	34 m	5 days	22.7	40 min	4 week
n8	20 m	14 days	24.9	30 min	5 week
n9	22 m	7 days	26.6	60 min	4 week
n10	38 m	9 days	22.1	100 min	6 week
n11	22 m	4 days	21.3	40 min	4 week
n12	29 f	7 days	28.1	50 min	4 week
n13	36 m	10 days	22.5	70 min	5 week
n14	28 m	8 days	24.7	70 min	6 week
n15	40 m	7 days	28.9	60 min	5 week
n16	42 m	9 days	31.2	50 min	0 days
n17	33 m	3 days	26.8	60 min	5 week
n18	25 m	10 days	24.3	60 min	8 week
n19	39 m	14 days	32.3	60 min	4 week
n20	23 m	16 days	26.0	70 min	4 week
n21	36 m	7 days	24.7	60 min	5 week



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

OP-089

Assessment of the Effectiveness of the Newly Developed Model Microsurgery Education on Plastic Surgery Assistants through Practice

Ozer Ozmut, Arslan Guvendik, Ahmed Samil Guvel, Seyit Korur, Hasan Murad Ergani, Burak Yasar, Ramazan Erkin Unlu

Plastic Surgery, Ankara Bilkent City Hospital, Ankara / Türkiye

Introduction

Many organizations organize microsurgery courses. Groups of 5 are mainly formed, and the course program is completed in five days. The prices of the courses vary depending on the content of the course, its duration, and the location of the institution. Generally, the prices of the courses are between 500 and 1000 euros. Courses using rats, which form the basis of microsurgery training, cause both high cost and rat death.

This study compares taking average microsurgery training course residents with the newly developed microsurgery training course residents.

Methods

In this study, we used 8 Plastic Surgery residents who took the ordinary microsurgery training course and 8 Plastic Surgery residents who took the newly developed model microsurgery training course. Our assessment consists of 5 factors important for anastomosis closure; anastomosis closure, suture spacing, bites size, knot tying, and cut ends length. (figure 1)

Results

We found that the newly developed microsurgery training model helps residents practically by enhancing their microsurgery skills without requiring expensive equipment.

Also, this will decrease the live animal dissection due to the microsurgery training course. The financial losses will be minimized, and the education will benefit the patients indirectly by improving the surgeon's dexterity. For this reason, after the practical application of this model, it has been revealed that many steps, including control, can be easily performed and that it can be done together with the supervisor.

Discussion

Many models for microsurgery research and training have been described. However, only some have been validated for assessment. An ideal model would be a tool or model that is realistic and objective, generally accepted, cost-effective, maintainable, and reliable. (1) Our newly developed model meets these requirements, especially the cost-effectiveness and applicability, observability. Also, the supervisor can transfer their experience in microsurgery skills during the course.

Animals are widely used as a training model to teach microsurgery, especially the rat, which is currently regarded as the best model to exercise vascular anastomosis. (3) But this is expensive and requires general anesthesia to perform. We use chicken as a cost-effective and easy-access model. A study conducted in India found that the Chicken wing model for microsurgery training offers an easy and cost-effective alternative to the traditional live rat model. (2)

Iv fluid bags have made the simulation blood flow; one is complete, and the other is empty. We use gravity to mimic blood flow to chicken femoral arteries. (figure 2) A study conducted in the USA also used a simple method of bag infusion with a gravity pump to perpetually or intermittently mimic real-time blood flow and use blue food coloring. (5)

We test the residents on our newly developed microsurgery technique. We score their end-to-end anastomosis via our assessment. The system is a reliable and valid tool for assessing microsurgical anastomoses on non-living models. Our assessment includes anastomosis closure, suture spacing, bite-size, knot tying, and cut ends length. The scale, reliable and quick to perform, appropriately tracked the learning curve of basic microsurgical skills and served exceptionally well during the microsurgical



courses, enabling to accurately assess participants' progress at the base skill level. (4)

We found that the newly developed microsurgery training model helps residents practically by enhancing their microsurgery skills without requiring expensive equipment. After this course, residents can perform microsurgery skills in the operating room. (figure 3)

Conclusion

The newly developed microsurgery training program helps residents to perform microsurgery techniques efficiently due to the effectiveness of simulation. It will help their training skills increase to perform on patients. This will also help other clinic residents who cannot afford the requirements of microsurgical sets.

References

- 1-Chan, W. Y., Matteucci, P., & Southern, S. J. (2007). Validation of microsurgical models in microsurgery training and competence: a review. *Microsurgery: Official Journal of the International Microsurgical Society and the European Federation of Societies for Microsurgery*, 27(5), 494-499.
- 2-Dave, A., Singhal, M., Tiwari, R., Chauhan, S., & De, M. (2022). Effectiveness of a microsurgery training program using a chicken wing model. *Journal of Plastic Surgery and Hand Surgery*, 56(4), 191-197.
- 3-Trignano, E., Fallico, N., Zingone, G., Dessy, L. A., & Campus, G. V. (2017). Microsurgical training with the three-step approach. *Journal of Reconstructive Microsurgery*, 33(02), 087-091.
- 4- Stogowski, P., Fliciński, F., Bialek, J., Dąbrowski, F., Piotrowski, M., & Mazurek,

Keywords: Microsurgery, Education, Plastic Surgery, Practice, experimental

Figure 1



Figure 2

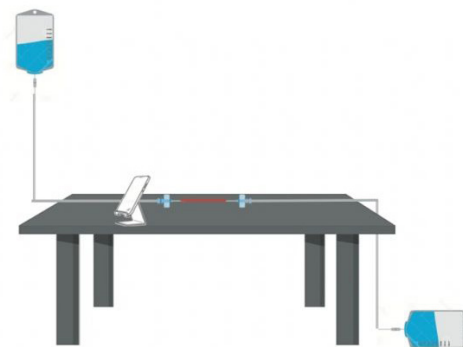
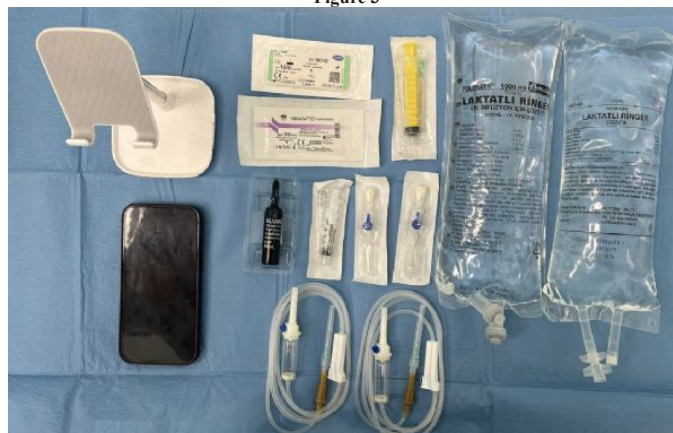


Figure 3





12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 15 September
Congress

OP-090

The Effect of Chrysin Pn Ischemia Reperfusion Injury in The Rat Inferior Epigastric Artery Skin Island Flap Model

Simay Erşahin¹, Nesrin Tan Başer¹, Narin Karagöz², Gülçin Şimşek²

¹University of Health Sciences, Gulhane Faculty of Medicine, Department of Plastic, Reconstructive and Aesthetic Surgery, Ankara / Türkiye

²University of Health Sciences, Gulhane Faculty of Medicine, Department of Pathology, Ankara / Türkiye

Background

The return of oxygenated blood by reperfusion after ischemia initiates paradoxical tissue destruction reactions, called ischemia-reperfusion (I/R) injury. The aim of our study is to reveal the effect of “chrysin” on I/R injury in epigastric island flaps in rats.

Material and Method

30 male Wistar Albino rat randomly divided into five groups; sham control (Group I), vehicle control (Group II), 10 mg/kg/day chrysin (Group III), 50 mg/kg/day chrysin (Group IV), 100 mg/kg/day chrysin (Group V). Sham group was exposed to no stress, control group fed with distilled water and Groups III, IV and V were fed with appropriate doses of treatment agent for seven preoperative and postoperative days. Flap elevation was performed on the 8th day of the study, and subjects were exposed to ischemia for 8 hours. Flap survival, biochemical and histopathological parameters were evaluated.

Results

Flap survival was found to be higher in groups III and IV, although the differences were not statistically significant. Total oxidant stress levels were found to be lower in all treatment groups, although the differences were not statistically significant. Total antioxidant capacity did not affect the positive outcome. Oxidative stress index was found to be lower in groups III and IV although the differences were not statistically significant. TNF- α levels of groups II, III and V were found to be statistically significantly higher than the sham-group. Even though all treatment groups' values were lower than the vehicle-control group, the dose of 50 mg/kg/day significantly reduced TNF- α levels. Although histopathological parameters such as active inflammation, chronic inflammation, ulceration, and vascular proliferation were all positively affected by the treatment, only fibroblast activity score was statistically significant.

Conclusion

The study showed that although histopathological parameters changed favorably at all treatment dosages, flap survival rate was only positively impacted at doses of 10 mg/kg/day and 50 mg/kg/day. Additionally, the death of one rat in the 100 mg/kg/day group reminds the possibility that this dosage is hazardous or has unwanted side effects. The beneficial impact on flap survival is most likely due to a decrease in oxidant levels rather than an increase in antioxidant capacity. Further studies are required to explain the mechanism of this effect. We believe that chrysin can find a place in reconstructive surgery due to its easy accessibility and simple preoperative and postoperative application. We also believe that this experimental investigation will shed light on further experimental and clinical research.

Keywords: Chrysin, flap, groin flap, inferior epigastric artery skin island flap, ischemia reperfusion



12th

BAPRAS CONGRESS

2023

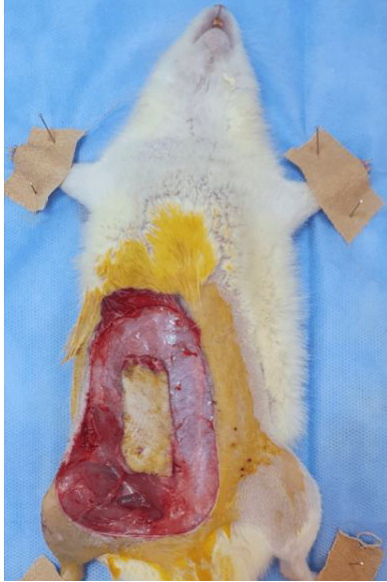
Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Figure 1



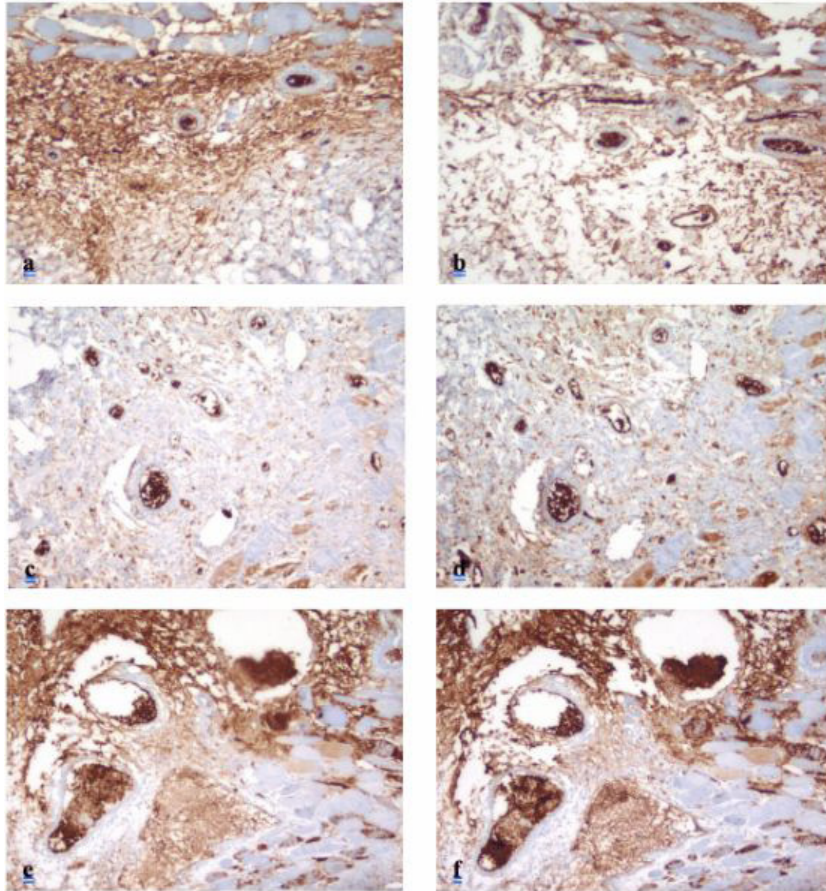
The flap was elevated.

Figure 2



Flap survival rates of flaps were calculated with the ImageJ program.

Figure 3



Immunohistochemically stained preparation samples with CD31 and CD34 antibodies used for the evaluation of vascular proliferation. The preparations present on the left (a,c,e) were stained with anti-CD31, and those on the right (b,d,f) with anti-CD34. Preparations in the first row (a,b) belong to the sham-control group, the second (c,d) to the vehicle-control group, and the third (e,f) to the 10 mg/kg/day chrysin treatment group (group III). Vessel diameters and numbers increase from sham-control group to treatment group.



OP-091

A New Treatment for the Prevention of Radiotherapy Skin Complications; Comparison of Wharton's Jelly Mesenchymal Stem Cell and Conditioning Medium Efficacy

**Ahmet Bilirer¹, Tahsin Murat Aktan², Selçuk Duman², Zeliha Esin Çelik³, Murat Çelik³, Çağdaş Yavaş⁴,
Mürsel Düzova⁴, Zekeriya Tosun¹**

¹Selçuk University Plastic Reconstructive and Aesthetic Surgery Department, Konya / Türkiye

²Necmettin Erbakan University Histology and Embryology Department, Konya / Türkiye

³Selçuk University Pathology Department, Konya / Türkiye

⁴Selçuk University Radiation Oncology Department, Konya / Türkiye

Cancer is a significant disease leading to increasing prevalence, mortality, and morbidity in today's world. According to the International Agency for Research on Cancer, it was estimated in recent days that 1.27 million of the 7.6 million deaths worldwide originated from new cancers (Ferlay, Bray et al. 2004). About 80% of oncology patients undergo radiotherapy at some point in their treatment. Almost all patients receiving radiotherapy experience skin reactions due to radiotherapy, seeing both acute and chronic radiodermatitis that follows. While attempts are made to resolve radiodermatitis with various pharmacological methods today, it remains a significant issue where the loss of dermal cells and functional matrix due to radiotherapy cannot be prevented. It is the most important factor restricting the treatment process and decreasing the quality of life. Currently, stem cell-based studies are prominent in addressing this dermal cell deficiency and replacing the matrix.

In this study, based on previous stem cell studies, the efficacy of Wharton Jelly-derived mesenchymal stem cells and the Conditioning Medium obtained from these cells in preventing skin damage resulting from radiotherapy was researched and compared with the fat injection method commonly used in clinical practice. After applying a total of 30 Gy radiotherapy to a 4x2 cm area on the backs of rats, reaching a depth of 2mm; on days 30, 37, and 45, the 1st group received Wharton Jelly-derived stem cells, and the 2nd group received the Conditioning Medium. The 3rd group, which is the fat injection group, received autologous fat injection on day 30. Skin samples were taken at 60 days, and the experiment was terminated. The obtained samples were macroscopically evaluated with the radiodermatitis classification of the National Cancer Institute. Microscopically, the thickness of the epidermis and dermis, the number of skin appendages, and the level of inflammation in HE staining were assessed. In immunohistochemical assessment, vascularization was evaluated with anti-VEGF staining, while skin fibrosis was assessed with anti-TGF staining. The maturity of collagen in the dermis was evaluated with Picro Sirius Red staining.

In our study, the group receiving WJ-MSC treatment scored the best in macroscopic inspection. In this group, macroscopic wound healing was observed better, and the amount of alopecia was determined to be less. Except for one rat (Grade 2), all rats were determined as grade 1. The microscopic reflection of this situation is similar. In the WJ-MSC group, both the epidermis (average 32.8µm) and the dermis (average 1147.40µm) were observed to be thicker and preserved (in the control group, epidermis 16.22 µm, dermis 759 µm). The group with the highest number of skin appendages and the most preserved hair follicles was the WJ-MSC group (an average of 4.17 per microscopic area; in the control group, 1.67).

In our study, in line with the literature, it was determined that WJ-MSC minimizes the severe inflammatory process occurring in radiotherapy and increases wound healing. In the fat graft group, acute inflammation predominantly continues due to fat necrosis that developed as a result of graft loss. Based on this data, it was concluded that the WJ-MSC treatment for skin regeneration would be much better than fat grafting. In the WJ-MSC group, dermal fibrosis developed at a minimal level (grade 1), while it was determined as grade 3 in the fat injection and Sham groups. WJ-MSC gives us the conclusion that both the quantity of dermis being more and according to the scar index, containing mature collagen, the amount of dermis and its function is preserved, and fibrosis developing in the chronic period is prevented. The results of the CM group and the WJ-MSC group were determined to be significantly superior to other groups in a similar way. The CM group scored the highest in macroscopic and microscopic parameters (epidermis, dermis thickness, number of skin appendages in microscopic inspection) following the WJ-MSC group and was statistically determined in the same group as the WJ-MSC group. The superiority of our study to the studies in the literature is that this effect can be compared with the effect of WJ-MSC. In this comparison, it was determined that the anti-inflammatory effect of the WJ-MSC group was not observed in the CM group, and the inflammation score of the CM group was higher (1 in the WJ-MSC group; 2 in the CM group).



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

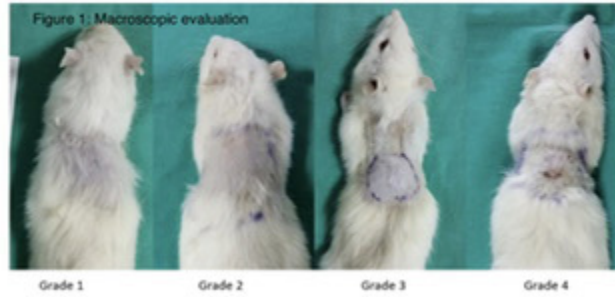


13 September
Pre Congress Course
14 - 15 September
Congress

An important parameter to compare whether WJ-MSCs are superior to the effects of autologous fat injection, which has established itself in clinical practice, and whether it is suitable for clinical practice. It was determined that the macroscopic scoring of the fat injection group was better than the control and Sham groups. However, when this group was compared with the WJ-MSC and CM groups, it was seen that the macroscopic scores were better in the WJ-MSC and CM groups (mostly grade 1 for WJ-MSC, half and half grade 1 and 2 for CM, mostly grade 2 for fat injection). Microscopically, it was observed that fat injection did not have a statistically significant effect on the thickness of the epidermis and dermis (sig.: 0.000 < p-value: 0.05). In the fat injection group, fat necrosis in grafts and inflammatory areas, mostly grade 4, around necrotic areas are noticeable. In the samples of the fat injection group, the fact that the anti TGF- β staining, which is a marker of the chronic inflammatory process, was scored as grade 3, which is the highest fibrosis score, reveals that fat injection does not suppress the acute and chronic inflammation developed in radiodermatitis; moreover, it increases acute inflammation due to necrotic fat graft areas. Based on this result, it was determined that WJ-MSC and CM treatment is a much more effective method than fat injection in maintaining skin integrity in the radiodermatitis table. Wharton's jelly mesenchymal stem cell and Conditioning medium are effective treatment methods that reduce inflammation while regenerating dermis and epidermis structures and are oncologically reliable in radiation-induced skin injury.

Keywords: Radiotherapy, wharton's jelly mesenchymal stem cells, fat injection, conditioning medium, radionecrosis

Macroscopic evaluation



Radiotherapy application





12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

OP-092

Low Molecular Weight Heparin Applied Subcutaneously Under the Skins of Rat Abdominal Flaps Suffering Venous Insufficiency Has No Beneficial Effect On Flap Survival

Bora Edim Akahın, Hüseyin Can Yücel, Erol Kozanoğlu, Dicle Aksoyler

Department of Plastic, Reconstructive and Aesthetic Surgery, Istanbul University, Istanbul Faculty of Medicine, Istanbul / Türkiye

Introduction

The aim of this study is to demonstrate that low molecular weight heparin (LMWH) applied subcutaneously under the skins of rat abdominal flaps suffering venous insufficiency has any salvage effect.

Materials and Methods

30 superficial inferior epigastric artery flaps were raised bilaterally on 15 male Sprague Dawley rats. The pedicles were dissected and skeletonised. Superficial inferior epigastric vein is clamped for eight hours. Group 1, including 10 flaps, did not receive any anticoagulant. Group 2, including 5 flaps on the right abdomen, received LMWH subcutaneously under the flap's skin. Group 3, including 10 flaps, received LMWH under the nuchal skin.

Group 4, including 5 flaps on the left side, received LMWH under the contralateral flap skin. The necrosis percentage is measured on fifth day.

Results

The mean necrosis percentage of flaps was $61,90 \pm 49,24$ for Group 1, $47,20 \pm 50,39$ for Group 2, $50 \pm 52,71$ for Group 3, $51,60 \pm 50,13$ for Group 4. The difference between the groups was not statistically significant ($p=0.938$).

Conclusions

It is not recommended to apply LMWH inside flaps in venous congestion

Keywords: Flap salvage, Animal study, Rat, Low molecular weight heparin, Experimental



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

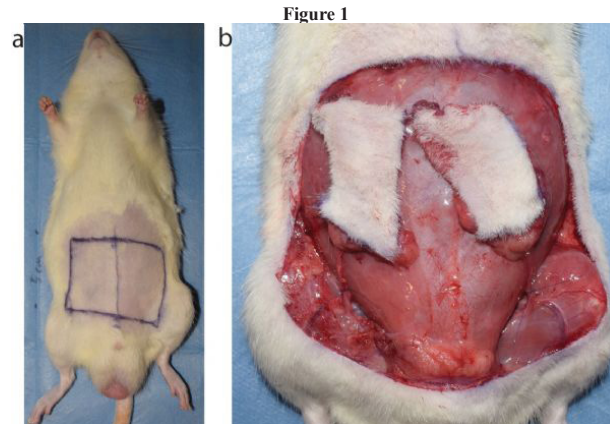


Figure 1

(A) Marking of bilateral flaps (B) Bilateral raised flaps:
Superficial inferior epigastric artery and vein pedicles were dissected and bilateral flaps were elevated

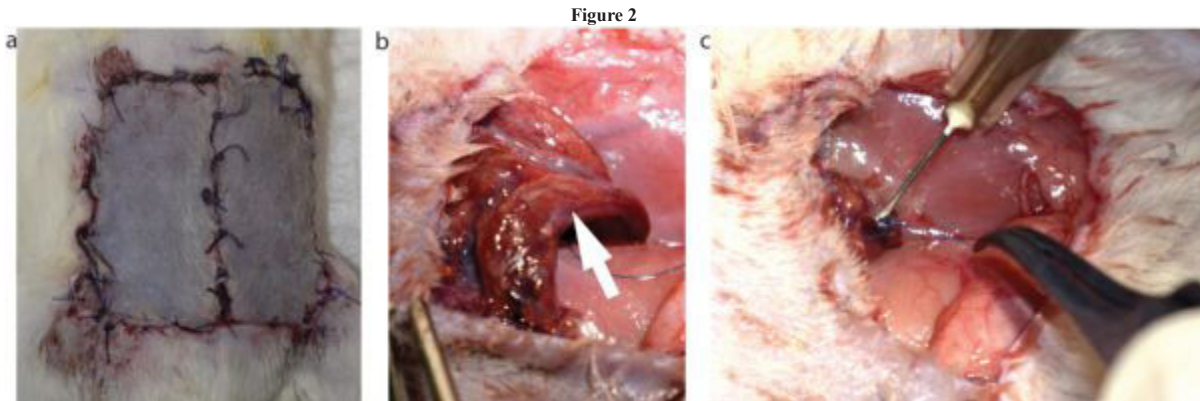


Figure 2

(A) Venous congestion of the flaps (B) Arrow: Engorged vein, (C) Removal of sutures

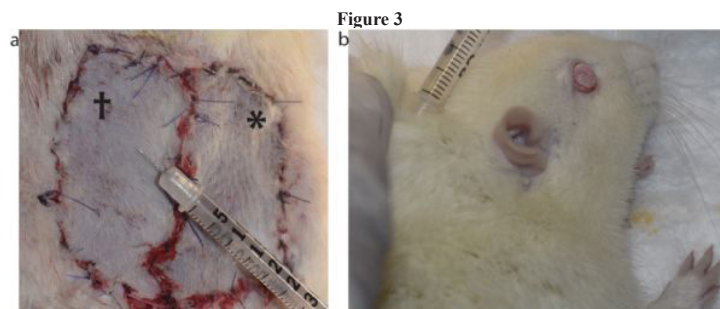


Figure 3

Administration of anticoagulant (A) in the right flaps, local subcutaneously under the flap's skin.
Group 2: † and Group 4: * (B) in the neck skin systemically, Group 3

Table 1

GROUP	Mean	N	Std. Deviation
1	61.90	10	49.242
2	47.20	5	50.390
3	50.00	10	52.705
4	51.60	5	50.128
Total	53.77	30	48.450

Percentage of Necrosis



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

OP-094

Time-Related Variations in Viability of Random Pattern Skin Flaps: An Experimental Study in Rats

Osman Enver Aydın¹, Kadir Cicek¹, Ender Ceylan¹, Ayça Tuzcu², Anıl Pehlevan¹, Necati Demir¹

¹Plastic Reconstructive and Aesthetic Surgery Dept., Medical School, Aydın Adnan Menderes University, Aydın / Türkiye

²Biochemistry Dept., Medical School, Aydın Adnan Menderes University, Aydın / Türkiye

Background

Chronobiological variations are in the fabric of life. Time changes the way that our body holds certain biological processes. Actions and reactions to effects change with respect to time of the day or year. The first ideas regarding the possible effects of circadian rhythm on surgical outcomes were published in the early 2000s. However, these studies showed conflicting results. There are studies that support and oppose this idea. The lack of experimental evidence in a controlled setting has led to this study. The aim of this study was to explore the chronobiological implications on surgical outcomes.

Materials and Methods

The rats were grouped into four and were subjected to random pattern dorsal skin flap, at 6 h intervals. Flap necrosis rates and melatonin, oxidant, and antioxidant factors were studied in consistent time intervals with the surgical intervention.

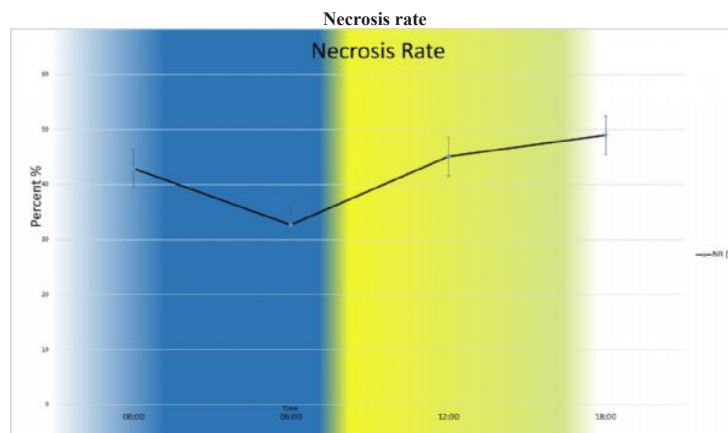
Results

Flap survival was better in the 06:00h group. The flap necrosis was higher in the 18:00h group. Some of the biochemical parameters displayed circadian variations.

Conclusions

The time of surgical intervention as an independent variable changed the flap survival rates. This study is the first experimental evidence for “Chronosurgery” in a controlled setting. Further studies in all aspects of surgical disciplines are required.

Keywords: Chronobiology, Chronosurgery, Circadian Rhythm, Surgical Outcomes, Skin Flap, Melatonin



The figure shows the variability of the flap necrosis with respect to time of day.



OP-095

Perception of Plastic Surgery in Medical Students Prior to Plastic, Reconstructive and Aesthetic Surgery Training

Elif Gundes, Aytac Alten

Istanbul University, Istanbul Medical Faculty, Plastic, Reconstructive and Aesthetic Surgery Department, Istanbul / Türkiye

Introduction

The perception of Plastic, Reconstructive and Aesthetic Surgery shows variability in our society and in the world. As in the society, different perceptions on plastic surgery are observed among medical students. In medical students; various perceptions about the fields of plastic surgery can be formed due to the experiences they encounter in their environment and social media impressions prior to the medical education curriculum of plastic surgery. This perception, which is formed and created by those outside the field of plastic surgery, can even be effective in the decision-making mechanism of students regarding their careers. The aim of this study is to observe the differences in perception of the fields of plastic surgery among students who have not yet completed plastic, reconstructive and aesthetic surgery internship.

Materials and Methods

Our study included students who were to complete their plastic, reconstructive and aesthetic surgery training for the first time between September 2022 and May 2023 in our faculty. The students included in the study had not previously attended any plastic surgery training in an official institution. Before the first course of the internship training, each student was administered a questionnaire consisting of 30 clinical scenarios to contain the basics of plastic surgery. (Table 1) In the questionnaire survey, the students were asked to answer to which specialties they would consult the relevant patient and their answers were recorded. As a result of the questionnaire, questions and answers about plastic surgery and related specialties were evaluated.

Results

In our study, seventy-five 5th grade students who had not yet been trained in Plastic, Reconstructive and Aesthetic Surgery in our faculty participated. According to the answers to the survey questions, in terms of the department to which they referred the patients; 36% of the students preferred the plastic surgery department for wound healing. For excision of skin tumors, 53% preferred the plastic surgery team. Concerning genital aesthetics, 47% of the students preferred obstetrics and gynecology department, while the other students preferred plastic surgery. When otoplasty surgery was planned, 66% of students preferred the ear, nose and throat specialists. In terms of breast cancer reconstruction, 97% of students preferred plastic surgery. For a patient in need of finger replantation, 77% of the students chose plastic surgery. For nerve entrapment surgery, 29% of students preferred plastic surgery. In terms of excision of facial bone tumors, 62% of the students preferred plastic surgery and 13% preferred oral maxillofacial surgery. For maxillofacial fracture, 65% of the students prioritized plastic surgery. While 92% of students preferred plastic surgery for cleft lip operation, 77% of students chose plastic surgery for cleft palate. For a patient scheduled for blepharoplasty, 86% of the students favored plastic surgery. For the patient planned for orthognathic surgery, 66% of the students preferred plastic surgery and 28% of the students preferred oral maxillofacial surgery. Regarding fascial plastic surgery, 96% of the students indicated plastic surgery department. Regarding burns, 74% of the students thought that the plastic surgery department was the area of interest. In terms of upper extremity laceration, 68% of the students chose the plastic surgery department for trauma. For syndactyly operation, 92% of the students answered plastic surgery. In terms of gynecomastia treatment, 50% of the students preferred the plastic surgery department. (Table 2)

Discussion and Conclusion

Plastic, Reconstructive and Aesthetic Surgery is a specialty that has multiple multidisciplinary areas of interest with many related branches and has a wide spectrum of patient portfolio. Although the fields of plastic surgery are not clearly recognized by the society and medical students, as in our study, there are perceptual differences. As we have seen in our study, the interest of other branches in plastic surgery causes confusion in medical students. For instance, in our study, the fact that the Obstetrics and Gynecology team is also prominent in genital aesthetics, the Ophthalmology team is at the forefront in oculoplastic surgery or the Ear, Nose and Throat team is featured in otoplasty shows the perception of medical students.



The fact that peripheral nerve surgery, hand surgery and replantation surgery are among the main areas of plastic surgery has not yet been sufficiently understood by medical students, and it is thought that they may be of interest to the Orthopedics department. Although it is observed that there is a general and correct approach among medical students regarding which branch prioritizes breast cancer and breast cancer reconstruction, it can be thought that this situation is a result of the efforts made for breast cancer awareness in our country and in the world. Orthognathic surgery, unfortunately, may be seen by medical students as the priority of dentists, but it is one of the main interests of Plastic Surgery and should not be misplaced. In conclusion, since plastic surgery education does not have a role in the medical education curriculum until the 5th grade in our country, it is not perceived accurately by students. With the influence of social media on society and young people, the perception that the main occupation of plastic surgery is aesthetic surgery is created; hand surgery, orthognathic surgery, maxillofacial fractures and congenital head-neck anomalies remain in the background even for medical students. At the same time, it was observed that there were perceptual differences in medical students in the fields of genital aesthetics, otoplasty, oculoplastic surgery, fascial plastic surgery as a result of aesthetic surgery applications in their fields by other branch physicians who were not authorized for aesthetic surgery.

As Plastic, Reconstructive and Aesthetic surgeons, we can aim to prevent such perceptual differences by embracing each area of interest of our branch and conveying accurate information to our students on these issues. With the results of our study, we can say that medical students' internship practices for plastic surgery training at an earlier period within the curriculum can raise awareness on these issues. In addition, among the objectives of our study is to evaluate the results by comparing the outcomes using pre- and post-internship questionnaires.

Keywords: perception of plastic surgery, medical student education, social media, cosmetic surgery, plastic surgery internship

Table 2: Table showing how many students prefer which specialty for each question

QUESTIONS / RELATED SPECIALTY	P R S	E N T	G S	O B G Y N	D E R	O R T	O M S	N E U S	H B O T	O P H T	I N T	O R	N E U	P M R	X
Q1 - Wound healing	27		9		10				12		17				
Q2 - Skin cancer excision	40		3		28						3				
Q3 - Genital aesthetics	40			34											
Q4 - Breast cancer treatment	3		70								1				
Q5 - Otoplasty	26	48													
Q6 - Facial reanimation	45						1	13							3
Q7 - Breast cancer reconstruction	73		1												
Q8 - Bariatric surgery	10		60								4				
Q9 - Finger replantation	58		3			13									
Q10 - Carpal tunnel surgery	22		1			17		3					14	16	
Q11 - Abdominoplasty	34		3								17				
Q12 - Oral tumors	25	33	8				3				4				1
Q13 - Maxillomandibular bone tumors	47	8	5			3	10				1	1			
Q14 - Maxillofacial fracture	49	2	1			12	4	4		1		1			
Q15 - Reconstruction after oral tumor excision	67	5	2												
Q16 - Skin tumor excision on the eyelid	34		5		4					10	1				
Q17 - Ear replantation	34	18	2												
Q18 - Cleft lip	69	2	2												
Q19 - Cleft palate	58	8					1				2				
Q20 - Blepharoplasty	65									8			1		
Q21 - Reduction mammoplasty	61		10								3				
Q22 - Orthognathic surgery	50					2	21					5			
Q23 - Microtia reconstruction	56	17													1
Q24 - Facial plastic surgery	72												2		
Q25 - Burn treatment	56		13		5										
Q26 - Arm lift and thigh lift	68		3								3				
Q27 - Upper extremity laceration	51		14			7		1							1
Q28 - Syndactyly	69		1			3					1				
Q29 - Nose reconstruction	63	7			2		1				1				
Q30 - Gynecomastia surgery	38		15								31				

PRS; Plastic, Reconstructive and Aesthetic Surgery
ENT; Ear, Nose and Throat
GS; General Surgery
OB&GYN; OB&GYN
DER; Dermatology

ORT; Orthopedics
OMS; Oral Maxillofacial Surgery
NEUS; Neurosurgery
HBOT; Hyperbaric Oxygen Treatment
OPHT; Ophthalmology

INT; Internal Medicine
OR; Orthodontics
NEU; Neurology
PMR; Physical Medicine and Rehabilitation
X; No answer



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Table 1: Plastic, Reconstructive and Aesthetic Surgery Student Questionnaire

- 1 Which branch would you refer a patient with wound healing problems to?
- 2 Which specialty would you refer the patient to for excision of a lesion suspicious for skin cancer?
- 3 When you are a general practitioner, when a patient with a request for vaginoplasty consults you, to which branch would you refer her?
- 4 Which branch would you refer a patient diagnosed with breast cancer to for surgical treatment?
- 5 To which branch would you refer a patient with prominent ear problems and a desire for otoplasty?
- 6 To which department would you refer a patient with a congenital or acquired facial nerve disorder for fascial reanimation?
- 7 Which branch would you refer a patient who has undergone unilateral or bilateral mastectomy for breast cancer to for reconstruction?
- 8 Which specialty would you refer a patient being followed for obesity to for bariatric surgery consultation?
- 9 As an emergency physician, when a patient with finger amputation presents to you, from which specialty do you ask for consultation?
- 10 Which branch would you refer a patient with carpal tunnel syndrome to?
- 11 Which branch would you refer a patient with massive weight loss and abdominal sagging to?
- 12 Which branch would you refer a patient diagnosed with a lingual tumor to for surgical excision?
- 13 To which branch would you refer a patient with a tumor in the mandible for surgical excision?
- 14 As an emergency physician, which specialty would you consult a patient with a zygoma fracture due to trauma?
- 15 Which branch would you refer a patient who underwent surgical excision for lingual tumor to for reconstruction?
- 16 To which specialty would you refer a patient with malignant skin cancer in the upper eyelid for surgical excision?
- 17 As an emergency physician, which specialty would you consult a patient with post-traumatic ear amputation?
- 18 When you work as a general practitioner, to which specialty would you refer a patient with cleft lip?
- 19 When you work as a general practitioner, which specialty would you consult a patient with cleft palate?
- 20 To which branch would you refer a patient with droopy upper and lower eyelids?
- 21 Which branch would you refer a patient with macromastia to?
- 22 Which branch would you refer a patient who is having orthodontic treatment for jaw deformities to when surgical intervention is required?
- 23 Which specialty would you refer a patient diagnosed with microtia due to a developmental defect in the external ear to for ear reconstruction?
- 24 Which branch would you refer a patient with facial sagging to?
- 25 As an emergency physician, from which branch would you ask for consultation in a patient presenting with burns?
- 26 Which branch would you refer a patient with sagging arms and legs after massive weight loss?
- 27 As an emergency physician, which specialty would you ask for consultation from a patient presenting with a forearm laceration?
- 28 As a primary care physician, to which specialty would you refer a patient presenting with adhesions in the fingers of the hand?
- 29 In a patient undergoing excision of a malignant skin tumor from the nose, which specialty would you consult the patient in case of an open defect?
- 30 Which branch would you refer a patient with gynecomastia to?



OP-096

Analysis of Patients Operated for Malignant Melanoma in The Last 16 Years

Soysal Baş, Furkan Cestepe, Alper Taşan, Kamuran Zeynep Sevim

University of Health Science Şişli Etfal Research and Training Hospital Plastic Surgery Department, İstanbul / Türkiye

Introduction

Skin cancers are the most common type of cancers. Although malignant melanoma constitutes only 4% of all malignant neoplasms, it has an important situation for both surgeons and diagnosed patients due to its aggressive progression. People with fair skin or freckles, blue eyes, light hair and a genetic predisposition have a higher risk of developing malignant melanoma. History of a changing mole, history of melanoma or non melanoma skin cancer, family history of cutaneous malignant melanoma, atypical nevus, age of onset(<40 y), history of severe blistering sunburns or intense intermittent sun exposures, immunosuppression can be counted among risk factors.

ABCDE diagnostic tool was developed at the New York University Langone Medical Center. It was for educate the public and general healthcare practitioners. It is a system used to make the biopsy decision in suspicious lesion. According to the clinical ABCDE (Asymmetry, Border, irregularity, Color, Diameter and Evolution), 3/5 positivity creates the suspicion of melanoma. The most important one is the E rule, that is, the evolution of the lesion. Evolution is the change in volume, shape, symptoms, surface or color tones of the pigmented lesion over time.

The four main clinical types of melanoma are superficial spreading melanoma, nodular melanoma, lentigo malignant melanoma and acral lentiginous melanoma. The most common of these are superficial spreading melanoma.

In most patients who develop recurrence, the disease is in the form of local recurrence and/or locoregional lymph node metastasis. Apart from that, the most common sites of metastasis are subcutaneous tissues, lymph nodes far from the drainage site of the primary tumor, lung, liver, brain and bone.

The aim of this study is to show the characteristic features of malignant melanoma in Türkiye.

Material and Method

In this study, patients with a diagnosis of malignant melanoma who were operated at University of Health Science, Sisli Hamidiye Etfal Training and Research Hospital between 2007 and 2023 were retrospectively reviewed. Patients, age, comorbidities, lymph node and distant metastases, TMN staging; tumor size, localization and subtype, presence of ulceration, number of mitoses, perineural invasion; clark and breslow staging were analyzed pathologically. Surgical operations, slnb or dissection performed on the patients were noted. Postoperative surgical margins, conditions such as recurrence and the survival status of the patients were added to the study.

Results

A total of 160 number of patients were analyzed. Patients were 92 male and 68 female. Overall age of the patients was 56. 19 % of patients had diabetes and 44% had hypertension.

Tumor localization was most common in lower extremity with 32,5%, and upper extremity was in the second rank. Tumor diameter mean was 2,3 cm. Subtypes of tumors were noted as 33% superficial, 30% nodular. Presence of ulceration was detected 44%, perineural invasion 16%. Mean mitosis was 3,84.

When the patients was examined in terms of metastases; lymph node metastases were found in 42 number of patients and distant metastases were found in 22 of patients. According to TMN staging, 37,5% patients are T1, 15,5% T2, 17% T3, 30% T4.

Clark staging 1 seen in 4 % of patients, 2 in 17 % of patients, 3 in 25 % of patients, 4 in 47 % of patients, 5 in 7 % of patients. Metastasis was detected in 21% of patients who underwent SLNB. Lymph dissection was performed on 39 of the patients. Recurrence was seen in 15 number of patients. As of the date of the study, it was seen that 24 patients has died.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Conclusion

The incidence of cutaneous malignant melanoma is increasing in Türkiye as well as all over the world. Important factors in malignant melanoma morbidity and mortality are still a matter of debate.

However, early diagnosis and treatment are the most important factors in mortality.

References

- 1- Ferreira, T. L., De Abranches Oliveira Santos, I. D., Oliveira, A., & Ferreira, L. M. (2018b).. Retrospective study of patients with cutaneous melanoma treated at the Federal University of São Paulo. "The Journal of the Brazilian College of Surgeons" 45(4).
- 2- Eftekhari, H., Fahim, S., Aryanian, Z., Goodarzi, A., Sadeghinia, A., Nourmohammadpour, P., Mazandarani, M., Pourali, A. R., Khosravi, S., Khodashenas, Z., & Nouralinejad, M. (2021). A retrospective large original study of cutaneous melanoma. "Pakistan Journal of Medical and Health Sciences", 15(6)-
- 3- Shenenberger DW. Cutaneous malignant melanoma: a primary care perspective. Am Fam Physician. 2012 Jan 15;85(2):161-8. PMID: 22335216.
- 4- Naik PP. Cutaneous Malignant Melanoma: A Review of Early Diagnosis and Management. World J Oncol. 2021 Feb;12(1):7-19. doi: 10.14740/wjon1349. Epub 2021 Feb 24. PMID: 33738001; PMCID: PMC7935621.
- 5- Hoffman, S. J., Yohn, J., Norris, D. A., Smith, C. M., & Robinson, W. A. (1993). Cutaneous malignant melanoma. Current Problems in Dermatology, 5(1), 7-41. https://doi.org/10.1016/1040-0486(93)90016-o

Keywords: malignant, retrospective, tumor, melanoma, mortality



OP-097

The Relationship Between Different Basal Cell Carcinoma Subtypes and Neutrophil to Lymphocyte Ratio, Platelet to Lymphocyte Ratio, and Pan-Immune-Inflammation Value

İşıl İrem Turan, Ömer Faruk Akpınar, Erol Kozanoğlu

Department of Plastic, Reconstructive, and Aesthetic Surgery, İstanbul University, Faculty of Medicine, İstanbul / Türkiye

Introduction and Aim

Basal cell carcinoma (BCC) is the most common type of skin cancer. Among more than 26 subtypes of basal cell carcinoma; nodular, micronodular, superficial, morpheaform, infiltrative, and fibroepithelial BCC are the most frequent ones. Despite the precise definitions of these subtypes, the specific etiology of their differentiation is still unknown.

The immune system plays a significant role in the tumorigenesis and prognosis of many cancers, including skin cancers. The interactions between the immune system and various types of cancers have been elucidated with basic immunologic markers such as neutrophil and platelet-to-lymphocyte ratios (NLR, PLR) and pan-immune-inflammation value (PIV). The complete blood count (CBC) test is a cheap and easy way of monitoring the immune system components present in the peripheral blood. Inflammatory markers like the neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), and pan-immune-inflammation ratio (PIV) can be calculated via complete blood count test results. The pan-immune-inflammation value (PIV) is calculated with the formula: (the neutrophil count (103/mm³) x platelet count (103/mm³) x monocyte count (103/mm³)) / lymphocyte count (103/mm³).

In this study, the NLR, PLR, and PIV of patients with nodular, superficial, and morpheaform type basal cell carcinoma were compared in order to find a differentiating effect of the immune system over the basal cell carcinoma subtypes.

Materials and Methods

The patients who were operated for basal cell carcinoma between January 2019 and December 2022 at our institution were included in this study. The patients were grouped according to the pathologically approved subtypes (nodular, superficial, and morpheaform) and their PLR, NLR, and PIV values were calculated. The complete blood counts (CBC) were performed two weeks before the surgery. All ages and genders were included. The platelet-to-lymphocyte ratio (PLR), neutrophil-to-lymphocyte ratio (NLR), and pan-immune-inflammation value (PIV) were compared according to the pathological subtypes.

Results

A total of 38 patients were included in this study. Twenty-four patients (65.15 %) were female whereas 14 patients (36.85 %) were male. Out of 15 nodular, 13 superficial, and 10 morpheaform type basal cell carcinoma cases, all three groups had female dominance. There was also, statistical significance between the ages of the three groups (p:0,028). With a median of age of 75 years, the morpheaform basal cell carcinoma group was older than the superficial basal cell carcinoma group, which was statistically significant (p:0,023).

Among the immunological values evaluated in this study; the platelet count of the morpheaform basal cell carcinoma cases was less than that of the nodular and the superficial basal cell carcinoma group with a p-value of 0,043 and 0,021 respectively. Also, the PIV value of the morpheaform basal cell carcinoma cases was less than that of the nodular and the superficial basal cell carcinoma cases (p: 0.046 and p:0.020, respectively).



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

Discussion and Conclusion

As the most commonly seen skin cancer type, basal cell carcinoma is also under the attention of many researchers. Although most basal cell carcinoma subtypes have an indolent course, the morpheaform subtype is more aggressive. This characteristic difference has not yet been explained biologically.

The immune system plays a role in both tumorigenesis and prognosis of many cancer types. It is also thought to have a role in the differentiation of tumor subtypes. The immune system elements can be monitored by peripheral blood via a complete blood count (CBC) test. Both count of the elements and compound indices such as neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), and pan-immune-inflammation value (PIV) can be evaluated about the role of the immune system over tumor subtype differentiation.

According to the results of this retrospective study, the PIV and the platelet count of the morpheaform basal cell carcinoma cases were less than that of the other two groups which shows that platelets may play a role in the differentiation of basal cell carcinoma subtypes.

Keywords: Basal cell carcinoma, immune system, neutrophil to lymphocyte ratio, pan-immune-inflammation value, platelet to lymphocyte ratio

Table 1 Age and Sex Comparison of Nodular, Superficial, and Morpheaform BCC

	NODULAR BCC Median (Q1, Q3)	SUPERFICIAL BCC Median (Q1, Q3)	MORPHEAFORM BCC Median (Q1, Q3)	Test Value (χ^2)	P
Age	64 (57, 73)	57 (54, 70)	75 (70, 77)	a7.133	0.028*
n (%)		n (%)	n (%)		
Sex				b0.802	758
Female	10 (66.7)	7 (53.8)	7 (70)		
Male	5 (33.3)	6 (46.2)	3 (30)		

aKruskal-Wallis Test results are presented as median (first quarter, third quarter). Fischer-Freeman-Halton Exact Test * $p < 0.05$

Table 2 CBC Parameters, NLR, PLR, and PIV of Nodular, Superficial, and Morpheaform BCC

	NODULAR BCC Median (Q1, Q3)	SUPERFICIAL BCC Median (Q1, Q3)	MORPHEAFORM BCC Median (Q1, Q3)	Test Value (χ^2)	P
Trombocyte	256000 (224000, 289000)	269000 (230000, 286000)	189000 (176000, 243000)	6.001	0.049*
Neutrophil	4600 (3800, 5400)	4800 (3250, 5500)	3540 (2600, 4620)	3.269	195
Lymphocyte	2000 (1500, 2200)	2100 (1800, 2400)	1960 (1450, 2300)	1.575	455
Monocyte	500 (400, 600)	600 (600, 660)	500 (400, 500)	4.536	103
NLR	2.45 (1.58, 3.81)	2.29 (1.44, 3.24)	1.99 (1.17, 2.41)	1.682	431
PLR	140 (90, 187.06)	127.78 (84.96, 152.11)	111.75 (78.7, 143.5)	1.933	380
PIV	301466666.7 (179200000, 445885714.3)	304137026.2 (205920000, 486736842.1)	159091666.65 (133189189.2, 204722222.2)	6.041	0.049*

Kruskal-Wallis Test results are presented as median (first quarter, third quarter). * $p < 0.0$



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

OP-098

Salvage Of The Exposed Cardiac Pacemakers With Prepectoral Transposition And Local Fasciocutaneous Flaps

Mehmet Fatih Camlı¹, Nuh Evin¹, Şeyda Güray Evin²

¹Department of Plastic, Reconstructive and Aesthetic Surgery, Bezmialem Vakıf University, İstanbul / Türkiye

²Department of Plastic, Reconstructive and Aesthetic Surgery, Marmara University, İstanbul / Türkiye

Introduction

Cardiac pacemaker systems consist of a battery and electrodes that travel through venous system to the heart. They function as fail-safe or regulatory systems to maintain appropriate cardiac functions and prevent arrhythmia induced complications. However, due to foreign nature of cardiac pacemaker systems, following implantation various complications can be seen. These include pain in the implantation site, infection and exposure caused by degradation of overlying tissues may occur. Many surgical techniques have been defined in literature for cardiac pacemaker salvage¹⁻³. In this study, the results of cardiac pacemaker transpositions beneath pectoral fascia following infection or expositions are presented.

Patients and Methods

Patients who underwent surgery for cardiac pacemaker transpositions were reviewed retrospectively. 22 patients who were operated and followed for at least 12 months are included in the study. Patients' age, gender, medical and surgical histories, comorbidities, time to exposure, laboratory, radiological and microbiological culture examination results, early and late complications due to salvage surgery were investigated.

Intraoperatively, the capsule formed around the pacemaker battery along with all necrotic and infected skin, subcutaneous and deeper tissues were debrided. Deep tissue culture samples were taken and sent for culture and antibiogram studies. Pectoral fascia was identified with inferomedial dissection and a new pocket under the pectoralis fascia was created. The pacemaker battery was transposed to the new subfascial pocket. Pectoral fascia was closed with sutures, and drain was placed in the original pocket. The previous pocket was obliterated with subdermal sutures and skin was closed accordingly. Empiric antibiotherapy was started and later was rearranged with accordance to culture and antibiogram results.

At postoperative 12 months, all patients were evaluated with ultrasonography. Battery position, pocket thickness and condition were recorded.

Results

A total of 22 patients were included in the study. 15 patients were male and 7 were female. The mean age of patients was 68.4 SD12.3 years (54-85). Patients had various comorbidities including history of coronary artery by-pass graft surgery (n=6), diabetes mellitus (n=7), hypertension (n=13), anticoagulant use (n=19), battery loss due to exposure (n=2), smoking (n=14) and chronic kidney disease (n=2). Mean time from cardiac pacemaker implantation to exposure was 30.1 SD18.7 months (8-66), and patients had clinical signs of infection such as fever (n=2), purulent drainage (n=19), erythema and increased temperature at the pacemaker site (n=15), high WBC count (n=19) and CRP (n=22). No early or late complications, or recurrent exposure was observed in follow-up visits. 3 patients were culture negative, the rest had predominantly skin flora growth. Antibiotics were prescribed according to antibiogram results. In ultrasonography evaluations, no fluid collection or out-of-pocket malposition was observed.

Discussion and Conclusion

Instrumentation with foreign bodies such as cardiac pacemakers carry specific risks. This is further compounded by the nature of the patients' health conditions. Patients undergoing cardiac pacemaker implantation are predominantly the elderly with multiple comorbidities, along with probable previous operations. The risk factors for cardiac pacemaker exposure are detailed in the literature and mainly include subcutaneous tissue atrophy with aging, radiotherapy, chronic irritation with foreign body, comorbidities, superficial placement of batteries^{4,5}.



12th

BAPRAS CONGRESS

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Considering the risk factors, the alterable risk factors include the placement of the batteries into a deeper layer and increase the achieving enough distance between skin and the batteries. Pectoral fascia has robust vascular supply and provide good lining for the batteries. Local flaps may be useful option if this fascia is not available, or skin loss is not salvageable. Submuscular placement may be safer in these patients in terms of exposure risk but requires muscle dissection and may cause additional discomfort and pain following surgery. It may be better to have the option for further salvage. If all fails, free flaps may be considered but this is far from likely due to availability of the numerous local or distal flaps such as perforator-based flaps, rectus abdominis or latissimus dorsi based flaps. At the initial encounter of cardiac pacemaker exposure, the most simple, safe, fast and the least comorbid operation should be considered first due to the potentially comorbid situation of these patients.

Early intervention and if necessary, surgical intervention is necessary for cardiac pacemaker salvage⁴. The prepectoral plane, which is frequently used in breast reconstruction with implants, is a safe area for foreign body placement. Transposition of cardiac pacemaker batteries from subcutaneous plane to prepectoral subfascial plane for cardiac pacemaker exposure salvage is a simple and safe procedure compared to classical and complex flap options. Reconstructive ladder should be referred for further interventions when necessary.

References

- 1- Çiloğlu NS, Gümüş N, Eraslan T, Çiloğlu U. Salvage of the exposed cardiac pacemakers with pocket change and local flaps. Turkish Journal of Thoracic and Cardiovascular Surgery. 22(1)
- 2- Bonawitz SC. Management of exposure of cardiac pacemaker systems. Annals of plastic surgery. 2012;69(3):292-295.
- 3- Aksoy A, Dağdelen D, Sirvan SS. Ekspoze Olmuş Kalp Pillerinin Fasyakütan Lokal Flep Yardımı ile Kurtarılması. 2018;
- 4- Giaccardi, Marzia, Benito Baldauf, Ernest W. Lau, Stefan Borov, and Hendrik Bonnemeier. "Salvage of Cardiac Implantable Electronic Device Pocket Infection with Skin Erosion in Frail 92-Year-Old." Journal of Cardiovascular Development and Disease 9, no. 3 (2022): 81.
- 5- Toia F, D'Arpa S, Cordova A, Moschella F. Exposed subcutaneous implantable devices: an operative protocol for management and salvage. Plast Reconstr Surg Glob Open. 2015 Apr 7;3(3):e343. doi: 10.1097/GOX.0000000000000303. PMID: 26034650; PMCID: PMC4448718.

Keywords: Cardiac Pacemaker, Pacemaker Salvage, Implant Salvage, ICD Salvage, Prepectoral Pocket



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

OP-099

Assessment of Demographic Characteristics of Earthquake Patients and Psychological Impact of the Social Support Status of Patients with Fasciotomy After Injury

Özden Baz, Özer Özmut, Hasan Murat Ergani, Burak Yaşar, Ramazan Erkin Ünlü

Plastic Reconstructive and Aesthetic Surgery Department University of Health Sciences, Ankara Bilkent City Hospital, Ankara / Türkiye

Background

After the great earthquake in our country on February 6 2023, people in many cities were exposed to broken injuries left under collapsed structures. He was treated in the plastic surgery service for prolonged and recurrent bone loss and widespread injuries in the hospital with many earthquakes. The aim of this research is to evaluate the psychological state of patients undergoing post-earthquake fasciotomy surgery, which we monitor at our service, and to test the impact of post-traumatic social support on this process. Almost each of the 29 patients we assessed had major tissue defects and severe hand injuries. Our objective is to evaluate the psychological effects of the earthquake by comparing it with the general psychology of earthquakes in the literature and to define our intervention in severe trauma in post-earthquake patients.

Method

Our post-earthquake clinic included 29 patients who applied for Crush injuries and agreed to psychiatric evaluation between March 6 and March 30. As required, psychiatric consultations and supportive interviews were provided as part of this procedure. Our team was subjected to interventions, evaluations, and interviews by plastic surgeons, psychiatrists, and assistants. Participants were permitted to cease speaking whenever they desired. Patients who declined to participate were not assessed. Our team assisted patients with insufficient educational and physical conditions in completing written materials.

Results

Our study's findings indicate that the earthquake and its aftermath have a profound effect on the mental health and social lives of patients. After the earthquake, the surgical staff that will treat patients should be aware of their psychological condition. This awareness is crucial for the effective management of patient treatment processes. In addition to providing patients with psychological support, social support from the surgical team may be a crucial treatment. Differences in the experiences of patients treated by qualified plastic surgeons could be the subject of future research.

Conflict of interest: none declared

Keywords: earthquake, psychiatry, psychology, plastic surgery, social support



OP-100

A Very Rare Four-Case Porocarcinoma Case Series: Case Reports of Porocarcinoma with Confusion in Diagnosis and Literature Summary

Ersin Yavuz, Servet Yekta Aydın, Alp Ercan

Istanbul University- Cerrahpaşa, Cerrahpaşa Medical Faculty, Plastic, Reconstructive and Aesthetic Surgery, İstanbul / Türkiye

Introduction

Porocarcinomas are rare malignant eccrine sweat gland-derived tumors that are less than 0.005% of all malignant epithelial cutaneous tumors. These tumors, which are mostly seen in the lower extremities, are mostly seen in old age. They were first described in 1967 and until 2017, only 453 cases were reported in the world population.

In this study, we aimed to present four cases of porocarcinoma with different initial pathologic diagnoses (3 patients with punch Bx, 1 patient with incisional Bx confirmed by pathologic diagnoses) that were referred to our clinic between 2020 and 2022 and to review the existing literature on the management of this rare patient population. We aimed to contribute to the literature by answering the question of whether porocarcinoma cases, which are known to be extremely rare according to the literature, are actually more common than the rate stated in the literature or whether the diagnosis of porocarcinoma is missed due to misdiagnosis in our clinic in a short period of 3 years (between 2020-2022). A secondary aim of this study is to prevent misdiagnosis of this malignant tumor that can show rapid progression and to emphasize the importance of determining the appropriate surgical and adjuvant treatments.

Case 1

A 76-year-old woman with no known disease other than hypertension and coronary artery disease was referred to an external dermatology center after the lesion on the posterior left arm, which started as a small open wound in 2010, rapidly increased in size and caused intermittent bleeding in the last two years. The incisional biopsy revealed BCC and the patient was referred to our clinic in 2020. In the evaluation performed by us, no lymphadenopathy was observed in the systemic examination of the patient, who was found to have an ulceronodular mass measuring 8x6 cm in the posterior left arm, and axillary USG showed benign-looking lymph nodes with preserved fatty hilus, the largest of which was 7x18 mm in size in the left axilla. Thereupon, wide excision + grafting was performed including the triceps muscle fascia. The pathology of the excision material was CK7 positive eccrine porocarcinoma with basoloid differentiation and the closest lateral surgical margin was 1.5 cm and the base surgical margin was 1.7 cm. No ulceration was observed. The patient received 10 cycles of radiotherapy with the decision of the tumor council of Cerrahpaşa Medical Faculty and was followed up with PET/CT at 3-month intervals. The patient has been followed up for 3 years postoperatively without recurrence.

Discussion

Eccrine porocarcinoma cases are very rare. Although it is mostly seen in the lower extremities, it is also seen in the face, scalp and less frequently in the upper extremities and trunk. In terms of localization, trunk involvement close to the axillary region is the least common form. The majority of cases present as de nova. They may show basoloid or squamous differentiation and are frequently confused with SCC and BCC.

Treatment planning for eccrine porocarcinoma is challenging. Because of its rarity, it is not possible to plan prospective studies comparing surgical techniques and/or investigating the value of adjunctive therapies. The few published series include a very small number of cases. The main treatment is wide local excision and cure can be achieved in 70-80% of cases.

It should be kept in mind that if the diagnosis of porocarcinoma cases with high mortality and systemic lymph node dissemination is misdiagnosed, the necessary appropriate treatment cannot be performed and systemic dissemination may be seen more frequently in the long term. For this purpose, in this study, we aimed to increase the disease-free survival rate by determining the appropriate treatment modalities and it should be kept in mind that porocarcinoma cases can be seen more frequently according to the literature and should be examined more carefully when making the diagnosis. In addition, the fact that two of the 4 patients we diagnosed were detected in the trunk region, which is the most rare location according to the literature, shows that this tumor



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

may be different according to the regions of occurrence compared to the literature and porocarcinoma should always be kept in mind.

The fact that all of the cases we presented were referred to our center with different initial pathological diagnoses should also be kept in mind and awareness of porocarcinoma should be raised by pathologists and clinicians during histopathological evaluation.

Conclusion

In conclusion, eccrine porocarcinoma is a rare tumor and therefore there are not many series evaluating treatment modalities and outcomes. However, the results of the few reported series indicate that patients with eccrine porocarcinoma are particularly at risk of local and regional recurrence. We presented the clinical and pathologic features of four cases of eccrine porocarcinoma, which were referred to our clinic from external centers with different initial diagnoses and which we followed up disease-free for at least one year after extensive resection. Both clinicians and pathologists should be more careful to determine the correct diagnosis and treatment algorithm for this rare but mortal tumor.

Keywords: Eccrine porocarcinoma, malignant tumor, pathological diagnosis, rare disease, skin appendage tumor

Case 1



A) Pre-op image of the mass in the posterior left arm B) Per-op view of the defect after grafting

Photographs of the patient in Case 1



OP-101

Differing Levels of Protease Enzymes Between Venous and Diabetic Ulcers

Ali Barutcu¹, Mehmet Gökçelik², Mustafa Yılmaz³, Sevgi Yıldırım², Osman Enver Aydın²

¹Başkent University, Zübeyde Hanım Hospital, Plastic Reconstructive and Aesthetic Surgery Dept., Wound Care Center, İzmir / Türkiye

²Aydın Adnan Menderes University, Plastic Reconstructive and Aesthetic Surgery Dept., Aydın / Türkiye

³Aydın Adnan Menderes University, Biochemistry Dept., Aydın / Türkiye

Venous and non-venous chronic ulcers are an underestimated public health problem that can cause significant morbidity. They are expensive to treat and complicate the patient's life. Healing complications and high recurrence make the process quite painful. The medical treatment of these chronic wounds remains a challenge for clinicians. Understanding the pathophysiology of these chronic wounds may improve their treatment. For these reasons, the mediators and the pathology of this problem play a big role in studies and the treatment could be revolutionary.

Cellular responses initiate the process of wound healing. Previous studies have showed that chronic ulcers' pathogenesis is related with high numbers of activated neutrophils secreting proteases in the wound bed. Once leukocytes enter the interstitium a series of cellular events occur. These events may activate Matrix metalloproteinases (MMPs) and other proteases. ECM is dynamically maintained by the action of MMPs (which degrade ECM proteins) and their inhibitors (tissue inhibitors of MMPs, TIMPs). Wound healing require a balance between collagenous and non-collagenous extracellular matrix components and their remodelling by matrix metalloproteinases (MMPs) and the tissue inhibitors of metalloproteinases (TIMPs). They seem to play a huge role in wound healing.

Matrix Metalloproteinases (MMPs) are zinc endopeptidases capable of degrading all components of the extracellular matrix (ECM). MMPs are a 24-member family of zinc-binding endopeptidases. They are key players in every phase of the healing process. Their main function is degradation, by removal of damaged extracellular matrix (ECM) during the inflammatory phase, breakdown of the capillary basement membrane for angiogenesis and cell migration during the proliferation phase, and contraction and remodeling of tissue in the remodeling phase. On the other hand, high concentrations can cause excessive degradation and impair wound healing. Abnormal wound healing, such as in chronic wounds, often results from a disruption of the balance between extracellular matrix (ECM) synthesis and degradation. The MMP family comprises enzymes based on their substrate specificity, collagenases (MMP-1, MMP-8, MMP-13, and MMP-18), gelatinases (MMP-2 and MMP-9), stromelysins (MMP-3, MMP-10, and MMP-11), membrane type (MT) metalloproteinases (MMP-14, MMP-15, MMP-16, MMP-17, MMP-24, and MMP-25), matrilysins (MMP-7 and MMP-26), and others (MMP-12, MMP-19, MMP-20, MMP-21, MMP-23, MMP-27, and MMP-28). Tissue inhibitor of metalloproteinase (TIMP), of which there are four different subtypes (TIMP-1, TIMP-2, TIMP-3, and TIMP-4), inhibits the action of MMPs and regulates their action. TIMPs attach to alternate or active sites of MMPs and are capable of inhibiting all MMPs, although their affinity levels may differ.

In this report, we aim to clarify how much these protease levels differ in CVU and non-infective diabetic wounds. We enrolled 22 patients (11 of them are suffering CVU and the other 11 are suffering non-infective diabetic wound). MMP2, MMP9 MPO and cat-b were measured in wound fluids by the help of the vacuum assisted closure and enzyme-linked immunosorbent assay (ELISA). The comparison of enzyme levels held by the help of Mann-Whitney U test. All data was transferred to PASW-18 software. Descriptive statistics was held. The mean and the standart deviation of each variable were calculated. The normality test was held using the Shapiro-Wilk test. The normality assumption was not fulfilled. Thus Mann-Whitney U test was held for comparison of enzyme levels. Statistical significance was assumed when $p < 0.05$. Our findings clarify that some of the proteases that we are searching are overexpressed in CVU. There was a significant difference in MPO, CatB, and MMP2 levels between the venous ulcer and the control groups. The venous ulcer group MPO (Mean rank= 16.55) CatB (Mean rank= 15.00) MMP2 (Mean rank= 15.00) and the control group MPO (Mean rank = 6.45) CatB (Mean rank= 8.00) MMP2 (Mean rank= 8.00) differed significantly. On the other hand, there was no significant difference in MMP9 levels between the venous ulcer (Mean rank=10.91) and the control groups (Mean rank=12.09).

In a nutshell, we suggest that these difference in protease profiles between the venous and diabetic ulcers may indicate the difference in the course of both ulcers. What is more, these differences may also indicate potential differences in treatment strategies if different chronic wounds may require different strategies. The mechanisms of wound healing can develop innovative treatment strategies, such as applying growth factors or proteinase inhibitors to the non-healing venous ulceration. The treatment of this disease, which has high morbidity and mortality on patients, will be revolutionary.

Keywords: Venous Ulcer, Diabetic Ulcer, Matrix Metalloproteases, CatB, MPO



OP-102

Regenerative Perspective on the Effects of Royal Jelly on Anti-aging, Mitochondrial and Osteogenic Differentiation Capacity in Umbilical Cord-derived Mesenchymal Stem Cell

Gülsemin Cicek, Fatma Öz Bağcı

Necmettin Erbakan University, Faculty of Medicine, Department of Histology and Embryology, Konya / Türkiye

Introduction and Objectives

Mesenchymal stem cells (MSC) therapy have achieved promising results in clinical trials of regenerative medicine aimed at improving osteoarthritis, graft-versus-host disease, myocardial infarction, pulmonary diseases, inflammatory bowel disease, spinal cord injury, and multiple sclerosis (1).

MSCs have extensive clinical application in regeneration, functional reconstruction and cellular therapies. Royal jelly (RJ) is a nutritive substance produced by worker bees and contains a significant amount of protein valuable for cell growth and proliferation. RJ is widely used in traditional medicine today and thanks to the specific components in its content; it has been reported that it has antioxidant, antiproliferative, antimicrobial, neuroprotective, anti-inflammatory, immunomodulatory and anti-aging properties(2). Studies are needed to preserve or improve the characteristics of MSCs, which are very important in cell therapies, such as differentiation and senescence in culture. RJ has effects on longevity, fertility and regeneration in mammals. However, how RJ or its components exert their myriad effects is not fully understood. Royal jelly, which is known as a nutritional supplement and contains elements such as proteins that are important for cell growth, has the potential to be used as an adjunct to FBS (3). In this study; We aimed to evaluate the effect of RJ in terms of key features such as proliferation, differentiation and aging, which have broad implications on MSC fate.

Materials and Methods

The study was approved by the Local Ethics Review Committee (protocol number: 2022/3900-10733) in accordance with the World Medical Association Declaration of Helsinki Ethical Principles for Medical Research Involving Human Subjects and Sample. Human umbilical cord matrix Wharton's jelly mesenchymal stem cells (WJ-MSCs) were grown in culture medium supplemented with RJ. While determining the dose of royal jelly to be added to the culture fluid, the amounts in which no toxic effects were observed for cells and positive effects were seen in previous studies were used (4,5). Royal jelly was obtained from local producers in Türkiye.

Control group Minimum Essential Medium (MEM) and 10% Fetal Bovine Serum (FBS); RJ groups were formed using MEM, 10% FBS and 0.075 mg/ml and 0.150 mg/ml RJ. In our study; we evaluated the effect of RJ added to FBS in WJ-MSCs culture with MTT, proliferating cell nuclear antigen, β -galactosidase activity, Mitotracker Green staining, differentiation test to adipogenic, osteogenic and chondrogenic cell lines. Statistical analysis was performed using IBM SPSS Statistics version 29.0.0.0. One-way ANOVA followed by Bonferroni multiple comparison test was used to determine the significant difference between the groups. A p value below 0.05 was considered statistically significant.

Results

Cells with a fusiform-like phenotype began to appear 24 hours after seeding. Surface markers of MSC CD90, CD44, CD105 and CD19 were positive in 91.34%, 93.68%, 96.33% and 1.56%, respectively. PCNA amounts in the cell culture fluids of the groups were analyzed by Elisa test. There was no significant difference between the groups ($p=0.598$). β -galactosidase staining was the highest in the control group out of all three groups cultured for senescence stimulation. β -galactosidase activity in the group with 0.075 mg/ml RJ was very low compared to the control group. It was still lower in the 0.150 mg/ml RJ added group, but showed more β -galactosidase staining activity compared to Group 2 (Figure 1). In osteogenic differentiation staining, a significant difference was found between the groups according to the staining intensities obtained with the Image J program ($p=0.008$). Between the 1st and 2nd group, more intense osteogenic staining was obtained in the 2nd group ($p=0.008$) (Figure 2). It was observed that the amount of mitochondria increased, senescence decreased and osteogenic differentiation increased after differentiation induction with the addition of RJ to MSC culture.



12th

BAPRAS CONGRESS
Selçuklu Convention Center Konya, TÜRKİYE



2023
13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org

Discussion and Conclusion

Cellular senescence occurs following failure of cell proliferation or exposure to various cellular stresses. The most widely used indicator to show senescence in cells is β -galactosidase activity (6). In our study, it was shown that the amount of aging in the groups to which royal jelly was added was quite low compared to the control group.

In general, the results of this study; WJ-MSCs are clues to the enhancement of mitochondria amount and important cellular activities such as anti-senescence and osteogenic differentiation capacity, and with increasing evidence from further studies, RJ supplementation may be beneficial for the use of MSCs in bone engineering regenerative medicine or cell therapy.

References

- 1- Mehta KJ, 2022. Iron oxide nanoparticles in mesenchymal stem cell detection and therapy. *Stem Cell Rev Rep*, 18(7):2234-61. [https://doi.org/ 10.1007/s12015-022-10343-x](https://doi.org/10.1007/s12015-022-10343-x)
- 2- Han Y, Li X, Zhang Y, et al., 2019. Mesenchymal stem cells for regenerative medicine. *Cells*, 8(8): 886. [https://doi.org/ 10.3390/cells8080886](https://doi.org/10.3390/cells8080886)
- 3- Jiang CM, Liu X, Li CX, et al., 2018. Anti-senescence effect and molecular mechanism of the major royal jelly proteins on human embryonic lung fibroblast (HFL-I) cell line. *J Zhejiang Univ Sci B*, 19(12):960-72. *J Zhejiang Univ Sci B*, 19(12): 960-972. [https://doi.org/ 10.1631/jzus.B1800257](https://doi.org/10.1631/jzus.B1800257)
- 4- Musa M, Nasir NF, Thirumulu KP, 2014. Evaluation of royal jelly as an alternative to fetal bovine serum in cell culture using cell proliferation assays and live cell imaging. *Afr J Tradit Complement Altern Med*, 11(1):148-55. [https://doi.org/ 10.4314/ajtcam.v11i1.23](https://doi.org/10.4314/ajtcam.v11i1.23)
- 5- Cheraghi O, Abdollahpourasl M, Rezabakhsh A, et al., 2018. Distinct effects of royal jelly on human endothelial cells under high glucose condition. *Iran J Pharm Res*, 17(4):1361-70. *Iran J Pharm Res*, 17(4): 1361-1370.
- 6- Kunugi H, Mohammed Ali A, 2019. Royal jelly and its components promote healthy aging and longevity: From animal models to humans. *Int J Mol Sci*, 20(19):4662. [https://doi.org/ 10.3390/ijms20194662](https://doi.org/10.3390/ijms20194662)

Key words: Royal Jelly, mesenchymal stem cells, mitochondrial activity, osteogenic differentiation.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

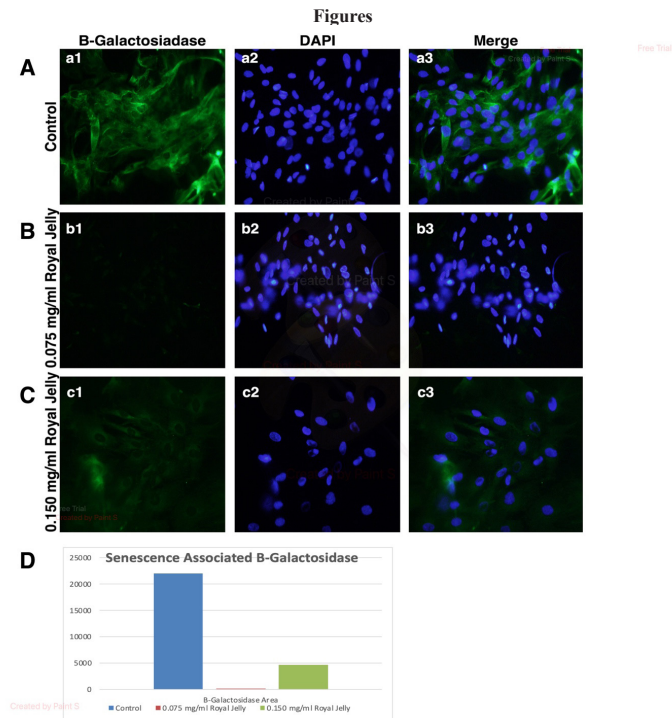


Figure 1. WJ-MSC aging assessment by confocal microscopy (20X) (A, B, C). Age-associated- β -galactosidase (SA- β -gal) staining green in WJ-MSCs (a1, b1, c1). WJ-MSCs cell nuclei were stained blue with DAPI (a2, c2, b2). Combine for (a3, b3, c3) with DAPI-stained nuclei. Graph of measurement of SA- β -gal staining intensity of experimental groups with Image J program (D).

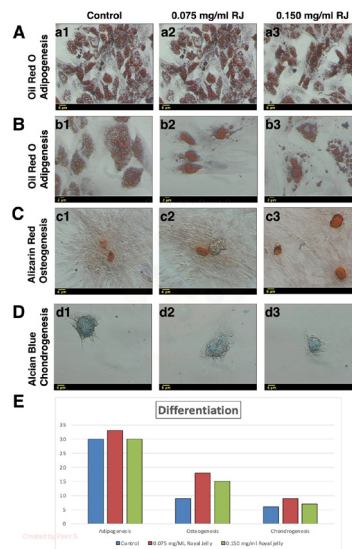


Figure 2. Adipogenic, osteogenic, and chondrogenic differentiation of WJ-MSCs were subjected to 21-day differentiation conditions (A, B, C, D). Oil Red O staining 20X (a1, a2, a3) and 40X (b1, b2, b3), Alizarin red staining (c1, c2, c3) and Alcian blue staining (d1, d2, d3) were used for adipogenic, osteogenic evaluation, and chondrogenic differentiation, respectively. Royal Jelly (RJ) groups (c2, c3) showed stronger image for Alizarin red than control (c1) staining; also, areas with intense alizarin red staining per area were higher in the 0.075 mg/ml (c2) and 0.150 mg/ml RJ (c3) groups. Lipid droplets tended to be larger in Oil red O staining in RJ groups (b2, b3) for control (b1) at 40X magnification. Scale bar is 6 μ m for images A, C, D and 2 μ m for image B. Measurement of adipogenic, osteogenic and chondrogenic differentiation staining intensity, comparison of mean values of experimental groups with Image J program. (E)



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

POSTER PRESENTATIONS



PP-001

Velopharyngeal Insufficiency Following Botox Injection for Persistent Bruxism

Nuh Evini¹, Melih Kerem Sifil², Turan Mehdizade³, Ebru Diana Özcan⁴, Ethem Güneren³

¹Department of Plastic, Reconstructive and Aesthetic Surgery, Bezmialem Vakıf University, İstanbul / Türkiye

²İstanbul Provincial Health Directorate, İstanbul / Türkiye

³Private Practice, İstanbul / Türkiye

⁴Carol Davila University of Medicine, Department of Plastic and Reconstructive Surgery, Bucharest / Romania

Introduction

Botulinum toxin type-A (BTX-A) injection is a widely performed procedure in cosmetic surgery and is also utilized in the treatment of spasmodic diseases including temporomandibular joint (TMJ) disorders, bruxism, mandibular spasm, and oromandibular dystonia. However, improper administration techniques, dilution and dosage mistakes might result in unfavorable outcomes due to functional impairment of the affected muscle, which can be attributed to the close anatomic localization of head and neck¹. In rare cases, velopharyngeal insufficiency (VPI) can occur as a complication of BTX-A injection to the masticatory muscles for bruxism². This study presents a case of VPI following BTX-A injection for the treatment of bruxism.

Case Presentation and Methods

A 36-year-old female was referred to our clinic by the dentistry department due to persistent bruxism. The patient reported difficulties in opening and closing her mouth, tooth sensitivity, extensive discomfort and pain around TMJ, clicking sounds, and TMJ locking. Despite prior conservative treatments, such as analgesics (NSAIDs), muscle relaxants, and occlusal splints, the patient did not experience long-term improvement.

Upon extra-oral examination, pain and tenderness were observed during mouth opening and closure, along with hypertrophy of the bilateral masseter muscles (Figure 1). The maximal mouth opening was measured at 25 mm, and a click was noted in both TMJs. Intra-oral examination revealed a cracked and flattened tooth. Magnetic resonance imaging (MRI) indicated enlargement of the bilateral masseter, medial and lateral pterygoid muscles (MPM and LPM; Figure 2). However, no signs of TMJ dysfunction, such as joint effusion or structural abnormalities of the disc or retrodiscal tissue were observed.

BTX-A injection was recommended as a symptomatic treatment. The patient's pain level and satisfaction with jaw function were assessed using the Visual Analogue Scale (VAS) and 5-point Likert satisfaction scales, respectively. The VAS scale ranged from 0 (no pain) to 10 (worst pain and total incapacity), while the Likert scale ranged from 1 (unsatisfied) to 5 (excellent satisfied). These evaluations were performed before the therapy and one month after.

Botox Injection and Follow-Up

A 100 IU vial of BTX-A powder was mixed with 2 ml of 0.9% saline, resulting in a concentration of 5 IU per 0.1 cc. 20 IU (0.4 ml) BTX-A was injected percutaneously into each of the masseter muscles. 10 IU (0.2 ml) BTX-A was injected intraorally into each of MPMs and LPMs.

Three week after the initial injection, the maximal mouth opening was measured at 40 mm and the desired level of muscle relaxation was achieved. However, at the six-month follow-up, the patient's complaints relapsed, leading to the decision of administering another round of BTX-A injection at the same dosage. Unfortunately, four days after the second injection, the patient experienced nasal fluid regurgitation and voice distortion with hypernasality (Video 1).



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Examinations of The Patient and Analysis of Voice

The physical and nasal endoscopic examinations revealed insufficient soft palate movement in closing the nasopharynx. The patient was diagnosed with velopharyngeal insufficiency (VPI). Qualitative and quantitative evaluation of the pathological voice was performed using the Voice Handicap Index (VHI) questionnaire and PRAAT software (version 6.0.43). The evaluations were conducted one week and six months after injection. VHI assessed voice pathology functionally, physically, and emotionally, while PRAAT analyzed parameters like fundamental frequency (F0), cepstral peak prominence (CPP), local jitter, and local shimmer to evaluate vowel nasality³⁻⁷. The data from VHI and PRAAT acoustic analysis were compared using the Student t-test at one week and six months after BTX-A injections. Statistical significance was set at $p < 0.05$.

Result of Voice Analysis

The VAS pain scores and Likert's satisfaction scores significantly improved after the first injection of BTX-A. The VAS pain score decreased from fairly severe pain (5) to mild pain (1), and Likert's satisfaction score increased from unsatisfied (1) to good satisfied (4) after one month. However, at six months, the patient experienced moderate pain (4) and unsatisfied jaw condition (1) due to a relapse of bruxism symptoms.

After the second BTX-A injection, the VAS pain score improved from moderate pain (4) to no pain (0). However, the patient remained unsatisfied (1) due to velopharyngeal insufficiency (VPI) one month after the injection.

One week after the second injection, the mean scores for the functional, physical, and emotional subscales of VHI were 2.2 ± 1.6 , 1.9 ± 1.3 , and 2.8 ± 1.3 , respectively. The voice problem had a negative impact on the patient's communication and caused social and emotional withdrawal. However, at the six-month follow-up, these scores improved to 0, indicating no voice, social, or emotional problems. These improvements were statistically significant ($p_{\text{functional}}=0.000217$, $p_{\text{physical}}=0.000095$, $p_{\text{emotional}}<0.00001$; Table 1).

Regarding acoustic analysis, at one week, the mean values for F0, CPP, Jitter, and Shimmer were 208.5 ± 24.8 Hz, 5.18 ± 1 dB, $1.86 \pm 1.32\%$, and 12.7 ± 8.7 , respectively, indicating hypernasality in the patient's voice. At six months, the mean values were 156.3 ± 13.8 Hz, 7.5 ± 1.2 dB, $0.44 \pm 0.26\%$, and $4.24 \pm 3.26\%$, respectively, indicating a return to normal voice. These differences were statistically significant ($p_{F0}=0.0333$, $p_{CPP}=0.00531$, $p_{Jitter}=0.04914$, $p_{Shimmer}=0.04232$; Table 2).

After six months, the patient's speech completely returned to normal (Video 2). However, the TMJ disorder symptoms relapsed six months after the second injection, requiring further medical treatment and ultrasound-guided BTX-A injections every six months.

Discussion

Bruxism is a condition characterized by excessive teeth clenching or grinding and is often associated with TMJ disorders. The use of BTX-A in the treatment of bruxism and TMJ disorders has been found to be efficient and has gained importance in recent years.

The optimal dose of BTX-A for symptomatic therapy and control of muscular activity is controversial. Diluting too much BTX-A can result in reduced effectiveness and increased spread of the toxin to nearby structures and causes complications. Drooping eyelids, double vision, muscle weakness, and mimic changes are potential complications of BTX-A injection. Thus, proper injection technique and dilution of BTX-a is important to avoid complications.

Injection of BTX-A into LPMs can be done through both intraoral and extraoral routes, with the extraoral preauricular percutaneous technique being the most common for Caucasian individuals⁸. However, due to the numerous advantages, such as reduced patient discomfort and the risk of damaging the maxillary artery, the intraoral approach should be preferred. But it can be challenging in patients with a narrow space between the coronoid process and the maxilla⁹. Transient dysphagia is the most frequent complication following BTX administration to LPM. Depending on the muscles involved, other uncommon short-term problems might arise. These include symptoms of VPI, such as nasal insufficiency and hypernasality, voice distortion and dysarthria, and nasal fluid regurgitation.



In our study, temporary VFI was observed after BTX-A injection to LPMs for treatment of bruxism. VHI and Praat software were used for subjective and objective measures of hypernasality and VFI by patient and observer. VFI after BTX-A injection caused serious functionally, physically and emotionally problems according to VHI assessment in the early period and greatly decreases patients satisfaction. Lower value of CPP, high values of F0, jitter, and shimmer at 1 week after BTX-A injection are related to abnormal voice, such as VFI3-7. All the symptoms of VFI returned to normal once all the effects of the BTX-A last up. The disappearance of VFI symptoms at 6 months after BTX-A injection and before the recurrence of TMJ disorder findings at 6 months after BTX-A injection indicates that the VFI symptoms are caused by a limited amount of BTX-A infiltrating the levator and tensor veli palatini muscles.

The topographic location of the LPM was assumed to be the cause of VPI: it was located at the medial boundary of the infratemporal fossa, particularly close to levator and tensor veli palatini muscles.

When administering BTX injections for TMJ disorders, it is crucial to take precautionary measures to avoid complications. To prevent complications related to incorrect needle placement, ultrasound guidance or electromyography may be utilized. Ultrasound offers the benefit of visualizing the anatomical relationships of muscles and fascia, and higher degrees of echo intensity can indicate a higher spastic muscle that may require a higher dosage of BTX-A. When targeting LPMs, an extraoral preauricular in-plane approach with ultrasound guidance can minimize the risk of complications¹. Lower injection volume and dose are essential to reduce the risk of hemorrhage and complications due to proximity to vital structures when injecting BTX into the LP muscle¹⁰. Patients must receive proper medication and follow instructions, such as chewing bilaterally, eating soft foods, and using warm packs to alleviate symptoms.

Conclusion

VPI is a rare complication that can occur following BTX-A injection into LPMs for bruxism treatment. To prevent the spread of BTX-A to non-target muscles, it is important to use low dilution volumes and employ correct injection techniques. Ultrasound-guided and EMG-assisted BTX-A injections can be utilized to ensure accurate injection placement. In cases where VPI develops after injection, it is crucial to provide reassurance to the patient that this condition is temporary. The patient should be followed up for a period of six months, with a focus on maintaining close communication and gently encouraging them to take their time during each control visit. This follow-up procedure helps monitor the progress of VPI and ensures appropriate management.

References

- 1- Srivastava, Sanjeev; Kharbanda, Smriti1.; Pal, U. S.2; Shah, Vinit3. Applications of botulinum toxin in dentistry: A comprehensive review. National Journal of Maxillofacial Surgery 6(2):p 152-159, Jul-Dec 2015. | DOI: 10.4103/0975-5950.183860.
- 2- Kanbour A, Hurrell MJL, Ricciardo P. Velopharyngeal dysfunction following botulinum toxin type A injection to the lateral pterygoid muscles for recurrent jaw dislocation. BMJ Case Rep. 2021 Apr 22;14(4):e238766. doi: 10.1136/bcr-2020-238766. PMID: 33888473; PMCID: PMC8070878.
- 3- Johnson, Alex & Jacobson, Barbara & Grywalski, Cynthia & Silbergleit, Alice & Jacobson, Gary & Benninger, Michael. (1997). The Voice Handicap Index (VHI): Development and Validation. American Journal of Speech-Language Pathology. 6. 66-70.
- 4- Yang et al. Cepstral Analysis of Voice in Children With Velopharyngeal Insufficiency After Cleft Palate Surgery. J Voice. 2014 Nov;28(6):789-92
- 5- Zajac DJ, Linville RN. Voice perturbations of children with perceived nasality and hoarseness. Cleft Palate J. 1989;26:226-23
- 6- Villafuerte-Gonzalez et al. Acoustic analysis of voice in children with cleft palate and velopharyngeal insufficiency. Int J Pediatr Otorhinolaryngol. 2015 Jul;79(7):1073-6
- 7- Staffan Morén ET AL. Voice Quality in Adults Treated for Unilateral Cleft Lip and Palate: Long-Term Follow-Up After One- or Two-Stage Palate Repair. Cleft Palate Craniofac J. 2018 Sep;55(8):1103-1114.).
- 8- Yoshida K. Botulinum Neurotoxin Injection for the Treatment of Recurrent Temporomandibular Joint Dislocation with and without Neurogenic Muscular Hyperactivity. Toxins (Basel). 2018 Apr 25;10(5):174.
- 9- Yoshida, K. Computer-aided design/computer-assisted manufacture-derived needle guide for injection of botulinum toxin into the lateral pterygoid muscle in patients with oromandibular dystonia. J. Oral Facial Pain Headache 2018, in press.
- 10- Rezazadeh F, Esnaashari N, Azad A, Emad S. The effects of botulinum toxin A injection on the lateral pterygoid muscle in patients with a painful temporomandibular joint click: a randomized clinical trial study. BMC Oral Health. 2022 May 31;22(1):217. doi: 10.1186/s12903-022-02220-3. PMID: 35641993; PMCID: PMC9158275.

Keywords: Botox, BTX-A, Persistent Bruxism, TMJ Disorders, Velopharyngeal Insufficiency



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

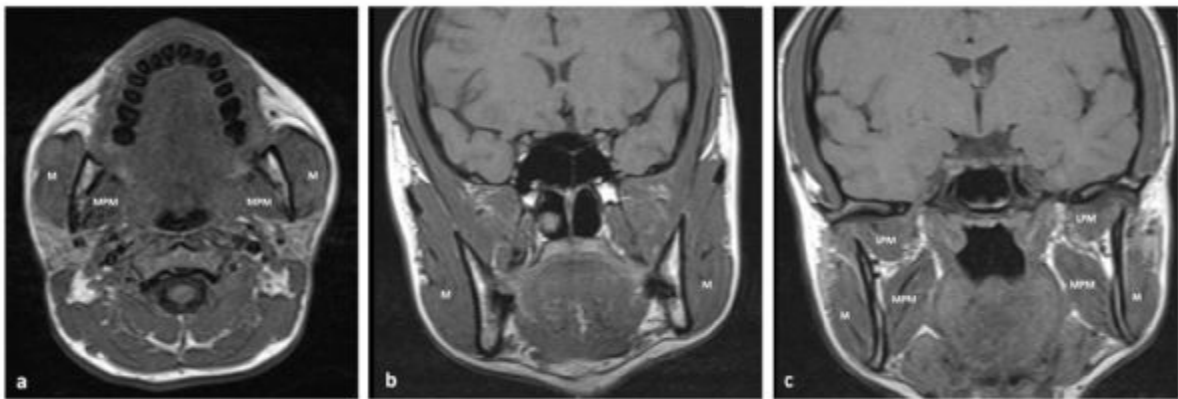
www.balkanplasticsurgery.org

Figure 1



a, b, c. The bilateral hypertrophy of the masseter muscles.

Figure 2



Magnetic resonance imaging indicated enlargement of the bilateral masseter (M), medial pterygoid muscles (MPM) and lateral pterygoid muscles (LPM).



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

PP-002

Catastrophics Status of Breast Filled with Polyacrylamide Hydrojel During Breastfeeding Period

Yasin Canbaz, Ömer Büyükkaya, Onur Zengin, Özcan Boztepe, Percin Karakol

Plastic, Reconstructive and Aesthetic Surgery, Health Science University, Basaksehir Cam ve Sakura City Hospital, İstanbul / Türkiye

Introduction and Aim

Polyacrylamide hydrogel (PAAC) is a filling form that has become popular in recent years and is widely used in cases where high volume correction is required. Different body parts such as breast, butt, penis, vulva, face etc. have come to the agenda as an alternative to fat injection in augmentation. Its use has decreased over the years due to reasons such as increasing complications after years of use and difficult treatment.. Despite this, complications included in previous cases come across to physicians even after many years.

Material and Methods

A 30-year-old teacher female patient received 40 months ago polyacrylamide hydrogel injection for augmentation in both breasts, and had no complaints about 3 years, the patient became pregnant 8 months ago. In the first month after birth, she applied to breast surgeon due to excessive swelling, temperature increase and high fever in her single breast. In the breast ultrasound evaluation, it was determined that foreign bodies were obstructing the milk ducts, and a tube was inserted for drainage treatment. The drain of the patient, who first came in gel form and then milk, was removed from the tube. The patient, whose proper antibiotherapy continued for about 3 weeks, began to drain outside by forming a fistula line in the breast of the patient who had the same complaints as the milk filling again in 1 week of observation. The patient, who was followed up with local dressing recommendations, had intermittent fever and was recommended to breastfeed the postpartum patient with high prolactin levels by changing both breasts. There was no fever in the baby of the patient who had milk mixed with pus from the fistula line. CRP, leukocyte assays were normal. There was no developmental delay in the baby.

Result

While the samples taken from the fistula field did not reproduce in culture, the milk delivery of the patient whose biopsies came in favor of the granulomatous reaction decreased, and the single breast feeding gave up early due to blockage. The calcified areas causing the foreign body reaction by expanding the resulting defect area were debrided and the primary closed. In late breast ultrasound controls, intraglandular filling residues were observed as calcified lesions in different quadrants of the breast.

Discussion and Conclusion

In addition to localized tissue reactions, for polyacrylamide hydrogel applications that have irreversible and difficult to manage complications such as migrating to remote areas with heavy granulomatous lymphadenitis and migration, creating breast cancer, performing injections under appropriate sterile conditions, informing the patient sufficiently, recommending different treatment modalities for existing complaints and it is important to get consent. It is not possible to completely dissolve body fillers such as polyacrylamide hydrogel. Up to 30% of them can be detected in body scans even during 10-year follow-ups. Continuous applications cause the carcinogenic effect to continue.

Keywords: polyacrylamide hydrogel, breast, augmentation, milk ducts, fistula



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Figure 1





12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE

2023

13 September
Pre Congress Course
14 - 16 September
Congress



PP-006

A Complication After Radiofrequency Ablation: Skin Necrosis

Melih Kerem Sifil¹, Nuh Evin², Can Koç²

¹Istanbul Provincial Health Directorate, İstanbul / Türkiye

²Bezmialem Vakıf University, Department of Plastic and Reconstructive Surgery, İstanbul / Türkiye

Introduction

Radiofrequency ablation (RFA) is a minimally invasive procedure used in the curative treatment of benign bone masses and the symptomatic management of painful metastatic bone tumors [1]. Although RFA is considered a safe and effective treatment method when used in conjunction with radiological guide methods such as ultrasound and computed tomography (CT), practitioners rarely encounter serious complications [2,3]. We present a case of skin necrosis following RFA treatment in this study.

Case Report

An 18-year-old female patient was admitted to our clinic with a discharged necrotic wound, pain and functional limitation on right forearm. CT-guided RFA treatment was applied to the lesion in the same region compatible with osteoid osteoma two weeks ago. On the second day following treatment, pain in the application area began, followed by color change and discharge on the third day. Radiation Oncology referred us the patient, who was followed up with dressing for two weeks.

On physical examination, a necrotic wound approximately 3x3 cm in size, with discharge and foul-smelling, was discovered on the middle third medial surface of the right forearm, where the ulna was exposed (Figure 1). The motor and sensory nerves, major arteries, and muscle-tendon examinations of the hand and wrist were all normal. However, she had functional limitation of right upper extremity according to the Quick-Disabilities of the Arm, Shoulder, and Hand Score (Quick-DASH) questionnaire with 63.7 score. There were two palpable lymph nodes in the right axilla. The patient's complete blood count, biochemistry, and serology tests revealed neutrophilic leukocytosis, increased levels of erythrocyte sedimentation rate (ESR), and CRP (Table 1).

The patient provided written and verbal informed consent prior to surgery. We performed debridement of necrotic tissues and a deep tissue culture under regional block anesthesia and a tourniquet. For two weeks, we followed the patient with daily dressings and oral antibiotic (875 mg amoxicillin + 125 mg clavulanic acid 3x1, PO) due to culture growth of methicillin-sensitive *Staphylococcus aureus* at the end of the second week. The wound edges had begun to granulate and contract, and the infection parameters had returned to normal. The patient was underwent reconstruction surgery. The ulnar bone was closed using mobilization and suturing fascia of the flexor muscles, and the skin defect was primarily sutured by releasing and approximate the wound edges. We discharged the patient with oral analgesics (paracetamol 500mg 3x1 PO). On the tenth day, we removed the sutures and began anti-scar ointment for 3 months. The patient was followed for 12 months. The surgical scar healed uneventfully (Figure 1). There was no functional limitation in the Quick-DASH with 0 score. The patient was extremely satisfied with the results.

Discussion

The advent of advanced radiological imaging techniques, particularly CT, has significantly enhanced the precision in localizing neoplasms, leading to the widespread adoption of RFA as a primary management approach for bone tumors. RFA is increasingly favored for well-defined tumors due to its safety, efficacy, patient tolerance, and rapid recovery post-procedure [4].

Various studies consistently show that complications associated with RFA treatment for primary bone tumors are relatively uncommon and primarily result from technical errors during the procedure. These complications may include skin burns, fractures, osteomyelitis, vasomotor instability, tendinitis, and muscular hematomas. Among these, skin necrosis stands out as the most severe complication, necessitating specific treatment measures such as debridement, deep tissue culture, wound care, and reconstructive interventions [4-7].



Researchers have reported complications related to RFA for osteoid osteoma. For instance, Earhart et al. documented complications in two out of 21 patients: a subtrochanteric femur fracture and muscle/skin burns. However, the specific reasons for these complications were not provided in the study, warranting further investigation [8]. Hoffmann et al. described potential complications during the RFA procedure for osteoid osteoma, where a broken surgical drill unexpectedly aided in complete resection, and a soft tissue infection occurred along the needle path [9].

Huffman et al. discussed complications related to skin burns caused by higher current and more powerful RF ablation systems. A case report details a third-degree skin burn in a patient with metastatic colorectal cancer, emphasizing the need for further research to minimize such complications [10].

To ensure safe and effective RFA application, adherence to established guidelines and maintaining proficiency in radiological guidance are crucial for practitioners. Vigilant monitoring of patients during and after the procedure is essential. Continuous research and analysis of reported complications, such as skin necrosis, are pivotal in improving the overall safety and success rates of RFA in managing bone tumors.

Understanding and mitigating risk factors associated with complications are paramount in preserving RFA as a valuable tool for treating benign bone masses and painful metastatic bone tumors. Further investigations into the causes and prevention of complications will enhance patient outcomes and expand the utility of RFA in bone tumor management.

Our case adds valuable contributions to the medical literature by raising awareness about skin necrosis as a rare but serious complication following CT-guided RFA for bone tumor management. It emphasizes the significance of meticulous patient monitoring, prompt and appropriate management, and adherence to proper procedural techniques to achieve favorable patient outcomes. This study serves as a crucial reminder to healthcare providers about the necessity for vigilance in identifying and addressing potential complications, fostering a culture of patient safety and continuous improvement in RFA practices for bone tumor management. Through the dissemination of our findings, we aim to encourage a proactive approach to mitigate complications and ensure the best possible care for patients undergoing RFA for bone tumors.

References

- 1- F. Deschamps, G. Farouil, T. de Baere, Percutaneous ablation of bone tumors, Diagnostic and Interventional Imaging, Volume 95, Issues 7–8, 2014, Pages 659-663, ISSN 2211-5684
- 2- Aygün, Hayati & Yaray, Osman. (2017). Radyofrekansın kas iskelet sistemi hastalıklarında kullanımı. TOTBID Dergisi. 16. 10.14292/totbid.dergisi.2017.32.
- 3- Rhim, Hyunchul & Dodd, Gerald & Chintapalli, Kedar & Wood, Bradford & Dupuy, Damian & Hvizda, Julia & Sewell, Patrick & Goldberg, S.. (2004). Radiofrequency Thermal Ablation of Abdominal Tumors: Lessons Learned from Complications. Radiographics: a review publication of the Radiological Society of North America, Inc. 24. 41-52. 10.1148/rg.241025144.
- 4- Altınbaş, Namık Kemal, Yağcı, Cemil, Başarır, Kerem, Our Experience in Osteoid Osteoma Patients Treated with Computed Tomography Guided Percutaneous Radiofrequency Ablation, Journal Article, 2016, Acta Oncol Tur., 177-184, VI - 49
- 5- Maugeri R, Graziano F, Basile L, Guli C, Giugno A, Giammalva GR, Visocchi M, Iacopino DG. Reconstruction of Vertebral Body After Radiofrequency Ablation and Augmentation in Dorsolumbar Metastatic Vertebral Fracture: Analysis of Clinical and Radiological Outcome in a Clinical Series of 18 Patients. Acta Neurochir Suppl 2017;124:81–6.
- 6- Volkmer, Dustin MD; Sichlau, Michael MD; Rapp, Timothy B. MD. The Use of Radiofrequency Ablation in the Treatment of Musculoskeletal Tumors. Journal of the American Academy of Orthopaedic Surgeons: December 2009 - Volume 17 - Issue 12 - p 737-743
- 7- Güleğ, B., Güngören, Z., Erol, C. ve Bülbül, A. M. (2019). Perkütan ablasyon yapılan osteoid osteomalarda eş zamanlı biyopsi mutlak gereklilik midir? Bakırköy Tıp Dergisi, 15(4), 352-356. <http://doi.org/10.4274/BTDMJB.galenos.2019.20181010013541>
- 8- Earhart J, Wellman D, Donaldson J, et al. Radiofrequency ablation in the treatment of osteoid osteoma: results and complications. Pediatr Radiol 2013;43:814
- 9- Hoffmann RT, Jacobs TF, Kubisch CH, Trumm CG, Weber C, Duerr HR, Helmberger TK, Reiser MF. Radiofrequency ablation in the treatment of osteoid osteoma-5-year experience. Eur J Radiol 2010;73:374-9
- 10- Huffman SD, Huffman NP, Lewandowski RJ, Brown DB. Radiofrequency ablation complicated by skin burn. Semin Intervent Radiol 2011;28:179-82

Keywords: Bone tumors, complication, osteoid osteoma, radiofrequency ablation, skin necrosis



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



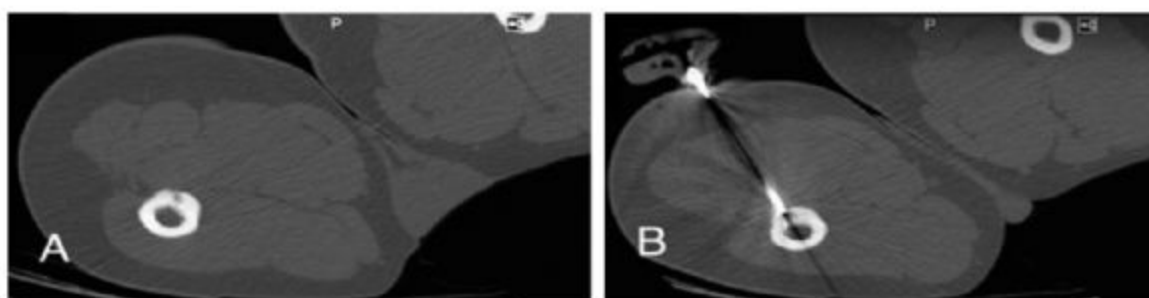
13 September
Pre Congress Course
14 - 16 September
Congress

Figure



The images showcase different stages of the patient's healing process. The above-left image reveals the initial presentation of a discharged necrotic wound on the right forearm after the CT-guided RFA procedure, while the above-right image shows an intraoperative view with the exposed drilling hole and ulnar bone post-debridement. The second row on the left depicts the patient's condition two weeks later following medical treatment and daily wound care. On the second row's right and the below-left images, the ulnar bone closure utilized mobilization and suturing of flexor muscle fascia, with the skin defect primarily sutured by releasing and approximating the wound edges. Finally, the below-right image demonstrates the successful 12-month follow-up with an uneventfully healed surgical scar, and the patient expressing high satisfaction with the outcome.

Figure 2



(A) Pre-operative image of the osteoid osteoma. (B) Intraoperative image of the CT-guided RFA treatment for osteoid osteoma.

Table 1

Test	Initial Results	Follow-up results
Hemoglobin (g/dl)	11.4	11.7
WBC ($10^3/\mu\text{L}$)	16.343	6.940
Neutrophil (%)	%74.3	% 56.5
Thrombocyte ($10^3/\mu\text{L}$)	265	233
CRP (mg/dl)	44	3.4
Erythrocyte sedimentation rate (mm/hour)	83	29

The patient's blood laboratory results.



PP-007

A Patient Who Developed Lagophthalmos After Rhinoplasty

Alper Ural¹, Mustafa Koray Gümüş²

¹Department of Plastic, Reconstructive and Aesthetic Surgery, Memorial Ankara Hospital, Ankara / Türkiye

²Department of Ophthalmology, Memorial Ankara Hospital, Ankara / Türkiye

Introduction

Rhinoplasty is one of the most frequently performed plastic surgery aiming to improve the aesthetic appearance of the nose and restore the functions. Although rhinoplasty improves the facial aesthetics and increase self-confidence, this surgery also has its own complications like other surgical operations. Bleeding, infection, airway obstruction, dorsal irregularities and shape deformities are possible minor complications whereas cerebrospinal fluid leakage, nasal septal perforation and soft tissue defects are some of serious complications to be encountered following rhinoplasty (1). Lagophthalmos, incomplete upper eyelid closure, is an exceptional condition following a rhinoplasty. Herein, we report a very rare case with lagophthalmos after a rhinoplasty.

Case Report

A 37-year-old male patient admitted to our outpatient clinic. He had complaints about nasal airway obstruction and he also had aesthetic concerns as well. Physical examination revealed that the external nose was deviated to the right, dorsal hump was prominent and the tip was both bulbous and droopy. Right sided septal deviation and hypertrophic inferior turbinates were noticed by endonasal examination. Structural rhinoplasty was the choice of treatment to correct the deviated external nose and deviated nasal septum. Dorsal hump was resected using double guided chisel. Then, bilateral spreader grafts were secured using 5-0 polydioxanone sutures. To narrow the bony pyramid and avoid an open roof deformity, medial oblique and lateral osteotomies were performed. Lateral endonasal osteotomies were performed through stab incisions on lateral nasal mucosa. Single guarded 4 mm wide lateral osteotome was used in purpose. Subperiosteal dissection and electrocauterization was not carried out prior to lateral osteotomies. During this procedure, we encountered an excessive nasal bleeding on right side which we attempted to make moderate compression and ice pack application in order to control the bleeding and edema. Extended septal graft and cap graft were also performed to strengthen the nasal tip. Thermoplastic splint and intranasal silicone splints were applied at the end of the surgery. The operation was ended without visible complication. Immediate postoperative findings presented right periorbital edema and ecchymosis without limited eye movement or reduced eye vision. Antibiotics and ice pack application was given to patient on first postoperative night at the hospital and he was discharged the next morning. After being discharged from the hospital, the patient was followed up at the third postoperative day to remove the intranasal silicone splints. Periorbital edema and bruising were obvious on the first postoperative day. Edema started to subside after third postoperative day when both the patient and us were able to notice the right eye lagophthalmos for the first time. The patient complained of incomplete upper eyelid closure and orbital pain. The paralysis of the right upper eyelid was obvious (Fig. 1a, Supplementary Video 1). The patient was consulted to an experienced ophthalmologist. He was diagnosed with lagophthalmos without significant corneal erosion. Lubricant eye drops and eye patching were prescribed as conservative therapies to avoid tear evaporation, corneal abrasion and/or keratopathy. He was given oral steroid 16mg/day tablet once a day for one week and anti-inflammatory drugs for two weeks. After six weeks of conservative care, the patient's upper eyelid paralysis showed mild improvement. Therefore, an electromyography (EMG) was not carried out. Two months postoperatively, the patient was capable of complete upper eyelid closure and satisfied with the overall result (Fig. 1b, Supplementary Video 2). During the 6 months of follow-up and close observation, there were no recurrence of lagophthalmos.

Discussion

Lagophthalmos is basically the condition of ocular exposure mainly due to incomplete closure of the eyelids. It can be a serious complication since it can cause exposure keratopathy, dry eye, corneal ulceration and even blurred vision. In rhinoplasty, lateral and medial osteotomies are frequently performed to close the open roof and narrow the bony pyramid after reducing nasal bone. Osteotomies may cause complications including haematoma, long-lasting edema, canthal ligament damage, dyssomnia, asymmetric nasal wall deformities and other several complications as well. In our patient lateral osteotomy performed by tapping the guarded nasal chisel caused excessive bleeding and an immediate ecchymosis on the right periorbital area probably by injury of the right dorsal nasal artery and lateral nasal artery branches. bleeding and edema occurred following osteotomies caused bruising and swelling on the right upper palpebra and periorbital area. Because postoperative edema and periorbital



haematoma were so obvious, the exact onset of the lagophthalmos was overlooked until the postoperative third day. We think that the transient lagophthalmos observed in our case may be due to temporary nerve damage resulting in orbicular muscle weakness secondary to neuropraxia and/or hematoma in that area. Related with this issue and neurotization of orbicularis oculi muscle, a superficial nerve branch originating from the buccal branch of the facial nerve had been described that courses superiorly over the medial canthal ligament to innervate the upper part of the orbicularis oculi muscle (2). Caminer et al. defined this nerve as angular nerve which is being formed by the coalescence of buccal and zygomatic branches of the facial nerve and lying cranially to innervate medial orbicularis oculi muscles along with procerus and corrugator muscles (3). Similar cases of lagophthalmos have previously been reported after Mohs surgery of medial canthal area and external dacryocystorhinostomy as a result of nerve injury, electrocautery-induced thermal injury, traumatic surgical transection and/or damaged muscle fibers (4). Based on these studies and reports, it can be assumed that in some patients upper orbicularis oculi muscle contraction can be dependent on this angular branch when the zygomatic branches of facial nerve encounters any injury and this angular branch of the facial nerve may even be the main branch responsible for innervating the orbicularis oculi muscle in some individuals, too.

Regarding recovery period, our patient's upper eyelid paralysis was luckily a transient facial nerve injury. Direct orbicularis oculi muscle is not expected to get injured during the procedure however the most possible cause of this injury was probably a low to low lateral osteotomy performed by tapping to chisels without a subperiosteal dissection prior to it. Haematoma on the right periorbital area could also have contributed negatively by disrupting nerve conduction in terms of pressing on the nerves which led to neuropraxia. In our opinion, soft tissues and nerve branches are more prone to get injured during lateral osteotomies without using fine instruments including piezo device and micro saws. Implementing piezo devices or micro saws can ensure safer and precise osteotomies. Moreover, avoiding the high setting power of the monopolar electrocauterization and performing a subperiosteal dissection before osteotomies may help to prevent the neurovascular tissues to get damaged during osteotomies. Neuropraxia is the least severe injury of the nerves which may cause temporary paralysis of the nerve fiber and recovers in 2-3 months. In our case, since the first week lubricant eye drops and eye patching were ordered as conservative therapies during six weeks to control the corneal abrasion by resorption of hematoma and dissolving edema. The patient's mild recovery of the right upper eyelid paralysis was noticed within 4 weeks after the operation and full recovery was achieved at the end of 8 weeks postoperatively. To the best of our knowledge, lagophthalmos following a rhinoplasty is very uncommon that there are only 2 published reports in literature since so far which the patients had similar prognoses and recovery period compared to our patient (5,6). Lagophthalmos after rhinoplasty is a terrifying situation for both the patient and the surgeon. The surgeon should keep in mind that there can always be anatomical variations even though he has a good knowledge of anatomy. It is imperative for the surgeon to perform osteotomies with fine instruments and precise techniques in order to avoid such risks and potential complications.

Nevertheless, the risk of lagophthalmos should be mentioned and included in the consent forms.

References

- 1-Bilgen F, Ince B, Ural A, Bekercioğlu M. Disastrous Complications Following Rhinoplasty: Soft Tissue Defects. J Craniofac Surg. 2020 May/Jun;31(3):809-812. doi: 10.1097/SCS.00000000000006185. PMID: 32028365.
- 2- Nemoto Y, Sekino Y, Kaneko H (2001) Facial nerve anatomy in eyelids and periorbit. Jpn J Ophthalmol 45:445-452 27. Caminer DM, Newman MI, Boyd JB (2006)
- 3- Caminer DM, Newman MI, Boyd JB. Angular nerve: new insights on innervation of the corrugator supercilii and procerus muscles. J Plast Reconstr Aesthet Surg. 2006;59(4):366-72. doi: 10.1016/j.bjps.2005.09.011. PMID: 16756251.
- 4-Vagefi MR, Winn BJ, Lin CC, Sires BS, Laukaitis SJ, Anderson RL, McCann JD. Facial nerve injury during external dacryocystorhinostomy. Ophthalmology. 2009 Mar;116(3):585-90. doi: 10.1016/j.ophtha.2008.09.050. Epub 2008 Dec 16. PMID: 19091406.
- 5- Jahandideh H, Dehghani Firouzabadi F, Dehghani Firouzabadi M, Roomiani M. Lagophthalmos of the upper eyelid after rhinoplasty: A case report. Clin Case Rep. 2021 Sep 16;9(9):e04776. doi: 10.1002/ccr3.4776. PMID: 34552734; PMCID: PMC8444282.
- 6- Venkataram A, Nassif PS, Leader BA, Rao D, Peng GL, Biradar R. Lagophthalmos after rhinoplasty- a possible complication. J Plast Reconstr Aesthet Surg. 2022 Oct;75(10):3877-3903. doi: 10.1016/j.bjps.2022.08.062. Epub 2022 Aug 24. PMID: 36100539.

Keywords: lagophthalmos, rhinoplasty, facial paralysis, aesthetic surgery, osteotomy



a: Impaired right upper eyelid closure is noticeable in the first postoperative week b: Lagophthalmos totally recovered at the end of 8th week after rhinoplasty



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

PP-008

Maxillary Giant Cell Tumor: Case Report

Ali Fuat Görgülü, Safa Eren Atalmış, Erk Evren, Alkan Çetin, Adnan Menderes, Mustafa Yılmaz

The Department of Plastic, Reconstructive and Aesthetic Surgery, Dokuz Eylül University Hospital, İzmir / Türkiye

Giant cell tumors are rare among primary bone tumors and they are benign but locally invasive tumors originating mostly from the epiphyseal regions of long bones. In this study, we described the management of a 16-year-old male patient with a giant cell tumor filling the left maxillary sinus and extending to the oral mucosa and orbital floor.

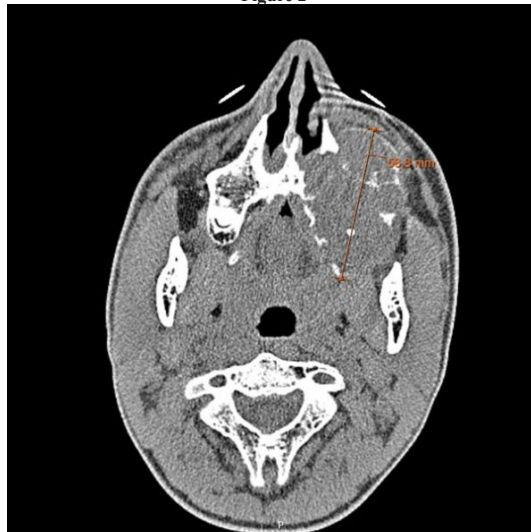
Keywords: Bone tumor, Campanacci classification, giant cell tumor, maxilla, maxillary mass

Figure 1



The view of the mass around hard plate

Figure 2



3.8x5.1x4 cm mass lesion in the left half of the maxillary bone, located in the pterygopalatine fossa, causing expansion and destruction in the bone structure.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

PP-009

Giant Odontogenic Fibroma Case Report and Treatment Approach

Merve Terzi, Hasan Basri Çağlı, Safa Eren Atalmış, Tahir Babahan, Fatih Berk Ateşşahin, Adnan Menderes

The Department of Plastic, Reconstructive and Aesthetic Surgery, Dokuz Eylül University Hospital, İzmir / Türkiye

Odontogenic fibromas are rare, benign neoplasms and composed of mature fibrous connective tissue of varying cellularity and with variable amounts of inactive-looking odontogenic epithelium. The therapeutic approach is usually surgical enucleation. Because of the nature of the tumor, enucleation is relatively easy, and even in large masses, an intraoral approach should be preferred as a first choice. So, we aimed to show that enucleation by using intraoral approach should be used even in large tumors without the need for mandibulectomy and that the contour of the mandible can be corrected with a green stick fracture.

Keywords: Jaw tumor, mandibular cyst, mandibular tumor, odontogenic fibroma, odontogenic tumor

Figure 1



Preoperative view of the patient.

Figure 2



Intraoperative view of enucleated odontogenic fibroma.

Figure 3



Postoperative 12th month view of the patient



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

PP-010

Median Cleft Lip

Fatih Berk Ateşşahin, Safa Eren Atalmış, Merve Terzi, Tahir Babahan, Adnan Menderes

The Department of Plastic, Reconstructive and Aesthetic Surgery, Dokuz Eylül University Hospital, İzmir / Türkiye

Upper lip midline clefts are rare and there is no definitive procedure for surgical management. We aimed to introduce a new method that contributes to the literature by using prolabium to provide elongation the columella without excising the prolabium.

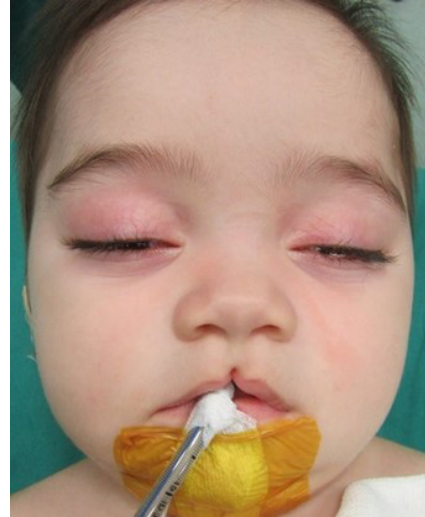
Keywords: Columella lengthening, DeMyer groups, median cleft lip, prolabium, Tessier 0 cleft

Figure 1



Preoperative view

Figure 2



Intraoperative view.

Figure 3



Postoperative 1st day and 4th month views of the patient.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

PP-012

An Effective Method of Vacuum Assisted Closure

Esra Aydın, Hasan Basri Çağlı, Fatih Berk Ateşşahin, Kasım İlker Sandıkçı, Mustafa Yılmaz, Haluk Vayvada

The Department of Plastic, Reconstructive and Aesthetic Surgery, Dokuz Eylül University Hospital, İzmir / Türkiye

Vacuum assisted closure (VAC) has been used for promoting wound healing process and skin grafting. However, during VAC application, fluid leaking from the wound site may cause maceration on the skin and loss of continuous negative pressure. We aimed to prevent the difficulties and complications caused by the leakage of exudate or fluids from wound site during VAC placement with an effective VAC application method.

Keywords: Wound dressing, negative pressure wound closure therapy, skin graft dressing, VAC application, vacuum assisted closure

Figure 1a,b



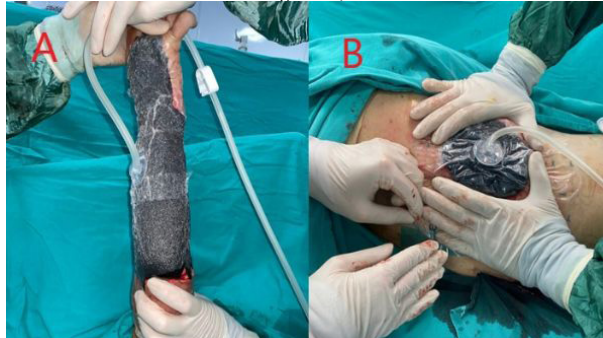
The vacuum pad is placed on the adhesive tapes and the device and the cover are connected.

Figure 2a,b



Vacuum at a pressure of 200 mmHg is started before the last tape is placed in the most inferior part of the wound and the fluids leaking from the wound are cleaned and dried.

Figure 3a,b



The final tape is adhered, ensuring full adhesion of the VAC sponge to the wound.



PP-013

Iatrogenic Labial Asymmetry: A Novel Technique For Labium Minus Reconstruction

Nijat Babaev¹, Gözde Şakul²

¹Karabük Training and Research Hospital, Plastic, Reconstructive and Aesthetic Surgery Department, Karabük / Türkiye

²Karabük Training and Research Hospital, Pediatric Surgery Department, Karabük / Türkiye

Introduction and Objectives

Labial hypertrophy and asymmetry are most common reasons for labioplasty operations. Labium minus excessive resection and asymmetry are most common complications of labioplasty operation. In the management of these complications; plastic, reconstructive and aesthetic surgery's knowledge and perception are necessary. A 13 year old girl was admitted to the department of obstetrics and gynecology with right-sided labial hypertrophy and therefore asymmetry complaint and because of this complaint she underwent labioplasty operation resulted with excessive resection of right labium minus tissue. She admitted to our pediatric surgery department with the complaint of persistent asymmetry four years later, when she was 17 years old. She was consulted to our plastic surgery department. On physical examination, it was observed that left side labium minus and clitoral hood was protected but right side labium minus was over amputated and this excessive tissue resection was the cause of the asymmetry (Figure 1). On palpation; ache and hypoesthesia on the posterior and hypoesthesia on the anterior were noticed. Left labium minus reconstruction was planned by using right hypertrophic labium minus tissue. It was decided to be repaired with cross-flap technique from the left labium minus. Patient and her relatives were informed and consent forms were signed.

Materials and Methods

The patient underwent spinal anesthesia and was placed in lithotomy position. Urethral catheter was inserted. It was planned to raise flap from left labium minus to the right side. Plan was made on the left labium minus. Left side labium minus margin was marked from anterior to posterior between the skin and mucosa line. Surgical plan was obtained in 3 layers: external skin, internal mucosa and midlevel subcutaneous fat tissue. Old incision scar was found in the receiving area. This scar was excised. Both sides labium minus tissues were prepared to bring out those three layers according to the plan for 3 layers. The left labial flap tissue was inset separately by layers to the prepared right labium minus residual tissue (Figure 2). She was followed in the ward for 3 days, discharged after removal of the urethral catheter. The separation of this pedicled flap was planned 3 weeks later. After the confirmation of tissue adaptation to the right labium, flap separation was performed leaving equal amounts of tissue on both sides. The flap circulation was perfect after separation. Informed consent was taken from patient and her relatives for publication.

Results

The patient was followed up for six months. The flap circulation was perfect in the early postoperative period. In the postoperative 6th month evaluation both sides were symmetrical and cosmetically very good. Patient was pleased aesthetically (Figure 3). Sense of touch was equal on the neo-created right labium minus and also the left labium minus.

Discussion and Conclusion

Labium minus plays a role in preventing the vagina from drying out and in the correct funneling of urine during the micturition. The width of this tissue has to be at least 1 cm for optimal functioning (1). Although the appearance of labium minus is controversial, the width is considered to be 7mm-5cm. It can be defined as labial hypertrophy, if its over 5 cm width (2).

Labioplasty is one of the genital areas surgical method for physiological and aesthetic purposes. Labioplasty operation is the reduction of labium minus or labium majus. Labium minus reduction procedure was first described in the literature in 1971. Labioplasty operations have various techniques including corner resection, deepithelization, wedge resection etc. (3,4).

Although it is considered as an easy operation, there are complications after the labioplasty. Among these, labium minus over resection and post operation asymmetry are significant complications. In our case, patient underwent an operation at the age of 13 due to excessive right side labium minus and therefore asymmetry. As a result, iatrogenic right sided labium minus absence developed and the asymmetry became more prominent. To prevent the occurrence of this kind of unusual iatrogenic problems and management of this kind of cases, the knowledge and perception of plastic and reconstructive principles are needed.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

The principle of “similia similibus curantur” is one of the basic principles in reconstruction. Based on this principle, the contralateral tissue is used as a donor for repair of other similar pair. Upper and lower palpebrae repairment, upper and lower lips repairment, finger tissue losses repairment, cruris tissue repairment can be given as examples. Based on these principles, labium minor tissue was considered as donor tissue and adaptation to the contralateral side as a pedicled flap was planned.

In the literature, methods like anterior cross flap, posterior cross flap, clitoral good flap, anterior and posterior labium minus V-Y advancement flap are defined in labium minus reconstruction (5-7). In our case, an incision was made from anterior to posterior along margin of the left labium minus and adapted to the opposite side. The technique used in the presented case is not available in the literature. It is surprising and pleasing that the patient had similar sense of touch on both sides on postoperative mid-term sensory examination.

For such cases, the hygiene around the incision and flap are highly important and periodic menstrual bleeding should be planned well for postoperative period. Our patient, cyclic bleeding occurred on the 20th postoperative day before the flap was separated but possible infection was prevented by daily cleaning around the flap with sterile saline. Second-line surgery was performed without any infective complications. Also, the patient had no micturition problem in the postoperative period.

Even though this type of iatrogenic problems are not common; to reduce these complications and for the optimal management; principles of plastic surgery should be prioritized. Although our case was a two-step procedure, it was technically an easy and cleverly method with very satisfactory results.

References

- 1- Scholten E. Female genital cosmetic surgery--the future. J Plast Reconstr Aesthet Surg. 2009;62(3):290-1.
- 2- Lloyd J, Crouch NS, Minto CL, Liao LM, Creighton SM. Female genital appearance: “normality” unfolds. Bjog. 2005;112(5):643-6.
- 3- Choi HY, Kim KT. A new method for aesthetic reduction of labia minora (the deepithelialized reduction of labioplasty). Plast Reconstr Surg. 2000;105(1):419-22; discussion 23-4.
- 4- Giraldo F, González C, de Haro F. Central wedge nymphectomy with a 90-degree Z-plasty for aesthetic reduction of the labia minora. Plast Reconstr Surg. 2004;113(6):1820-5; discussion 6-7.
- 5- Alter GJ. Labia minora reconstruction using clitoral hood flaps, wedge excisions, and YV advancement flaps. Plast Reconstr Surg. 2011;127(6):2356-63.
- 6- Nguyen AT, Ramsden AJ, Corrigan BE, Ritz M. Labial reconstruction with a cross-labial flap. J Plast Reconstr Aesthet Surg. 2011;64(10):1383-5.
- 7- Zeplin PH, Nuwayhid R, Nuwayhid M. Two-stage posterior cross-labial transposition flap: a novel technique for labium minus reconstruction. Aesthetic Plast Surg. 2014;38(5):930-2.

Keywords: labioplasty, labium, minus, reconstruction, iatrogenic, labial, asymmetry

Figure 1. Preoperative image





12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

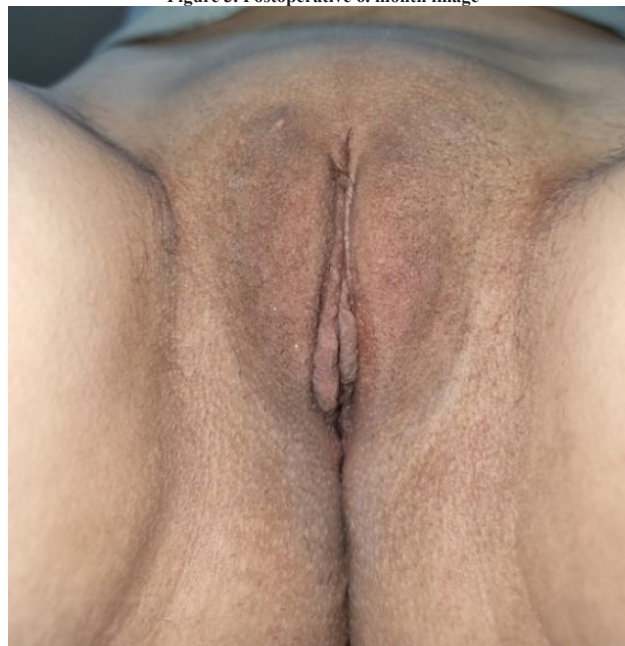
www.balkanplasticsurgery.org

Figure 2. Intraoperative image



a. received side preparation b. donor side preparation c. flap inset

Figure 3. Postoperative 6. month image





12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

PP-014

Psychological Evaluation of Patients with Upper Extremity Finger Amputation

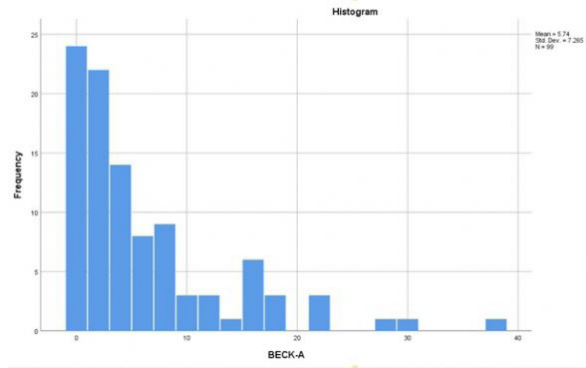
Abdullah Buğra Kaya, Özer Özmut, Seyit Ahmet Korur, Burak Yaşar, Hasan Murat Ergani, Ramazan Erkin Ünlü

Plastic Reconstructive and Aesthetic Surgery Department University of Health Sciences Ankara Bilkent City Hospital, Ankara / Türkiye

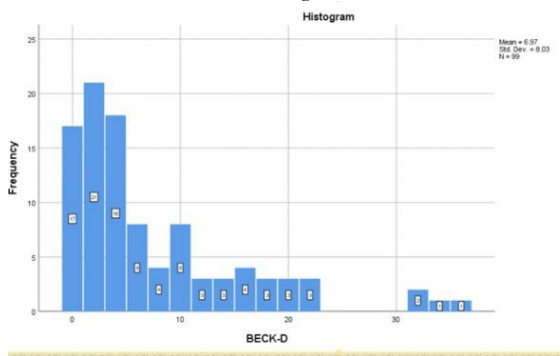
Limb loss may be caused by diabetes, peripheral arterial disease, tumors, or trauma, but the most common causes are diabetes and peripheral arterial disease. By the way, trauma accounts for 45% of amputations. In this research, we aimed to find psychological deprivation in traumatic upper extremity finger amputation patients and compare it with general population.

Keywords: amputation, trauma, finger amputation, upper extremity, finger loss

Histogram 1



Histogram 2





12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

PP-015

Diffuse Large B-Cell Lymphoma of The Upper Limb and Face: Two Ends of a Rare Spectrum

Cemal Burak Sirkeci, Can Ege Yalçın, Servet Yekta Aydın, Alp Ercan, Anıl Demiröz, Hakan Arslan

Plastic, Reconstructive and Aesthetic Surgery, İstanbul University - Cerrahpasa Medical Faculty, İstanbul / Türkiye

Introduction

Diffuse large B-cell lymphoma is the most common lymphoma subtype in adults. There is still conflicting literature on the identification of primary extranodal disease when nodal and extranodal lesions are detected simultaneously. Although the incidence of primary extranodal lymphoma varies geographically, diffuse large B-cell lymphoma is the most common non-Hodgkin's lymphoma subtype with extranodal disease. Studies have reported that skin and skeletal muscle invasion is rare and skeletal muscle invasion is mostly observed in the lower extremities.

In this study, we aimed to present two patients, 61 and 56 years old, presented to us with an open wound on the left arm and a nodular mass on the left cheek respectively and both were diagnosed with diffuse large B-cell lymphoma. Therefore, we wanted to show that extranodal diffuse large B-cell lymphoma may be included in the differential when considering cutaneous malignancies in the case of chronic open wounds.

Case 1

A 61-year-old woman consulted to our outpatient clinic with a complaint of an open wound on the left elbow. In October 2020, the patient, who did not have a specific history for trauma except for one bump 1 year ago, noticed an open wound about 2 cm in diameter on her elbow. Afterwards, she was seen in an other hospital and topical treatment was recommended. Albeit, the patient did not benefit from local care and the wound gradually grew. The patient consulted to us 6 months after the initial visit to the first hospital. In her history, she did not describe any comorbidities and therefore was not taking any long term medication. Her surgical history was unremarkable except for hysterectomy, cholecystectomy and appendectomy. On initial examination, a wound was located on the left elbow with a diameter of approximately 15 cm with dry necrotic areas at the base and granulation tissue on the periphery. Hyperpigmentation and fragile vascular networks in the surrounding healthy skin tissue were also observed. After debridement, *Klebsiella* spp. was seen in the wound culture. Oral antibiotherapy was started after consulting with infection diseases. However, there was no significant healing in the wound, therefore the patient was internalised.(Fig.1) After internalization, the patient's laboratory results were unremarkable except for acute phase increase (CRP: 36), mild normocytic anemia and HBsAg positivity. Gram-positive rods and coagulase-negative staphylococci grew in cultures sent from the open wound. Antibiotherapy was initiated. Subsequently, magnetic resonance imaging (MRI) was requested precise identification of the lesion borders (Fig.2) Imaging showed a mass lesion in the distal half of the left arm extending subcutaneously through the muscle planes. An incisional biopsy was performed and it revealed atypical cells filling the dermis. Immunohistochemically, these cells were found to be positive for Bcl-2 and C-myc. The patient was diagnosed with diffuse large B-cell lymphoma. Positron emission tomography scan (PET/CT) imaging detected lesions related with metastasis in the left axilla, supraclavicular region, lung and spleen. As a result, the patient was followed up for treatment by the medical oncology and haematology departments.

Case 2

A 56-year-old male patient without any comorbidity, was evaluated at an other hospital because of a nodular mass in the left cheek area that had been gradually growing for 5 months. A punch biopsy was performed. Because the biopsy result was suspicious for Merkel cell carcinoma, he was referred to our department.(Fig.3) A wide excision of the lesion and subsequent a sentinel lymphadenectomy was performed. The initial diagnosis was Merkel cell carcinoma. Preoperative PET/CT imaging revealed no additional lesions suspicious for malignancy except the main lesion. In the pathological evaluation of the excision material of the patient, CD 20 (+), CD 10 (+), Bcl-2 and Bcl-6 (+) were reported, and the synaptophysin and chromogranin required for Merkel cell carcinoma were negative. The patient was diagnosed with diffuse large B-cell lymphoma. Finally, the patient was followed up by the medical oncology and haematology departments.



12th

BAPRAS CONGRESS

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center

Konya, TÜRKİYE

Discussion and Conclusion

Primary cutaneous diffuse large B-cell lymphoma represents 4% of all cutaneous lymphomas. The median age at diagnosis has been reported to be approximately 78 years. It is more common in women. Extranodal diffuse large B-cell lymphoma originating from the skin is usually aggressive and presents as rapidly growing masses in the lower extremities. Lower extremities are affected in 80% of patients. Leg type is clinically aggressive, with high rates of relapse and metastasis. Average of 5-year survival has been reported to be 50-60%. On the other hand, non-leg-type lymphomas are presented with a 5-year survival rate up to 90%. They require effective treatment due to their aggressive character. Although the use of palliative care, radiotherapy and non-aggressive chemotherapies have been reported, combined chemotherapeutic agents and rituximab treatments are more commonly used according to the current literature. While it is obvious that cutaneous malignancy is one of the first possibilities in the differential diagnosis of chronic open wounds, it is important to remember that once cutaneous malignancy has been excluded, extranodal lymphoma is also a possible cause.

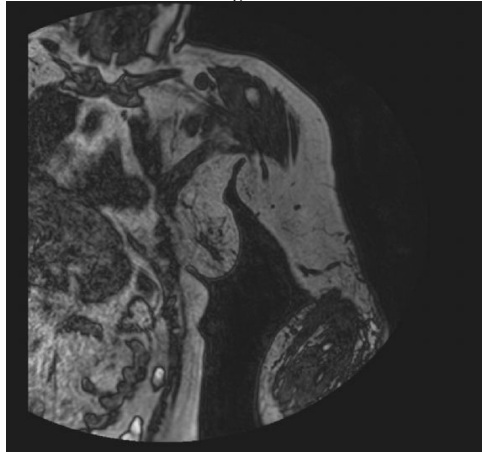
Keywords: chronic wound, diffuse B-cell lymphoma, extranodal lymphoma, face, skin cancer, upper limb

Figure 1



Open wound posteromedial to distal left arm, extending medial and beyond elbow to proximal forearm, including vascular tortuosity on margins, granulation tissue and necrosis on its base.

Figure 2



A mass lesion in the distal half of the left arm, extending to the elbow, predominantly located in the subcutaneous planes, but also extending to the muscular planes, surrounding the brachial artery 360 degrees, but not causing a significant decrease in luminal caliber.

Figure 3



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org



A nodular mass on the left cheek, present for 5 months, approximately 1 cm in diameter, with a small ulcer superiorly.



PP-018

Free Fibula Flap for Metacarpal Bone Tumor Reconstruction in Pediatric Age Group

Kaan Kavruk¹, Mehmet Uğur Okan¹, Süleyman Çeçen¹, Selçuk Akın¹

¹Bursa Uludağ University, Faculty of Medicine, Department of Plastic Reconstructive and Aesthetic Surgery, Bursa / Türkiye

Introduction and Objectives

Aneurysmal bone cysts account for approximately 5% of benign bone tumors, but only 3% to 5% of all aneurysmal bone cysts occur in the hand.(1) Hand lesions most commonly occur in the second decade of life, with males and females equally affected. Metacarpal involvement is more common than phalangeal involvement, and carpal lesions are rare. Its radiographic appearance may be similar to giant cell tumor of bone. However, more frequently, an expansive deformity and a thin bone rim surround the entire lytic lesion.(2) Soft tissue extension is uncommon. Although this lesion can be aggressive locally, it is not known to metastasize. The risk of local recurrence may be as high as 60% after curettage and bone grafting of lesions in long bones.(3)

Its reported successful local control of 86% of lesions treated by curettage, cryosurgery, and cementation or bone grafting.(3) Cryosurgery has been used successfully to treat recurrent aneurysmal bone cyst in the proximal phalanx. Wide excision has been successful in treating metacarpal lesions, and large distal phalangeal lesions have been treated effectively by amputation.(1)

A 6-year-old female patient applied to our polyclinic with swelling around the 1st metacarpal bone of the right hand. Radiological imaging was consistent with an aneurysmal bone cyst. (Figure 1) Radiological diagnosis has been verified pathologically by open biopsy. The decision to follow up has been made. However, a rapid enlargement had seen in the 6th month and 1st year. Total excision had been decided because of the threat to hand functions—reconstructive options and results were evaluated with parents. The aneurysmal bone cyst was excised and reconstructed with a free fibula flap. There were no complications in the postoperative follow-ups.

Figure 1: Preoperative 3D CT scan view

Material and Methods

A 6 years old female patient was referred to the hospital because of progressive swelling around the dorsal region of the first metacarpal bone for three months—expansion of the bone and cortical thinning caused by the cyst identified by computer tomography. An open biopsy was performed, and an aneurysmal cyst diagnosis was verified pathologically. The case was evaluated with the patient's parents, and following up for 6-month intervals has been decided. After one year, it was seen that imaging of a progressive growing cyst could cause disorders of the hand and thumb. The decision was made about total excision and reconstruction of the lesion. Bone graft, fixation options, and reconstructive with free fibula flap alternatives has told to the parents.

In the preoperative preparations, CT angiography of the lower extremity was performed, and the peroneal artery was verified for free fibula flap.

During the operation, the first metacarpal bone was seen filled with an aneurysmal bone cyst. All of the bone tissue was excised except the articulation faces of the first metacarpal bone, and the decision of free flap reconstruction has made. (Figure 2) 2,5 cm of fibula flap prepared from lower extremity and skin flap got involved for monitoring. The radial artery and the cephalic vein were used for anastomosis. In the first 24 hours, the flap is checked hourly, then in the 24-72 hours checked once in 2 hours. In the following days, the distance between follow-up periods was increased, and the follow-up was continued until the end of the first week. On the 5th postoperative day, bone scintigraphy confirmed that the bone was viable. At the end of the week, the blood circulation of the flap has seen as natural, and the patient was discharged and followed up closely.

Figure 2: Perioperative view and excised bone



Results

There weren't any complications in the postoperative term. (Figure 3) The patient has consulted the relevant department for physical therapy in the early periods, and the parents have been informed about how important physical therapy is. At the end of the first year, the patient had a full range of movement, could use her hand, and hold the pencil easily.

Figure 3: Postoperative 6th month view

Discussion and Conclusion

Enchondroma, periosteal enchondroma, osteochondroma, osteoid osteoma, chondromyxoid fibroma, osteoblastoma, unicameral bone cyst, aneurysmal bone cyst, and giant cell tumor of bone are the benign tumors of the upper extremity. Enchondroma is the most common bone tumor of the hand, and %90 of Enchondromas are seen on the hand. The proximal phalanx is involved most commonly.(4, 5) Benign bone tumors are treated by curettage, cementation, cryotherapy, and reconstruction with bone grafting, which can prevent limb loss and function loss. As in our case, loss of function and limb can be prevented by proceeding with reconstruction with free flaps in advanced cases.(6)

Chondrosarcoma, osteogenic sarcoma, Ewing's sarcoma, and metastatic tumors are the most common malign tumors. Because of their aggressive process, the main treatment approaches in malign bone tumors are wide excision, end block excision, and amputation. Despite the aggressive treatment options, neo-adjuvant and adjuvant chemotherapy are necessary. In this group of patients, the priority is providing a cure for the patient. Therefore, reconstruction can be left to a later period.(7)

For most bone defects of less than 6 cm with a well-vascularized bed, adequate soft tissue cover, and absence of infection, a conventional cancellous or cortico-cancellous auto-graft is generally recommended. Cancellous bone has greater inductive capacity than cortical bone and should be used unless mechanical stability is required.(8)

The process of bone graft incorporation is by creeping substitution, a process of gradual vascular ingrowth, resorption, and replacement of necrotic bone. Advancing substitution results in rapid revascularization of small cancellous grafts but is slow and incomplete in cortical bone.

As much as 40% to 50% of lamellar bone remains necrotic, and the revascularization process that does occur causes significant mechanical weakening because of the resorption of necrotic bone.(8)

Conventional (non-vascularized) bone grafts of all types have substantial problems with fatigue fracture, even years after the surgical procedure. Successful grafting requires a well-vascularized bed, adequate immobilization, and protection from excessive stress by rigid internal fixation.(8, 9)

Unlike conventional bone grafts, vascularized bone remains alive and dynamic in its new site. Viable bone does not undergo creeping substitution; thus significant osteopenia does not occur. The result is improved strength, healing, and stress responsiveness compared with non-vascularized conventional bone grafts. The incidence of stress fracture is lower than in massive structural auto-grafts or allografts. Further, the bone union is more rapid, and bone hypertrophy in response to applied stress may occur with time.(9)

Since it is in the pediatric age group, the thumb has great importance for hand function, and the lesion is continuous throughout the entire metacarpal bone, we considered reconstruction with a vascularized fibula flap. In the preoperative period, we had discussions with the family each time so that they understood the process. The parents have been informed about how important physical therapy is. Increasing developments in microsurgery allow free tissue transplantation, a complicated procedure and the top step of the reconstructive ladder, to be used as the first choice, even in pediatric age groups.(10) We think complication rates are not higher than the conservative methods if adequate preoperative evaluation and planning are done.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

References

- 1- Frassica FJ, Amadio PC, Wold LE, Beabout JW. Aneurysmal bone cyst: clinicopathologic features and treatment of ten cases involving the hand. The Journal of hand surgery. 1988;13(5):676-83.
- 2- Mcfarland GB, Hoffer MM. Paralysis of the intrinsic muscles of the hand secondary to lipoma in Guyon's tunnel. JBJS. 1971;53(2):375-6.
- 3- Marcove RC, Sheth DS, Takemoto S, Healey JH. The treatment of aneurysmal bone cyst. Clinical Orthopaedics and Related Research®. 1995;311:157-63.
- 4- Bauer RD, Lewis MM, Posner MA. Treatment of enchondromas of the hand with allograft bone. The Journal of hand surgery. 1988;13(6):908-16.
- 5- Bickels J, Wittig JC, Kollender Y, Kellar-Graney K, Mansour KL, Meller I, et al. Enchondromas of the hand: treatment with curettage and cemented internal fixation. The Journal of hand surgery. 2002;27(5):870-5.
- 6- Huvo AG. Bone tumors: Diagnosis, treatment, and prognosis. 3rd ed. Philadelphia: WB Saunders; 1991.
- 7- Frassica FJ, Amadio PC, Wold LE, Dobyns JH, Linscheid RL. Primary malignant bone tumors of the hand. The Journal of hand surgery. 1989;14(6):1022-8.
- 8- de Boer HH, Wood MB. Bone changes in the vascularised fibular graft. The Journal of Bone & Joint Surgery British Volume. 1989;71(3):374-8.
- 9- Wood MB, Bishop AT. Massive bone defects of the upper limb: reconstruction by vascularized bone transfer. Hand Clinics. 2007;23(1):49-56.
- 10- Power HA, Cho J, Kwon JG, Abdelfattah U, Pak CJ, Suh HP, et al. Are perforators reliable as recipient arteries in lower extremity reconstruction? analysis of 423 free perforator flaps. Plastic and Reconstructive Surgery. 2022;149(3):750-60.

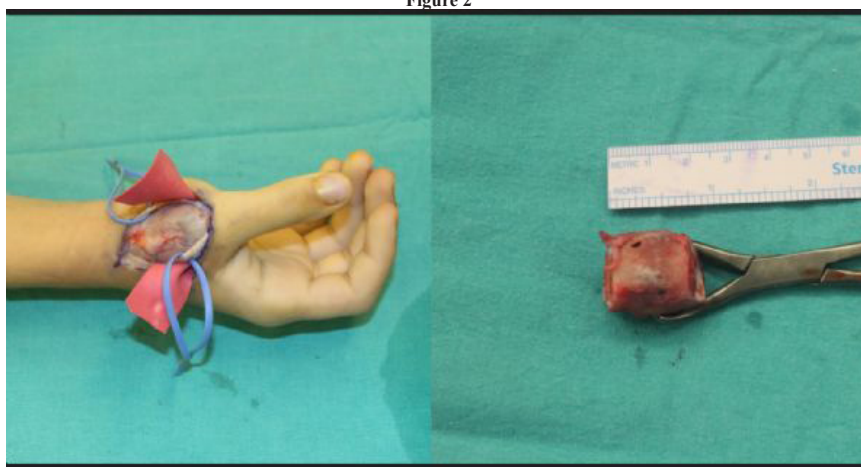
Keywords: Aneurysmal bone cyst, Pediatric bone tumors, Metacarpal bone, Upper extremity, Hand tumors

Figure 1



Preoperative 3D CT scan view

Figure 2



Perioperative view and excised bone



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Figure 3



Postoperative 6th month view



PP-019

Scaphoid Pseudoarthrosis Repair with Cancellous Bone Graft From The Radius

Yasin Canbaz, Ömer Büyükkaya, Ali Can Aydın, Mert Noyan Dabak, Percin Karakol

Plastic, Reconstructive and Aesthetic Surgery, Health Science University, Basaksehir Cam ve Sakura City Hospital, İstanbul / Türkiye

Scaphoid pseudoarthrosis, a challenging clinical condition characterized by non-union of the scaphoid bone, remains a significant concern in hand surgery. This article provides a non common approach to scaphoid pseudoarthrosis repair with bone grafting from the radius.

Introduction

The scaphoid bone is the most commonly fractured bone among the carpal bones. Scaphoid fractures usually occur in young male individuals as a result of falling while the wrist is extended. The fracture line may not always be distinguishable on direct X-rays, leading to delays in diagnosis and treatment. Scaphoid pseudoarthrosis occurs when a previously fractured scaphoid bone fails to heal as a single, solid unit, leading to the formation of a false joint. (1) This can result from various factors, including delayed diagnosis, inadequate immobilization, blood supply issues, or the type and location of the fracture. (2) When left untreated, scaphoid pseudoarthrosis can cause chronic wrist pain, weakness, and long-term disability. While conventional methods like immobilization with a cast are commonly used for acute scaphoid fracture treatment, there is a consensus that surgery is necessary for the treatment of scaphoid nonunion. However, there are variations in surgical techniques. Successful outcomes can be achieved using techniques such as vascularized flaps, autologous bone grafts, and various fixation methods. Reported success rates, in terms of achieving union of the non-union, vary considerably and there is no clear evidence that one surgical technique is superior to another. (3) The goal of surgery is to restore the structural integrity of the scaphoid bone, relief of pain, and reestablishment of wrist function. (4) One of the commonly used techniques is the application of an autologous bone graft, often using the iliac crest as the graft source. In this case presentation, we present a case of a 30-year-old patient diagnosed with scaphoid nonunion which we achieved successful result by repair using cancellous bone graft harvested from the distal radius.

Materials and Methods

A 30-year-old male patient, who had a history of trauma two years ago and complained of pain and limited wrist movement in the wrist, presented to our clinic. Following a physical examination, a direct X-ray and wrist MRI were performed, and the patient was diagnosed with proximal scaphoid non-union. Surgical intervention was planned for the patient. After performing a brachial plexus block, a dorsal curvilinear incision were made under a tourniquet to explore the scaphoid bone. After debriding necrotic tissues, a cancellous bone graft was taken from the distal end of the radial bone and adapted to the scaphoid bone. Following surgery, a splint was applied for one month. After removing the splint, the patient was referred for physical therapy. During outpatient follow-up appointments, it was observed that the patient had no complaints of pain and could perform wrist movements comfortably.

Result

The radius is an attractive source of bone graft for scaphoid pseudoarthrosis repair due to its proximity to the scaphoid bone and the potential for an osteoconductive and osteoinductive graft. The cortical structure of the radial bone provides mechanical stability, and its cancellous bone offers an excellent environment for new bone formation. Additionally, harvesting a radial bone graft minimizes donor site morbidity, reduces operative time, can be performed through a single approach and allows the use of regional anaesthesia. (5) The use of cancellous bone graft from the radius in scaphoid pseudoarthrosis repair aims to stimulate bone healing and fusion at the nonunion site. Successful graft incorporation results in improved wrist stability, pain reduction, and restoration of wrist function. For all these reasons, treatment of scaphoid pseudoarthrosis with radius bone graft appears to be a good option.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

References

- 1- Ring, D., Jupiter, J. B., & Herndon, J. H. (2006). Acute fractures of the scaphoid. The Journal of Bone and Joint Surgery. American volume, 88(12), 2750-2758.
- 2- Dias, J. J., & Brenkel, I. J. (2000). The natural history of scaphoid pseudarthrosis: a review of 55 cases. The Journal of Hand Surgery, 25(3), 226-230
- 3- Ferguson DO, Shanbhag V, Hedley H, Reichert I, Lipscombe S, Davis TRC. Scaphoid fracture non-union: a systematic review of surgical treatment using bone graft. Journal of Hand Surgery (European Volume). 2016;41(5):492-500. doi:10.1177/1753193415604778
- 4- Ribak S, Medina CE, Mattar R Jr, Ulson HJ, Etchebehere M. Treatment of scaphoid nonunion with vascularised and nonvascularised dorsal bone grafting from the distal radius. Int Orthop. 2010 Jun;34(5):683-8. doi: 10.1007/s00264-009-0862-6. Epub 2009 Sep 3. PMID: 19730861; PMCID: PMC2903183.
- 5- Zoubos AB, Triantafyllopoulos IK, Babis GC, Soucacos PN. A modified Matti-Russe technique for the treatment of scaphoid waist non-union and pseudarthrosis. Med Sci Monit. 2011 Feb;17(2):MT7-12. doi: 10.12659/msm.881376. PMID: 21278699; PMCID: PMC3524708.

Keywords: scaphoid, non-union, bone graft, radius, pseudarthrosis

Figure 1



preop scaphoid nonunion x-ray image

Figure 2



postop 1 year x-ray image



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

PP-020

Two Primary Synchronous and Symmetrical Malignant Melanomas of the Bilateral Upper Extremity

Özge Eren, Merve Terzi, Abdurrahman Ercan Yurttaşer, Yunus Can Tokgöz, Salih Can Sezer, Adnan Menderes, Haluk Vayvada

The Department of Plastic, Reconstructive and Aesthetic Surgery, Dokuz Eylül University Hospital, İzmir / Türkiye

Melanoma is a malignancy of cells that produce melanocytes, melanin (pigment) in the basal layer of the epidermis. Melanocytes are of neural crest origin and therefore express many signaling molecules and factors that promote migration and metastasis after malignant transformation. Although it accounts for only 1% of skin cancers, melanoma accounts for more than 80% of skin cancer deaths. Between 0.6% -12.7% of melanoma patients develop additional primary melanomas. Symmetrical localization of lesions on bilateral extremities is extremely rare in multiple malignant melanoma disease, and very few cases are reported in the literature. In this article, we present a 61-year-old female patient with CDKN2A mutation and two primary melanomas located at approximately the same location on the posterior of both arms and occurred simultaneously.

Keywords: CDKN2A mutation, malignant melanoma, synchronous melanomas, symmetrical melanomas, skin cancer

Figure 1





12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

PP-021

Mercury Injection into The Hand: A Case Report

Salih Can Sezer, Tahir Babahan, Ahmet Özdemir, Merve Özger, Haluk Vayvada, Mustafa Yılmaz

The Department of Plastic, Reconstructive and Aesthetic Surgery, Dokuz Eylul University Hospital, İzmir / Türkiye

In this article, we reviewed a case of elemental mercury injection into the dorsum of the hand. We aimed to give you information about the clinical progression, diagnosis/treatment process, local and systemic effects of mercury injection through this case.

Keywords: Elemental mercury, hand injury, heavy metal poisoning, mercury embolism, mercury toxicity, subcutaneous mercury injection



Figure 1
X-ray sections and view of the hand in emergency department.



Figure 2
Intraoperative scope imaging and protective clothing of the operation team within biosafety measures and X-ray examinations before surgical treatment

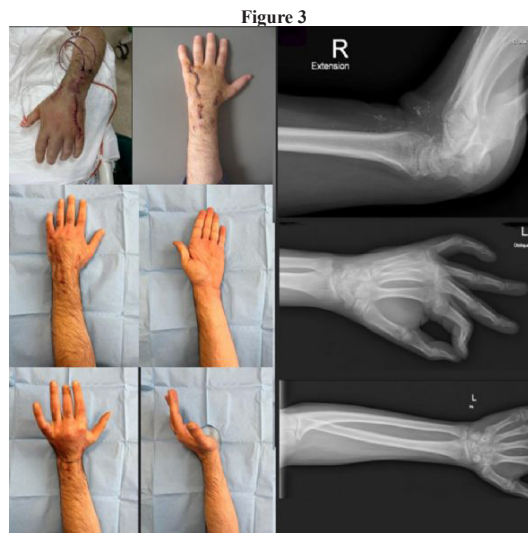


Figure 3
Postoperative 13th, 22th day and 3th month views of the hand and 3th month x-ray sections of the hand.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

PP-022

Spontaneous Progressive Necrosis of the Upper Limb: A Case Report

Ahmet Özdemir, Tahir Babahan, Salih Can Sezer, Hasan Basri Çağlı, Cenk Demirdöver, Mustafa Yılmaz

The Department of Plastic, Reconstructive and Aesthetic Surgery, Dokuz Eylül University Hospital, İzmir / Türkiye

We examined a patient with Granulomatous Polyangiitis, Multiple Myeloma and possible drug induced spontaneous progressive necrosis of upper limb. Spontaneous necrotic lesions at the upper limb are rare and difficult to diagnose and treat. So, diagnosis and treatment management of this case was presented to guide the management of similar cases.

Keywords: Amputation, drug induced skin lesions, granulomatous polyangiitis, thrombophlebitis, upper limb necrosis, vasculitis

Figure 1



The patient's view and X-rays at the time of first admission.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Figure 2



Left limb of the patient on the second hospitalization, the demarcation line of necrosis is easily visible and the lesion periphery is separated from the intact tissue under autolytic debridement, second row images are during and after the first surgical debridement respectively, third row photos are after one week from surgical debridement, it is seen that the left forearm muscles and tendons also had necrosis.

Figure 3



All neurovascular structures connected proximal to the final amputate and amputation level after unstoppable necrosis, in the second row can be seen similar lesions proximal to the residual limb line.



12th

BAPRAS CONGRESS



2023

13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org

PP-023

Classic Experience: Index Finger Littler Flap in Pulpa Ampu

Percin Karakol, Yasin Canbaz, Zeki Celik, Muhammed Yasin Babacan, Serhat Inan

Plastic, Reconstructive and Aesthetic Surgery, Health Science University, Basaksehir Cam ve Sakura City Hospital, İstanbul / Türkiye

Introduction and Aim

In index finger pulp amputations, In cases where replantation is not possible, both sensory a saving method for both restoration and defect closure Littler Flap as a method.

Finger soft tissue defects are common following trauma, burn, and contracture release. Heterodigital neurovascular island flap is one of the important flaps used for this purpose. However, it is generally used for the repair of pulp defects involving first finger, it is also useful for defects involving other fingers.

Material and Methods

41-year-old male patient, on the index finger of his right hand. He was admitted to the emergency room with a crush injury. On physical examination right hand D2 distal phalanx pulp amputation was observed. Minimal bone fragment was observed in the amputate. It was observed that the FDP was intact and some of the distal phalangeal bone was exposed. The patient was told that the chance of replantation was very low. The possibility of obtaining the index finger with a function similar to the old one was explained if the Littler flap is made. The operation was performed after the patient accepted the procedure and the defect with a 2X2 cm Littler Flap taken from the right hand D3 it is closed. Used as amputate graft, thus no extra morbidity and no scar was formed.

In the postoperative 1st day visit, the flap was monitored live and in situ. In addition, the patient's D2 pulp feels the D3 pulp when touched observed as expected.

Results

Pulp amputations of the distal phalanx, especially if there is exposed bone, its management can be difficult.

When replantation is not possible, the use of Littler flap is a classical method in the literature that has some advantages over both stump construction and restoration with other local flaps. Since its use has decreased in recent years, this case report is planned to be remembered and to continue to be included in our daily practice. The most important reason why this flap is preferred in the reconstruction of finger defects is that it is a reliable option for flap viability due to the fixed pedicle, single-stage operation, early mobilization of the hand, good functional and cosmetic result. Our opinion is that littler flap should be used in index finger defects because flap is very useful and reliable in terms of complications and donor area morbidities.

Keywords: littler flap, finger tip, amputation, reconstruction, replantation



PP-024

Our Experiences in Reconstruction with Free Medial Femoral Condyle Flap in Hand Bone Defects

Percin Karakol, Eren Tuncer, Ali Can Aydın, Zeki Çelik, Muhammed Yasin Babacan

Plastic, Reconstructive and Aesthetic Surgery, Health Science University, Basaksehir Çam ve Sakura City Hospital, İstanbul / Türkiye

Introduction and Aim

Microvascular free tissue transfer is a reliable method for the reconstruction of complex tissue defects. The development of microsurgery has increased the frequency of free tissue transplantation in reconstructive surgery. Femoral medial condyle vascularized bone flap has a high success rate published in the literature regarding its use in non-union and avascular necrosis of the upper and lower extremities. It is reported to have minimal donor site morbidity and the ability to provide structural support to load-bearing areas. The femoral medial condyle flap of vascularized bone rests on the descending genicular artery and vein. This small free vascularized bone flap from the supracondylar region of the femur is an attractive alternative to traditional vascularized bone flap procedures.

Material and Method

In this study, 2 cases who were repaired with free femoral medial condyle vascularized bone flap in Başakşehir Çam and Sakura City Hospital in 2020 were evaluated retrospectively.

Results

The first patient who was repaired with a femoral medial condyle vascularized bone flap was a 23-year-old non-union case secondary to a fracture of the scaphoid bone due to an in-vehicle traffic accident 5 years ago. In the physical examination of the patient, there was widespread pain with active flexion and extension movements in the left hand and palpation over the scaphoid. On the radiological imaging, a displaced fracture line was observed in the scaphoid bone. In September 2020, the patient underwent a reconstruction operation with a femoral medial condyle bone flap to repair the scaphoid fracture. The flap anastomosis was performed end to end between the branch and concomitant veins of the descending genicular artery and the radial artery and concomitant veins. No early or late complications developed in the flap follow-up of the patient in the service. The patient was followed up by us for radiological and clinical examination.

The other patient, who was repaired with a femoral medial condyle vascularized bone flap, was 14 years old, had a fracture in the proximal phalanx of the left D1 proximal phalanx about 6 years ago, due to compression on the door, and could not use his thumb actively as a result of lack of treatment. On physical examination, it was observed that there was shortening of the D1 distal phalanx, nail dystrophy, and a 60-degree flexion contracture in the IP joint was detected. On the radiological imaging, there was a displaced fracture line and a gap in between. In October 2020, the patient underwent reconstruction operation with a femoral medial condyle bone flap to repair the fracture in the proximal phalanx. The flap anastomosis was performed end to end between the branch and concomitant veins of the descending genicular artery and the dorsal branch of the radial artery and its concomitant veins. No early or late complications developed in the flap follow-up of the patient in the service. The patient was followed up on radiological and clinical examination by us. At the postoperative 8th month follow-up, the flap was alive and the thumb IP joint movement was limited, but he could roughly pinch the pinch.

Discussion

With the development of microsurgery techniques and instruments, free tissue transplantation, which is the top option of the reconstruction step, is performed more frequently. Among the advantages of the femoral medial condyle bone flap used in our study over traditional vascularized bone flaps are; features such as minimal donor site morbidity, short operative time, co-hosting of spongy and cortical bone components, being easily shaped and well vascularized even after shaping.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Conclusion

It is possible to increase the success rate by identifying the preventable causes of flap loss and eliminating these causes. In this study, we propose the femoral medial condyle bone flap as a good alternative to other bone flap options in the reconstruction of scaphoid and phalangeal fractures

The other patient, who was repaired with a femoral medial condyle vascularized bone flap, was 14 years old, had a fracture in the proximal phalanx of the left D1 proximal phalanx about 6 years ago, due to compression on the door, and could not use his thumb actively as a result of lack of treatment. On physical examination, it was observed that there was shortening of the D1 distal phalanx, nail dystrophy, and a 60-degree flexion contracture in the IP joint was detected. On the radiological imaging, there was a displaced fracture line and a gap in between. In October 2020, the patient underwent reconstruction operation with a femoral medial condyle bone flap to repair the fracture in the proximal phalanx. The flap anastomosis was performed end to end between the branch and concomitant veins of the descending genicular artery and the dorsal branch of the radial artery and its concomitant veins. No early or late complications developed in the flap follow-up of the patient in the service. The patient was followed up on radiological and clinical examination by us. At the postoperative 8th month follow-up, the flap was alive and the thumb IP joint movement was limited, but he could roughly pinch the pinch.

Keywords: free flap, medial condyle flap, hand surgery, reconstruction, bone defects



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

PP-025

Orbital Exenteration and Reconstruction in Periorbital BCC

Arda Tınaz, Tuğba Akgün, Mert Şen, Hasan Murat Ergani, Burak Yaşar, Ramazan Erkin Ünlü

Plastic Reconstructive And Aesthetic Surgery, Bilkent City Hospital, Ankara / Türkiye

Basal cell carcinoma is the most common invasive cancer in humans, numbering nearly 1 million cases per year in the United States. These are slow-growing tumors that rarely metastasize. The vast majority is recognized at an early stage and is cured by local excision. However, a small number of tumors (<0.5%) are locally aggressive and potentially disfiguring, or exceedingly rarely may metastasize to distant sites. They occur at sun-exposed sites in lightly pigmented elderly adults. It most commonly affects the head and neck, and cosmetic disfigurement is not uncommon. The aim of this report is to share the method and planning applied after the patient who was previously recommended orbital exenteration because of orbital invasion, which is not performed very often in our clinic, refused this approach and accepted exenteration after not seeing any benefit after follow-up with vismodegib.

Keywords: BCC, exenteration, periorbital, vismodegib, temporal artery based rotation flap, mid-face lifted flap

Intraop



defect after n-bloc excision

postop



The resulting defect was closed with a mid-face lift and temporal artery-based rotation flap and FTSG



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE

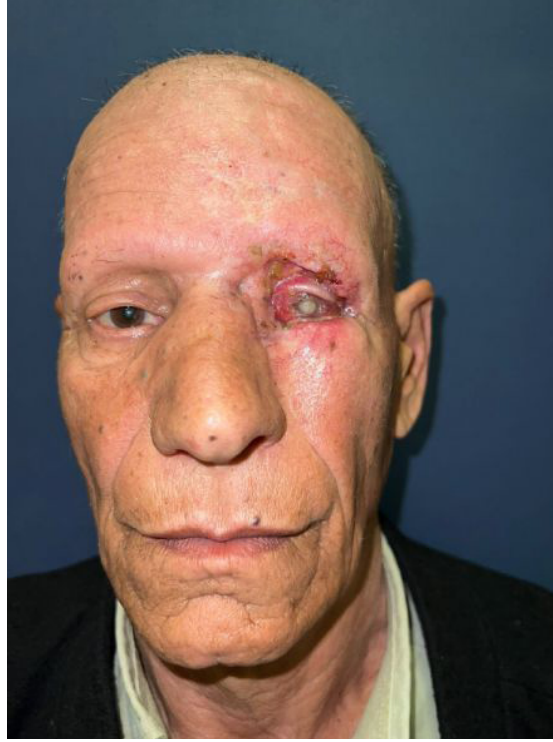


2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Preop



first application and preoperative evaluation



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org

PP-026

A Retrospective Study of Cases in Which Mass Excision Was Performed with a Prediagnosis of Elastofibroma Dorsi

Erk Evren, Merve Özger, Özge Eren, Abdurrahman Ercan Yurttaşer, Mustafa Yılmaz, Haluk Vayvada

The Department of Plastic, Reconstructive and Aesthetic Surgery, Dokuz Eylül University Hospital, İzmir / Türkiye

Elastofibroma dorsi is a rare benign soft tissue tumor, mostly seen in women over 60 years of age. It was first described by Jarvi in 1961. It is named after the proliferation of the elastin component of fibrous tissue and is mostly seen in the dorsal region. In this study, we aim to present the clinical results obtained by retrospectively analysing 18 patients with a prediagnosis of elastofibroma dorsi operated between 2009 and 2021 and to propose a diagnosis and treatment algorithm.

Keywords: Benign tumor, elastofibroma dorsi, fibrolipomatous tissue, lipoma, scapular mass

Figure 1



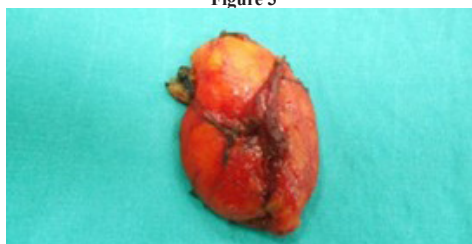
Some case examples.

Figure 2



External view of the mass that changes with shoulder movement.

Figure 3



Intraoperative view of an excised mass.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

PP-027

Microstomia Correction with Gillies-Millard Technique

Hasan Basri Çağlı, Merve Özger, Özge Eren, Ahmet Özdemir, Esra Aydın, Haluk Vayvada, Mustafa Yılmaz

The Department of Plastic, Reconstructive and Aesthetic Surgery, Dokuz Eylül University Hospital, İzmir / Türkiye

Introduction

Microstomia may be congenital or acquired by connective tissue diseases, perioral trauma, burns and surgery. Correction of microstomia can sometimes be difficult and the technique described by Gilles and Millard is a good option with its simple design and low recurrence rate.

Material and Methods

Six patients, who had the surgery with Gilles and Millard commissuroplasty method to open the microstomia, were evaluated in terms of pre- and postoperative change in inter-commissural horizontal distance and midline inter-labial vertical distance. And also, the presence of pre- and postoperative functional problems of the patients were examined.

Results

Six male patients with a mean age of 66.3 years (56-78 years) underwent the surgery with Gilles and Millard commissuroplasty method. Difficulty using dental prosthesis and maintaining oral hygiene were the common functional problems and these improved after surgery except one patient. The mean inter-commissural distance was 33mm (26-47mm) preoperatively and 41mm (33-55mm) postoperatively; the mean inter-labial distance was 29mm (22-37mm) preoperatively and 6mm (31-46mm) postoperatively.

Conclusion

Gilles- Millard technique, that there are few publications about it in the literature, is a good option especially by increasing inter-labial and inter-commissural distances significantly, and providing low recurrence rates and functional improvements.

Keywords: Oral commissuroplasty, Gillies-Millard, lip reconstruction, microstomia, mucosal flap

Figure 1



Preoperative and postoperative sixth month views of the patient with microstomia after tumor surgery.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

PP-028

Rapidly Progressive Non Clostridial Gas Gangrene due to Methicillin-resistant Staphylococcus aureus (MRSA) in a Patient with Nasofarenks Cancer History

Semih Güner, Ömer Saraç, Şeyda Güray Evin

Marmara University School of Medicine, Department of Plastic Reconstructive and Aesthetic Surgery, İstanbul / Türkiye

Introduction

Gas gangren is a rare, life-threatening deep skin infection because it is uncommon and the classic symptom of crepitus does not appear until the infection is advanced, prompt diagnosis requires a high index of suspicion. The infectious process can rapidly spread, causing infection of the fascia, peri-fascial planes and causing a secondary infection of the overlying and underlying skin, soft tissue, and muscle. Immunocompromised patients (diabetics, chronic steroid use), the elderly, and IV drug abusers are more susceptible to gas gangrene and have higher mortality rates. It may occur spontaneously, often with the background of abdominal pathology or malignancy, or as a result of a traumatic injury.

Gas gangrene and necrotizing fasciitis have similar symptoms and causes. They both destroy tissue and can be fatal. The main difference between them is in the types of tissue they typically affect. Necrotizing fasciitis destroys the fat under your skin and the connective tissues. Gas gangrene infects and destroys your blood cells, blood vessels and muscle tissue.

Gas gangrene has two major presentations: traumatic and spontaneous. Traumatic gas gangrene is most commonly caused by Clostridium perfringens (C. perfringens). Traumatic injury accounts for about 70% of gas gangrene cases and about 80% of these are caused by C. perfringens. But we detected MRSA and its rare condition.

Non-clostridial gas gangrene (NCGG) is another rare necrotizing entity that is often associated with an underlying disease, and has a high mortality rate. Clostridial GG has to be differentiated from non-clostridial GG, a term which is used for any gas-forming soft tissue infection caused by bacteria other than clostridia.

Less than 10% of gas gangrene occurs spontaneously in the absence of trauma.

In this study, we present the management of a fulminant gas gangrene involving the abdomen and thorax in a patient with a history of malignancy.

Case Report

A 41-year-old man with pain started behind the right ear 1 week ago. He treated with antibiotics. The patient, whose symptoms did not resolve, applied to the emergency department because of his general condition worsening. His medical history of primary hydrocephaly with ventriculoperitoneal shunt and nasopharyngeal cancer causes received chemotherapy and radiotherapy. According the blood test results procalcitonin was 4.31 µg/L. CRP was 289 mg/L. Hemoglobin was 9.9 g/dL. WBC was 5.8 x10³/µl. After radiological evaluation with computed tomography, air densities in the subcutaneous tissue from the mastoid region to the lumbar region. We promptly made the surgical debridement and ear nose and throat specialist made mastoidectomy and neurosurgery made shunt removal. After that we followed up with NPWT treatment. The patient culture result MRSA and then vancomisin + meropenem treatment was given. We followed the patient in intensive care unit by 37 days and we did postop 20. day and 24. day surgical debridement and NPWT treatment. Day 30 we did primary suturation to close wound. And we discharged the patient with healing.

Discussion

Necrotizing soft tissue infections are a rare clinical entity with a global incidence of approximately 0.4/100,000 per year. Treatment of spontaneous gas gangrene consists of emergent surgical debridement of the entire affected area and parenteral antimicrobial therapy.



The antibiotic therapy should include broad spectrum antimicrobial agents covering not only *Clostridium* spp. but also other aerobic and anaerobic microbial species. Until culture results are available, it is reasonable to cover *Staphylococcus aureus* and *Streptococcus* spp. Gram negative bacilli including *Enterobacteriaceae*, and *Pseudomonas aeruginosa*, and anaerobes such as *Bacteriodes* spp.

Risk factors for developing GG include immunosuppression, diabetes, cancer, and vascular disease.

The location of paraspinal GG the present case differed from other common sites of gas gangrene. GG invades the fascial planes and it spread along the spinal fascial plane. The intergrated system of the thoracolumbar fascia contributed to the rapid spreading of gas gangrene. The other same malignancy cases does aggressive surgical debridement and iv antibiotics treatment and primary closure. We did the approximation suture and NPWT treatment and we let the accumulated infectious liquid drain negative pressure wound therapy has been reported to be useful for infected wounds, including necrotizing fasciitis, in several studies. Shin and Choi reported using NPWT post-debridement for a case of broad necrotizing fasciitis that developed after abdominal liposuction. Shin and Choi's study about necrotizing fasciitis of the posterior neck 4 patients died in their study. We found our study immediate and repetitive surgical debridement is the key to successful therapy and needs to be performed as early as possible. In addition, full substitution with blood products, volume management, and broad and early antibiotic therapy are essential. Timely sec- ond-look operations and reevaluation up to the decision of amputation are necessary. We recommend emergency physicians should be aware of the possibility of gas gangrene in patients with severe pain even if skin color change is not yet evident. If necrotizing soft tissue infections including gas gangrene are suspected, appropriate management by timely surgical debridement and broad-spectrum antimicrobial therapy should be provided in order to improve the clinical outcome.

References

- 1- Phelps JR, Fagan R, Pirela-Cruz MA. A case study of negative pressure wound therapy to manage acute necrotizing fasciitis. *Ostomy Wound Manage* 2006;52:54-9.
- 2- Shin JS, Choi HJ. Application of a silicone sheet in negative-pressure wound therapy to treat an abdominal wall defect after necrotizing fasciitis. *Arch Plast Surg* 2017;44:76-9.
- 3- Misiakos EP, Bagias G, Patapis P, Sotiropoulos D, Kanavidis P, Machairas A. Current concepts in the management of necrotizing fasciitis. *Front Surg*, 2014,
- 4- Clostridial Gas Gangrene - A Rare but Deadly Infection: Case series and Comparison to Other Necrotizing Soft Tissue Infections Maximilian Leiblein, Nils Wagner, Elisabeth H Adam, Johannes Frank, Ingo Marzi, Christoph Nau
- 5- Department of 1Trauma, Hand, and Reconstructive Surgery and 2Anesthesiology, Intensive Care Medicine and Pain Therapy, University Hospital Frankfurt, Frankfurt, Germany

Keywords: gas gangrene, immediate surgical debridement, mrsa, npwt, soft tissue infection



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

PP-029

Lower Limb Amniotic Band Syndrome in a Newborn

Abdurrahman Ercan Yurttaşer, Merve Terzi, Özge Eren, Yunus Can Tokgöz, Salih Can Sezer, Merve Özger, Cenk Demirdöver

The Department of Plastic, Reconstructive and Aesthetic Surgery, Dokuz Eylül University Hospital, İzmir / Türkiye

Amniotic band sequence, also known as constriction band syndrome, is a rare congenital abnormality in association to amniotic bands. In the postnatal period constrictions in the limbs may require an intervention from a plastic surgeon, in order to minimize functional and circulatory pathologies that may occur as a result of amniotic band sequence. Our experience with a patient that had a constriction band on the left lower limb, compatible with Patterson type 2, was outlined in this report. A single stage operation with multiple Z-plasty implementation may be an adequate method of treating such patients for optimal functional and cosmetic outcomes.

Keywords: Amniotic band sequence, amniotic band, constriction band syndrome, Patterson classification, Z-plasty

Figure 1



Preoperative view of the patient.

Figure 2



Postoperative 4th day view of the patient.

Figure 3



Postoperative 6th month views of the patient.



PP-032

Amputation of the Penis as a Severe Complication of Circumcision and Management

Aysel Pashazade, Muhammed Hüseyin Uçar, Süleyman Çeçen, Ramazan Kahveci

Bursa Uludağ University, Faculty of Medicine, Department of Plastic Reconstructive and Aesthetic Surgery, Bursa / Türkiye

Introduction and Objective

Circumcision is the excision of the prepuce at the distal end of the penis. It is performed religiously and traditionally in Jewish, Islamic, and Christian societies.

It is also performed in Turkish society due to religious beliefs. However, as in the cases discussed in this article, it is still performed in non-sterile environments and with poor technique by unqualified non-medical doctors who have not received adequate training.

In this article, we will review the two cases of replantation amputated penis that we performed in our hospital. We will also provide a brief survey of the literature on penile replantation.

Materials and Methods

We will provide a retrospective analysis of two circumcision-related penile amputation cases. Two patients have been treated for circumcision-related complications in our hospital. Data was acquired from the systematic computer-assisted archive that contains surgical operation notes, emergency admission entries, and follow-up records.

Between 2021 and 2023, two pediatric cases were admitted to our emergency department due to circumcision-related penile amputations. These pediatric patients (5 and 8 years old) were presented to the emergency department for distal penile amputation during a home circumcision performed by a medically incompetent circumciser. After referral and thorough examination, the patients were evaluated by pediatricians, pediatric surgeons, and pediatric psychiatrists. Patients were hemodynamically stable on admission.

The first patient was an 8-year-old boy. He was admitted to the emergency service in the 6th hour after the sub-coronal amputation during circumcision. We operated on the patient who had a glans penis amputation due to the circumcision procedure at home and whose amputated glans was fixed to the tip of the penis with catgut at the 6th hour after amputation (Figure 1).

Figure 1: Perioperative situation

The amputated glans was washed with antiseptic solution and saline. After removing the catgut sutures, the total amputated glans penis and distal part of the penis were explored. Penile deep dorsal vein and a dorsal penis were found in both parts.

A 12F Cystofix catheter was inserted suprapubically, and after the urethra was repaired with a 6/0 PDS suture, an 8F silicone catheter was inserted from the amputated glans into the bladder.

To facilitate the anastomosis, the cavernous corpus was sutured with 5/0 PDS under the microscope and repaired. After the cavernous corpus repair, anastomosis of the deep dorsal vein and dorsal penile artery that was found during exploration was performed with appropriate microsurgical technique. After anastomosis, circulation was maintained. The skin was loosely sutured with 5/0 rapid vicryl.

In postoperative follow-up, Dextran 10cc/h for the first seven days, oral Aspirin 2x50mg for seven days, and i.v Pentoxifylline 3x400cc for three days were administered. In order to increase tissue oxygenation and accelerate healing, hyperbaric oxygen therapy was planned. Hyperbaric oxygen therapy was started on postop day three and applied for one month. In the 2nd postoperative month, it was observed that the glans appeared normal, and the circulation was normal in the penile urethra. There was no fistula, and the patient urinated in a normal caliber.



In the second case, an 8-year-old boy was admitted to the emergency service 5 hours after the sub-coronal amputation that developed due to unsuccessful circumcision. The surgical principles applied in the first patient were also used in this patient. Revascularization was achieved at the 8th hour. Despite the edema and pain complaints, hematoma did not develop in this patient.

Results

The patients have been followed for ten months. At the last follow-up of both patients' control, optimally colored glans and urination in normal caliber were achieved, and there was no fistula. (Figure 2).

Figure 2: 10th month of the postoperative period

Discussion and Conclusion

The complication rate of circumcision ranges from 0.2% to 3%. The most common are minor complications such as bleeding and wound infection. Some acute complications include removing too much or too little skin, necrosis due to using cautery, urinary retention, and laceration.(1) There are also severe complications of circumcision, such as urethral injury, necrotizing fasciitis, amputation of part or all of the glans, and amputation of part or all of the penile shaft.(2)(1) Although there are many reports of penile amputation in the literature, there are only a few reports of glans amputation.(2)

The reasons for glans injury during circumcision are not clear.(3) It has been suggested that adhesions between the foreskin and the glans in the ventral part of the penis may cause amputation by partial or complete clamping of the glans.(3)(4) In some countries, circumcision is performed without anesthesia, and amputation may occur because of inadequate immobilization of the child or lack of anatomical knowledge and experience.(5) Another risk factor for glans amputation is the technique used. There are four basic approaches to circumcision: Guillotine-like clamps, Mogen clamps, glans protective clamps (Plastibell and Gomco), and manual approach without a device. Each approach has advantages and disadvantages. (3)(4)

In the circumcision technique commonly used in Türkiye, the foreskin is clamped by pulling the glans' distal tip and excising between the glans and the clamp.(1) In this technique, amputation may occur if the operator or circumciser accidentally clamps the glans together with the skin, as in the cases discussed above.

In 1929, the first case of replantation of an amputated penis was reported by Ehrich.(6) Replantation without microsurgical techniques is performed by connecting large penile structures and using the amputated glans and distal penile structures as composite grafts. The survival of the graft in these procedures depends on the corporal sinusoidal blood flow.(1) In the literature, this technique has been associated with many complications, such as fistula skin necrosis, urethral stricture, sensory loss, and erectile dysfunction.(7)

The first microvascular replantation was reported by Cohen et al. in 1977.(6) As with many microsurgical replantation procedures, the type of injury, the duration of ischemia, the equipment used, and the surgical team's experience are important factors for a successful outcome.(6) microvascular techniques have significantly improved the treatment of penile amputation. The literature has claimed that early restoration of blood flow with microsurgical techniques is the best option for normal erectile function and survival.(3)(6)(7)

The amputated part should be transported under appropriate conditions. Successful replantation cases have been reported up to 8 hours after amputation.(2)(3)(4) End-to-end anastomosis of the urethra and corpus spongiosum, tunica albuginea, Buck's fascia, and skin repair are recommended for older children and adults during replantation in the literature. If possible, artery, vein, and dorsal nerve anastomosis should be performed. Vascular and nerve structures may not be suitable for microsurgical repair in young children and infants. In such cases, the glans as a composite graft may be considered.(1)

Various methods such as leech therapy, pentoxifylline, and Hyperbaric Oxygen have been tried to improve tissue blood supply and wound healing in the postoperative period.(3) Hyperbaric Oxygen (HBO) therapy is performed by inhaling 100% oxygen in a pressurized environment of 1.4 atmospheres. The increase in partial oxygen pressure of HBO contributes to meeting the energy demands required for the healing process, reduces the incidence of infection, and increases angiogenesis and fibroblast proliferation.(1) Psychological complications may occur in the patient and his family. Therefore, it is recommended that patients and their parents receive psychological support.(2)



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

In conclusion, circumcision is a surgical procedure experienced surgeons should perform in a health center under sterile conditions.(8) Severe complications, such as amputation, may occur When not performed under appropriate conditions and by appropriate professionals. Penile injury treatment aims to achieve a normal functional and aesthetic result. Although it is not possible to draw a definite conclusion from a few cases, in light of the findings from the literature and our experience, microsurgical repair is a more effective option in appropriate cases. Given the results from our cases and the literature, HBO treatment may also be beneficial.

References

- 1- Faydaci G, Uğur K, Osman C, Sermin S, Bilal E. Amputation of the glans penis: a rare circumcision complication and successful management with primary anastomosis and hyperbaric oxygen therapy. *Korean J Urol.* 2011 Feb;52(2):147–9.
- 2- Shah A, Shah A. Total Glans Amputation in a Child following Ritual Circumcision - Report of a Case and Review of Literature. *J Indian Assoc Pediatr Surg.* 2023;28(3):256–9.
- 3- Soltani S, Mottaghi M, Jafarpisheh A, Tavakkoli M. Penile Glans Amputation following Circumcision: A Case Report of a Rare Complication. *Case Rep Urol.* 2020;2020:5806987.
- 4- Pippi Salle JL, Jesus LE, Lorenzo AJ, Romão RLP, Figueroa VH, Bağli DJ, et al. Glans amputation during routine neonatal circumcision: mechanism of injury and strategy for prevention. *J Pediatr Urol.* 2013 Dec;9(6 Pt A):763–8.
- 5- Petrella F, Amar S, El-Sherbiny M, Capolicchio JP. Total glans amputation after neonatal circumcision. *Urol case reports.* 2021 Jul;37:101624.
- 6- Kim JH, Park JY, Song YS. Traumatic penile injury: from circumcision injury to penile amputation. *Biomed Res Int.* 2014;2014:375285.
- 7- Riyach O, El Majdoub A, Tazi MF, El Ammari JE, El Fassi MJ, Khallouk A, et al. Successful replantation of an amputated penis: a case report and review of the literature. *J Med Case Rep.* 2014 Apr 9;8:125.
- 8- Ince B, Gundeslioglu AO. A salvage operation for total penis amputation due to circumcision. *Arch Plast Surg.* 2013 May;40(3):247–50.

Keywords: circumcision, amputation, replantation, graft, penis

Figure 1



Perioperative situation

Figure 2



10th month of the postoperative period



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

PP-033

Layered Repair in Extensive Sacral Defects: Bilaminar Gluteal Flap

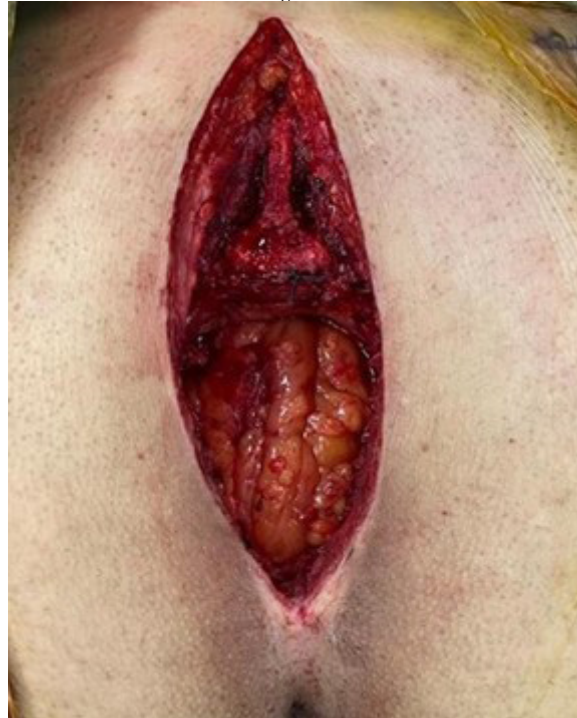
Safa Eren Atalmış, Merve Terzi, Erk Evren, Ali Fuat Görgülü, Cenk Demirdöver

The Department of Plastic, Reconstructive and Aesthetic Surgery, Dokuz Eylül University Hospital, İzmir / Türkiye

The interest in reconstructive approaches to sacral defects after resection of chordoma and malignant tumors invading the sacrum remains current due to challenging factors such as eliminating dead space with well-vascularized tissues resistant to adjuvant radiotherapy, reducing postoperative gait deformities by restoring the origins of the gluteal muscles. Due to the recipient vessel problems in the region, the choice of local flaps is more popular than free flaps, unlike other defect repairs. The bilaminar gluteal flap described by us is more prominent than its alternatives in appropriate cases because it does not require position change, the surgical technique is learnable and sustainable, the potential dead space is eliminated by distributing the dead space between the tissue plans by separating it into layers, the defect can be reconstructed with well-vascularized tissues in accordance with the physiological and anatomical pattern, and it can resist adjuvant radiotherapy treatment.

Keywords: Abdominoperineal resection, bilaminar, chordoma, gluteal flap, Sacral defect, sacrectomy

Figure 1



Post-sacrectomy defect: the rectum is located at the floor of the defect.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Figure 2



After closure.

Figure 3



Relaxation incision can be reconstructed by full thickness skin graft if necessary.



12th

BAPRAS CONGRESS 2023
Selçuklu Convention Center Konya, TÜRKİYE



13 September
Pre Congress Course
14 - 16 September
Congress
www.balkanplasticsurgery.org

PP-034

Surgical Approach of Giant Genital Conyloma Acuminata

Kasım İlker Sandıkçı, Hasan Basri Çağlı, Fatih Berk Ateşşahin, Esra Aydın, Cenk Demirdöver, Adnan Menderes

The Department of Plastic, Reconstructive and Aesthetic Surgery, Dokuz Eylül University Hospital, İzmir / Türkiye

Condyloma acuminata, also known as anogenital wart, is caused by human papilloma virus (HPV) infection. Genital condyloma can rarely be giant with infiltrating adjacent tissues and giant genital condylomas can be difficult to treat. We share our experience about excision and reconstruction of two cases with giant genital condyloma.

Keywords: Condyloma acuminata, genital reconstruction, giant anogenital wart, giant condyloma, HPV

Figure 1



Pre-, intra- and postoperative 6th months views of first case.

Figure 2



Pre- and postoperative 5th years views of second case.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

PP-035

Bilateral Osteochondroma at Mandible Condyle: A Case Report

Furkan Cestepe, Ibrahim Akpınar, Murat Seven, Egehan Güngörmez, Selahattin Galyan, Ömer Faruk Dilek

University of Health Sciences Şişli Hamidiye Etfal Training and Research Hospital Plastik Aesthetic and Reconstructive Surgery Clinic, İstanbul / Türkiye

Introduction And Aim

Osteochondroma is one of the most common bone tumors, but it is rarely seen in the condyle of the mandible. This is because most of the facial bones have intramembranous ossification. Osteochondroma is more common in bones with enchondral ossification (1-3).

Condylar osteochondroma usually occurs early in life, affecting young adults between the ages of 10 and 30, but craniofacial osteochondromas are more common in older women (4).

The exact cause of osteochondroma is unknown.

Excessive growth of condylar osteochondroma manifests clinically some symptoms such as facial asymmetry, temporomandibular joint (TMJ) dysfunctions, malocclusion and even hearing loss (5-8).

Condylar osteochondroma can be confused with condylar hyperplasia (9).

There may be a globular and lobulated mass that often distorts the normal shape of the mandibular condyle and can be distinguished from the long condylar process seen in unilateral hyperplasia. After skeletal growth has stopped, osteochondroma may continue to grow progressively, but growth stops in condylar hyperplasia (9).

In this study, it was aimed to emphasize that condylar osteochondroma should be kept in mind especially in the differential diagnosis due to its rarity.

Material and Method

A 17-year-old male patient applied to our outpatients clinic in May 2023 with the suspicion of bilateral osteochondroma, which emerged as a result of MRI and CT images taken in another outpatients clinic, where he applied with the complaint of toothache.

The patient was followed up for a period of 6 months with physical examination, CT and MRI images and compared with each other.

The patient and his family were given detailed information about the disease and the follow-up process.

Discussion and Results

Osteochondromas, one of the most common tumors of the skeletal system, constitute approximately 35% of all benign tumors. These tumors, consisting of spongy bone surrounded by hyaline cartilage, are connected to the underlying bone by a pedicle or a wide base. Since these tumors grow with cartilage proliferation, there is a possibility of transforming into malignant tumors. When they turn into malignant tumors, there is also a possibility of progression to osteosarcoma despite they are rare. The head of the condyle and the coronoid process of the mandible are the most common sites of osteochondromas involving the mandible (10).



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Condylar osteochondromas are often located on the medial anterior surface of the condyle head. The presence of these tumors within the condyle tended to support the hypothesis of abnormal foci of the epiphyseal cartilage on the bony surface. It is generally agreed that stress in the lateral pterygoid muscle's tendinous insertion region, where focal accumulations of cells with cartilaginous potential exist, causes the development of these tumors. This could also account for the development of osteochondromas in the temporalis muscle stressed coronoid process. The fact that osteochondromas most frequently appear on the medial aspect of the condyle (52 %) further corroborates the idea that the lateral pterygoid muscle tendons' constant stimulation during lateral excursions is the cause of their growth potential (9).

Previously, it was thought that they were resulted from cartilaginous precursor cells herniating as a result of abnormalities in the epiphyseal periosteal cuff, causing the lesion to form. Some claim that precursor cells are moved from the epiphysis to the metaphyseal region of the bone, while others assert that tensional forces at their insertion cause hyperplasia. There was one more assertion that pluripotent cells exist in the periosteum, forming chondroblasts which give rise to osteochondroma (10).

In the first TMJ MR report, it was written that there was an osteochondral lesion with a diameter of 2 mm in the right mandibular condyle and a diameter of 3 mm in the left mandibular condyle.

In his examination, no finding that could be caused by condylar osteochondroma such as facial asymmetry, malocclusion, hearing problem, etc. was found. TMJ movements were normal.

During the follow-ups, the patient did not have any complaints and the osteochondroma was found to be stable in the images taken.

Bilateral mandibular condylar osteochondroma presenting as an asymptomatic mass is rare. Clinical spectrum of these masses should be understood well. CT plays a very important role in correct diagnosis, implementation of the correct treatment plan and prevention of possible complications of malignant transformation (1).

Treatment includes follow-up for asymptomatic or minimally symptomatic small lesions, resection and supportive care for larger ones. When the osteochondroma involves most of the mandibular condyle, total condylectomy or local resection of the lesion and condyle replacement can be performed. However, if the tumor affects only a limited part of the condyle surface, the remaining part of the condyle can be preserved and reshaped (4).

Keywords: mandible, osteochondroma, tumor, temporomandibular joint, condyle



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

PP-036

Our Approach to Fournier Gangrene Patients

Sabri Öztürk, Furkan Cestepe, Alper Taşan, Murat Seven, Aleyna Bulat, Yunus Emre Atmaca, Kamuran Zeynep Sevim

*University of Health Sciences Şişli Hamidiye Etfal Training and Research Hospital Plastic Aesthetic and Reconstructive Surgery Clinic
İstanbul / Türkiye*

Introduction and Purpose

Fournier's gangrene is a rare disease with significant complications and high mortality. It spreads to the superficial and deep fascial layers in the perineal, genital or perianal areas. It is a rapidly progressive infection causing multiple organ failure and septic shock. It was described by French dermatologist Jean Alfred Fournier in 1883. It is a polymicrobial infection caused by many organisms including aerobic and anaerobic species such as *Escherichia coli* and *Bacteroides fragilis*. Even with aggressive treatment, the current mortality rate is approximately 40%(1).

Our aim in conducting this study is to prevent the disease, which is rarely seen in the community and has a high mortality rate and rapid course, from being overlooked among other differential diagnoses. We aim to minimize mortality and morbidity by recognizing the disease at an early stage and intervening early.

Materiala and Methods

In this study, we retrospectively evaluated 17 patients with Fournier gangrene between January 2016 and July 2023 at the Ministry of Health University Sisli Hamidiye Etfal Training and Research Hospital between January 2016 and July 2023, taking into account age, number of debridements performed, length of hospitalization, size of the defect and comorbidities. In all patients, the wound was cleaned with debridement, VAC and antibiotherapy before surgery.

15 of 17 patients (88.2%) were male. 11 patients (64.7%) had DM and 6 patients (35.3%) had HT. Only 4 of these patients (23.5%) were non-smokers.

As reconstruction in the patients;

- 6 patients with CABG
- 2 patients TKDG
- 5 patients MCFAP Flap
- 2 Patient Rotation Flap (MCFAP Flap and Rotation Flap were performed together in 1 patient)
- 1 Patient Fasciocutaneous Flap
- 1 Patient Primary suturing

The mean length of hospitalization was 15.7 days.

All patients were operated under general anesthesia in the lithotomy position. In patients who underwent MCFAP flap, perforators were marked with hand doppler. The flap was designed according to the size of the defect and the localization of the perforators.

The gracilis muscle and the perforators on the muscle were found through an incision made on the posteroinferior edge of the flap. The flap was lifted from the subfascial plane, rotated 180 degrees and adapted to the defect. In three patients, the donor site was closed with primary closure and in four patients with CABG.

The ipsilateral leg was always kept in adduction.

The patients were followed up in the plastic surgery service, not in the anesthesia intensive care unit, considering their general condition. Postoperative flap follow-up was performed by clinical observation and conventional Doppler ultrasonography or a combination of the two. Flaps were evaluated for color, hemorrhage, capillary filling, turgor and temperature.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Discussion

Although Fournier's gangrene can affect people of any age and gender, it is most common in men between the ages of 30 and 60. Advanced age is a risk factor. It can develop in people without comorbidities or in patients with comorbidities such as diabetes, alcoholism, atherosclerosis, peripheral arterial disease, malnutrition, prostate cancer, HIV, leukemia and liver disease. People with multiple comorbidities are more likely to develop the disease and have a worse prognosis(1). The Colles is the most important superficial fascia of the perineum.(5)The infectious and inflammatory process spreads rapidly along the fasciae of Dartos, Colles and Scarpa, involving layers of the abdominal wall. Early diagnosis and treatment of the disease with a high risk of death is very important. Because the fact that it appears to have a good prognosis in the beginning leads to misdiagnosis(2). The earliest clinical signs of the disease include perineal pain, perianal pain, pruritus, edema and indistinct limited erythema. As the infection continues to spread along the fascia plane at a rate of 1 inch/hour, the erythema darkens and bullae appear. The diagnosis of Fournier gangrene is based primarily on clinical findings of fluctuance, crepitation, localized tenderness, and genital and perineal wounds. Although the diagnosis is easy when lesions are present, failure to examine the genital organs, especially in elderly or frail patients, may result in misdiagnosis. Common laboratory findings are non-specific. Anemia, leukocytosis, thrombocytopenia, electrolyte abnormalities, hyperglycemia, elevated serum creatinine level, azotemia and hypoalbuminemia may be present (3).Most infections in patients with Fournier's gangrene originate from the genitourinary system, anorectal and external genital soft tissues. According to pathogenic microorganisms, necrotizing fasciitis can be roughly divided into four types: Type I (polymicrobial), Type II (monomicrobial), Type III (Clostridium) and Type IV (fungal). Type I is the most common, accounting for around 80%, which is always more dangerous for the elderly with co-morbidities (such as diabetes, chronic kidney disease and alcoholism).

Computed tomography is the first-choice imaging test for the evaluation of the disease, as it has the advantages of high sensitivity (88.5%), high specificity (93.3%) and rapid results. Contrast-enhanced CT shows the extent of fascia involvement better before surgery. It can be determined whether the lesion originates from the rectum. The cornerstone of treatment is rapid resuscitation of critically ill patients, broad-spectrum antibiotics and early surgical debridement. The positive effects of some adjunctive therapies (hyperbaric oxygen therapy, vacuum-assisted closure), which should not be ignored in the management of Fournier gangrene, have been proven in practice (4).

Conclusion

Postoperative reconstruction options should restore function rapidly with scope, good cosmetic outcome, low morbidity and mortality. Testicular salvage is usually achieved using techniques such as the use of thigh pouches, skin grafts, fasciocutaneous or myocutaneous flaps(5). In addition, reconstruction options should be chosen considering the patient's age, general condition, comorbidities and functionality.

Keywords: fournier gangrene, reconstruction, infection, skin graft, debridement



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 15 September
Congress

PP-038

Reconstruction Procedures For Tissue Defects Occuring After Congenital Scoliosis Repair

Saruhan Mahmutoglu, Ismail Ince, Aleyna Akbulat, Kamuran Zeynep Sevim, Soysal Baş

Şişli Hamidiye Etfal Training And Research Hospital, Istanbul / Türkiye

Introduction

Non-syndromic congenital vertebral malformations are a serious health issue concerning spinal deformities that may accompany conditions such as congenital scoliosis or kyphosis. Syndromic vertebral malformations are most commonly encountered in Klippel-Feil syndrome, Alagille syndrome, spondylothoracic dysostosis, and Goldenhar syndrome (3). In such diseases, the closure of tissue defects that occur after surgical procedures in the lumbosacral region presents a challenging task for plastic surgeons. This study aims to present the reconstruction procedures applied to close tissue defects in patients operated on for scoliosis in our clinic.

Material and Methods

Three patients with tissue defects in the lumbosacral region after scoliosis repair were included in the study at our clinic between 2019 and 2022. The ages of the patients were 6, 30, and 35, respectively, and all of them were female patients.

Results

The 6-year-old patient included in the study had paraplegia due to meningocele and presented with scoliosis showing approximately 45° lateral angulation in the lumbar mid-region, along with a 7 cm scar from the repair of the meningocele.

The 30-year-old female patient had undergone surgery for scoliosis at the age of 3 at an external center. Due to the need for revision, new fixators were adapted to the patient two years ago at an external center. Subsequently, a tissue defect developed over the exposed fixator. The 35-year-old female patient had previously undergone surgery for scoliosis at the age of 1 and required revision approximately 1 year ago at an external center, during which new fixators were placed. Afterward, a tissue defect developed over the exposed fixator. The patient underwent three debridement procedures and received VAC therapy to treat the defect, but it did not close, leading to referral to our clinic. For the 30 and 35-year-old female patients, we performed reconstruction using a latissimus dorsi muscle flap and bilateral bipedicle skin flap to repair the tissue defects. The 6-year-old female patient was scheduled for posterior segmental instrumentation and total corpectomy of the L3 vertebra by the orthopedic clinic, and a tissue defect to develop after the surgery was planned by us with dimensions of 7 cm in width and 11 cm in length. Vertical-axis bipedicle lumbosacral fasciocutaneous flaps were chosen for the repair, using a two-stage delay method. In the first stage, under general anesthesia, the planned bipedicle fasciocutaneous flaps of 7x11 cm were subjected to a surgical delay procedure. Approximately 3 weeks after the delay process, following the scoliosis repair with posterior segmental instrumentation and total corpectomy of the L3 vertebra by the orthopedic clinic, the tissue overlying the defect close to the midline was de-epithelialized. After de-epithelialization, the resulting 7x10 cm defect was repaired by elevating the flaps and suturing them in the midline. The donor site on the right side was covered with a partial-thickness skin graft taken from the posterior aspect of the right thigh. None of the patients experienced any major or minor complications during the postoperative period, such as flap circulation problems, cerebrospinal fluid leakage, or midline detachment.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Discussion and Conclusion

Latissimus dorsi flaps based on secondary segmental arteries, also known as “Reverse” or “Distally-based” latissimus dorsi flaps, have been used to reconstruct defects in the spinal, lumbar, and upper sacral regions. In most cases, the skin component is not necessary; instead, the muscle flap is raised and transposed to the new site. The reverse turnover flap of the latissimus dorsi muscle allows successful repair of large defects in the lumbar region without the need for microvascular anastomosis. In the case of the patient with a tissue defect after scoliosis at the age of 6, we chose not to use a musculocutaneous flap to avoid eliminating the possibility of using crutches in the future since the patient was already paraplegic. Particularly, the reconstruction with the Superior Gluteal Arter Perforator flap could have been preferred. Considering the patient’s age, we opted for a safer and conventional repair by using a 2-stage bipedicle lumbosacral fasciocutaneous flap, taking into account the possibility of insufficient perforator arteries.

Keywords: scoliosis, latissimus dorsi, scoliosis defects, fasciocutaneous flap, bipedicle flaps



PP-039

Propylthiouracil-Induced Necrotizing Vasculitis

Nuh Evin, Fatih Osman Demir

Plastic, Reconstructive and Aesthetic Surgery, Bezmialem Vakıf University, İstanbul / Türkiye

Propylthiouracil-induced vasculitis is a rare anti-neutrophilic cytoplasmic antibody-associated vasculitis involving small vessels. The patients are often present with constitutional symptoms such as skin rash, fever, sore throat, and joint pain, and rarely with systemic symptoms such as muscle pain, weakness, weight loss, conjunctival and mucosal irritation. Early diagnosis with the help of clinical findings, laboratory and serological markers, discontinuation of propylthiouracil and immunosuppressive treatments are beneficial. In this study, a case of necrotizing vasculitis after PTU is presented, and the literature is reviewed.

Introduction

Propylthiouracil (PTU) is used to treat hyperthyroidism by inhibiting thyroid hormone synthesis, but it is responsible for anti-neutrophilic cytoplasmic antibody (ANCA) associated vasculitis involving small vessels.(1) Vasculitis usually regresses after discontinuation of PTU. However, it can cause morbidity and mortality without early diagnosis and treatment

This study presents a case of PTU-induced necrotizing vasculitis and reviews the literature.

Case Presentation

A 52-year-old female patient presented with widespread, foul-smelling, and necrotic wounds with purulent drainage on her body.

She had a history of type-2 diabetes for 20 years, hypertension for 13 years, chronic asthma and Graves' disease for 10 years. She changed thyroid medications a year ago but hasn't used them regularly. She described intermittent fever, palpitation, sweating, diarrhea, itching and small sores for the last 3 months.

Her father had type-2 diabetes and her aunt had Graves' disease and ophthalmopathy.

The patient was using PTU 3x100 mg, ramipril 10 mg + hydrochlorothiazide 12.5 mg, insulin short-acting 3x18 IU and long-acting 1x36 IU, fluticasone propionate 500 mcg + salmeterol 50 mcg discus.

On physical examination, she was cooperative but weak. She had a hoarse voice, palpable thyroid gland, extensive superficial ulcers on the oral mucosa, and necrotic wounds of 3x2 cm on the nose, 1x1 and 2x1 cm on the right and left ear helixes, 8x10 cm on the right forearm, 5x7 cm on the left forearm, 22x26 cm on the right leg, circular 25x30 cm on the left leg. Vital signs were recorded, and blood samples were taken. Urinalysis, ECG, lung x-ray, abdominal and neck ultrasonography, blood, throat and deep wound cultures, diagnostic skin biopsy, general surgery and endocrinology consultations were planned (Table 1).

Result

Her vitals were insignificant apart from 37.6 Co temperature, 155/70 mmHg blood pressure and 23 breaths/min respiratory rate. Blood tests revealed anemia of chronic disease, neutrophil-dominated leukocytosis, increased levels of CRP, sedimentation and liver function tests, hyperglycemia, and hypoalbuminemia. TSH value was low, fT3, fT4, TRab, TPO-ab and TG-ab values were abnormally high and consistent with Graves' Disease. Perinuclear-ANCA (p-ANCA) and cytoplasmic-ANCA (c-ANCA) levels showed elevation. Vancomycin-sensitive, methicillin-resistant S.aureus was isolated in tissue culture, leading to the application of contact isolation measures. There was broncho-vascular prominence in the chest X-ray. On the neck ultrasonography, there was a 5.3x7.1 cm, hypertrophic, heterogeneous, hypoechoic, thyroid gland with increased vascularity and a 'thyroid inferno' image, which has a diagnostic value for Graves' disease. Hematoxylin-Eosin staining of biopsies showed leukocytoclastic vasculitis characterized by neutrophil infiltration in vessel walls and occluded dermal vessel lumens

The medical team diagnosed the patient with PTU-induced ANCA-associated leukocytoclastic vasculitis and provided multidisciplinary management.



The treatment included 10mg/day oral Methimazole, 1mg/kg/day steroid, 2 units erythrocyte suspension, albumin and calcium infusion and a protein-rich diet. The medical team performed wound care with daily dressing and serial bedside debridement. Major surgical debridement was avoided. In the 4th week of the treatment, the general condition and blood values improved, and the necrotic tissues were replaced by partial granulation tissue. After the patient became euthyroid, the general surgery performed a total thyroidectomy. In the early postoperative period, the general condition of the patient deteriorated, and the patient died due to surgical site infection, sepsis, respiratory and cardiac failure.

Discussion

PTU-induced vasculitis was first described by Stankus and Johnson(2), 1992, in a female patient using PTU for Graves' Disease. Subsequently, Dolman et al.(3) reported PTU-related vasculitis in 6 patients with hyperthyroidism. Zhao et al.(4) reported vasculitis in 28.6% and MPO-ANCA positivity in 22.6% of PTU users. In 2001, Noh et al.(5) published a large series of 102 patients and showed MPO-ANCA positivity frequency and clinical manifestations in PTU users, and MPO-ANCA positivity was observed within an average of 15 months in 3 of 73 patients. Gunton et al.(6) reported that the incidence of ANCA positivity after anti-thyroid drugs was 10% and the prevalence was 26.7% in the ANCA-negative study group. Therefore, extremely high p-ANCA/c-ANCA levels and milder clinical vasculitis onset are helpful in diagnosis.(7)

While it can be seen as early as 1-2 weeks after PTU, there are cases where vasculitis has been reported 13 years later.(8) Its relation with age has not been shown, but it has been associated with the female gender.(9) The skin is the most affected organ, but rarely multiple-system involvement can be seen. Patients are often present with constitutional symptoms such as fever, skin rash, sore throat, and joint pain, and with systemic symptoms such as muscle pain, fatigue, weight loss, conjunctival and mucosal irritation, and hemoptysis. While constitutional symptoms usually regress upon discontinuation of the drug, in the absence of regression or case of systemic involvement, it is recommended to start high-dose steroids and/or cyclophosphamide, and rituximab to suppress the immune response and to gradually reduce according to the response to treatment.(9) In our study, an adult female patient presented with constitutional and systemic manifestations in the 3rd month after PTU use. After immediately discontinuing PTU, the patient showed significant improvement in clinical and laboratory values following immunosuppressive steroid treatment.

In PTU-induced vasculitis, the first symptoms are usually observed on the skin. The distal ends of the extremities, face, chest, and characteristically the earlobes and helixes are the most frequently involved sites. Acral pruritic lesions, livedoid pattern, and hemorrhagic bullae progressing to necrosis in the center are observed in these regions.(9) Our patient also had skin involvement and full-thickness necrosis on the extremities, nose and ears.

The kidneys are the most frequently affected internal organ in PTU-induced vasculitis. When there is renal involvement, only the discontinuation of PTU can be sufficient to improve the clinic. However, if there is rapidly progressive glomerulonephritis, immunosuppressives should be added to the treatment.(10) Complications such as glomerulonephritis due to kidney involvement, pulmonary hemorrhage or pleural effusion due to lung involvement may occur. Our patient did not have symptomatic internal organ involvement.

Conclusion

PTU-induced vasculitis is a rare but fatal disease. Early diagnosis, drug discontinuation, and immune-suppressive treatments reduce morbidity and mortality.

Legends of Figure and Table

Figure 1. a, b) First presentation of the patient with a hypertrophic thyroid gland, necrotic sores on the tip of the nose, the bilateral helix and crus of the auricles. c) After medical treatment, daily dressing, wound care and bedside serial debridement, regression in active vasculitis and a decrease in necrotic tissues were observed.

Table 1. The patient's blood laboratory results.



References

1. Merkel PA. Drug-induced vasculitis. *Rheum Dis Clin North Am*. 2001;27(4):849-62. doi: 10.1016/s0889-857x(05)70239-8. PubMed PMID: 11723768.
2. Stankus CSJ, Johnson NT. Propylthiouracil-induced hypersensitivity vasculitis presenting as respiratory failure. *Chest*. 1992;102(5):1595-6.
3. Dolman KM, von dem Borne AK, Goldschmeding R, Gans R, Donker A, Vervaat TJ, et al. Vasculitis and antineutrophil cytoplasmic autoantibodies associated with propylthiouracil therapy. *The Lancet*. 1993;342(8872):651-2.
4. Wang C, Gou S-j, Xu P-c, Zhao M-h, Chen M. Epitope analysis of anti-myeloperoxidase antibodies in propylthiouracil-induced antineutrophil cytoplasmic antibody-associated vasculitis. *Arthritis research & therapy*. 2013;15:1-7.
5. Noh JY, Asari T, Hamada N, Makino F, Ishikawa N, Abe Y, et al. Frequency of appearance of myeloperoxidase-antineutrophil cytoplasmic antibody (MPO-ANCA) in Graves' disease patients treated with propylthiouracil and the relationship between MPO-ANCA and clinical manifestations. *Clinical endocrinology*. 2001;54(5):651-4.
6. Gunton JE, Stiel J, Clifton-Bligh P, Wilmschurst E, McElduff A. Prevalence of positive anti-neutrophil cytoplasmic antibody (ANCA) in patients receiving anti-thyroid medication. *European Journal of Endocrinology*. 2000;142(6):587-.
7. Bonaci-Nikolic B, Nikolic MM, Andrejevic S, Zoric S, Bukilica M. Antineutrophil cytoplasmic antibody (ANCA)-associated autoimmune diseases induced by antithyroid drugs: comparison with idiopathic ANCA vasculitides. *Arthritis research & therapy*. 2005;7(5):1-10.
8. Chen B, Yang X, Sun S, Guo W, Li X, Zhang L, et al. Propylthiouracil-induced vasculitis with alveolar hemorrhage confirmed by clinical, laboratory, computed tomography, and bronchoscopy Findings: a case report and literature review. *Iranian Red Crescent Medical Journal*. 2016;18(4).
9. Almeida MS, Ramalho C, Gomes F, do Rosário Ginga M, Vilchez J, Vilchez J. Propylthiouracil-Induced Skin Vasculitis. *Cureus*. 2022;14(7).
10. Chen Y, Bao H, Liu Z, Zhang H, Zeng C, Liu Z, et al. Clinico-pathological features and outcomes of patients with propylthiouracil-associated ANCA vasculitis with renal involvement. *Journal of Nephrology*. 2014;27:159-64.

Keywords: ANCA, anti-neutrophilic cytoplasmic antibody, propylthiouracil, skin necrosis, vasculitis

The Patient's Physical Examination Findings



a, b) First presentation of the patient with a hypertrophic thyroid gland, necrotic sores on the tip of the nose, the bilateral helix and crus of the auricles. c) After medical treatment, daily dressing, wound care and bedside serial debridement, regression in active vasculitis and a decrease in necrotic tissues were observed.

The Patient's Blood Sample Results

Test	Initial Results	Follow-up Results
Hemoglobin (g/dl)	8.2	10.7
WBC (103/uL)	20.861	9.320
Neutrophil (%)	79.6	58.4
Thrombocyte (103/uL)	223	249
CRP (mg/dl)	189	18
Erythrocyte sedimentation rate (mm/hour)	91	28
HbA1C (%)	7.3	-
TSH (mIU/L)	0.01	0.06
sT3 (pmol/L)	18.2	8.3
sT4 (ng/dl)	4.4	1.9
TRab (IU/L)	12.3	2.9
TPO-Ab (UI/ml)	118.6	29
Tg-Ab (UI/ml)	88.4	24
p-ANCA (RU/mL)	141	-
c-ANCA (RU/mL)	26.4	-
Glucose (mg/dl)	166	108
Albumin (g/dl)	2.7	3.4
AST (U/L)	94	49
ALT (U/L)	82	53
LDH (U/L)	362	261
ALP (IU/L)	97	56
Creatinine (mg/dl)	1.1	0.97
BUN (mg/dl)	40	38
Parathormone (pg/dl)	15.8	-
Calcium (mg/dl)	8.2	9.6

The patient's blood laboratory results before and after treatment.



PP-040

Cutaneous Necrosis Following Endovascular Embolization by Using Ethylene-Vinyl Alcohol Copolymer for Arterio-Venous Malformations

Yasin Vural, Nuh Evin, Selma Sönmez

Department of Plastic, Reconstructive and Aesthetic Surgery, Bezmialem Vakıf University, İstanbul / Türkiye

Introduction and Aim

Arteriovenous malformation (AVM) is a vascular malformation characterized by direct communication between primitive reticular networks of dysplastic vessels and high-velocity blood flow from the arterial side to the low-resistance venous side. Although its pathophysiology is still unclear, it is believed to result from irregular connections between arteries and veins during embryological development. AVM can be seen in any part of the body, mostly the head and neck. It may be located intracranially or extracranially. The prevalence rate of intracranial AVM in adults is 15-18/100,000. Extracranial AVM's prevalence is unclear, but it is 20 times less common than intracranial AVMs.[1]

60% of AVMs are present at birth. Most venous malformations progress over time. AVM may cause a number of complications such as bleeding, ulceration, pain, deformity and contour disorders, and heart failure in the clinic. Surgical excision is one of the classical treatments in the treatment of AVM. However, in most cases, total excision is difficult and symptomatic recurrences may occur. Therefore, minimally invasive sclerotherapy is an important alternative to surgical treatment. Various sclerosing agents are used in sclerotherapy. The mechanism of action of most of them is to form a thrombus containing erythrocytes and to regress the lesion by constricting and re-canalizing the vascular structures after the sclerosing agent. However, local complications such as superficial ulcers, deep necrosis, cutaneous fistula and pigmentation may occur after sclerotherapy. Systemic complications such as acute kidney disease, rhabdomyolysis, acute pancreatitis, and pulmonary embolism may also be seen. However, the mortality rate is low.

In this study, we aimed to review the literature and the management of an AVM case that developed cutaneous necrosis after ethylene vinyl alcohol copolymer (EVOH) embolization.

Patient and Methods

A 32-year-old male patient presented with a complaint of soreness and pain in the left gluteal region. In his story; The patient's painful mass in the form of a spot located in the left gluteal region since birth was diagnosed as AVM 6 months ago. Minimally invasive embolization of EVOH was applied to the AVM in the interventional radiology department twice, 2 months apart. Under local anesthesia, the right femoral artery was entered with a retrograde 5F introducer, and AVM with multiple feeders was determined in the run taken from the left common iliac, internal iliac, and common femoral artery. It has been observed that the AVM has an arterial component from the internal iliac artery. The feeders of the AVM in the internal iliac artery were embolized with an EVOH-based liquid embolizing agent as a treatment with a microcatheter. After the second procedure, the pain developed on the same day, discoloration and darkening after 1 day, and discharge and wound developed after 5 days. The patient consulted us in the 2nd week.

In physical examination; There was a wound of approximately 8x10 cm in size, with dry necrosis, discharge, and foul smell, in the inferolateral of the left gluteal region and adjacent to the left trochanteric region. The left gluteal region was edematous and inflamed, and there was an increase in temperature (Figure 1a). The patient had difficulty walking and was limping. The patient's Lower Extremity Functional Scale (LEFS) score was 49.

In laboratory tests of the patient, hemoglobin: 11.2 g/dl, leukocytes 26,460 10³/uL (76.4% neutrophilic, 13.8% lymphocytes, 7.6% monocytes, 2.2% eosinophils), CRP 21.09 mg/L, procalcitonin 0.61 ng /mL, INR:1.07, PTZ detected for 11.8 sec. MRI examination revealed an enlarged tortuous vascular structure measuring 108x35 mm in the subcutaneous tissue in the postero-lateral part of the left gluteal region and 55x42 mm in the inferolateral part of the left gluteal muscles, as well as reactive changes secondary to the procedure, ischemic and infected areas (Figure 2a-b).



The patient was offered surgical debridement under general anesthesia followed by reconstruction after local wound care. With the informed consent of the patient, all necrotic areas were debrided, the vascular lesion was excised, the bleeding tissues in the defect area were contracted with pledget sutures, and careful bleeding was controlled. The specimen was sent for pathological examination, deep tissue culture was sent. The defect was reconstructed with a local rotation-advance of wound edge (Figure 1b). A pensore drain was placed and pressure dressing was applied. The drain was removed on post-op day 1, he was discharged with oral analgesic and empirical antibiotic. The patient was followed closely with daily dressings. In the pathological analysis of the specimen; epidermal necrosis, diffuse hemorrhagic infarct, subcutaneous cavernous and thrombosed vascular structures, inflamed fibro adipose tissues, and inflammatory granulation tissue were detected.

The patient's sutures were removed 2 weeks later. The patient was followed for approximately 12 months, and the surgical field healed without any problems. The LEFS score was 75 at 12 months after surgery, and the patient had no functional limitations affecting work and daily life.

Discussion

Minimally invasive embolization procedures in the treatment of AVM can be performed easily under local anesthesia and provide the opportunity to return to work in the early period after the procedure. Thanks to these advantages, it has replaced surgical treatment in recent years. However, local complications are quite common after repeated sclerotherapeutic procedures. Surgical treatment is often required in the management of these complications.

If we divide peripheral AVMs into truncal and extratruncal according to their settlements; Extratruncal AVMs consisting of non-fistula lesions with a treatable nidus are not amenable to surgical treatment because of extensive infiltration and are usually treated by embolization. Limited (localized) extratruncal AVMs are suitable for surgical treatment and can be treated with surgical treatment followed by preoperative embolization. The embolization process performed 24 hours before the surgical treatment is beneficial in providing bleeding control during the surgery and reducing the lesion and the defect area after excision. Truncal AVMs, which are mostly fistula lesions without a direct connection between an artery and a vein, can be treated with surgical excision in combination with preoperative embolo/sclerotherapy, when the lesion is a superficial fistula suitable for surgical treatment. Treating surgically inaccessible, deeply located fistulas with non-surgical embolo/sclerotherapy is appropriate.

Ulceration, necrosis, fistula, and pigmentation of the skin are the most common minor complications of embolo/sclerotherapy. Ethanol is one of the most commonly used sclerosing agents in the treatment of AVM. Other commonly used sclerosing agents are ethanolamine oleate, polidocanol, sodium tetradecyl sulfate, sodium morrhuate, and bleomycin. Ethanol is the agent that causes cutaneous necrosis with the highest incidence among sclerotic agents.[2] Cutaneous necrosis often has limited sequelae and is associated with sclerosing substance extravasation. When sclerosing substance extravasation occurs, dilution should be made immediately.

EVOH is one of the most commonly used liquid embolizing agents, this agent was also used in our patient. In many studies, EVOH provides more controlled devascularization compared to other commonly used conventional liquid embolizing agents such as N-butyl cyanoacrylate (n-BCA) in embolization treatments. The short polymerization time of n-BCA limits the amount of material that can be injected into the lesion, thus requiring the placement of multiple needles to completely fill the lesion. In contrast, with the longer polymerization time of EVOH, it is possible to inject the material in a more controlled manner over a longer time frame, thus filling the tumor more completely.

This may require fewer needle placements, thus possibly decreasing the risk of local complications from needle placement.[3] Repetitive sessions are often required in embolization treatments, and in cases where embolization treatments do not completely cure, residual fibrosis and phleboliths should be surgically debrided.[2]

Park et al. presented that skin necrosis was the most common complication in 48 (10.7%) of 449 patients, and bulla formation was the second most common complication in 30 (6.7%) patients after the endovascular treatment with ethanol. Nerve damage was reported in 13 (2.9%). Healing without sequelae was observed in 41 (85%) of 48 skin necroses that occurred between 1-4 months with conservative methods. Escharotomy was performed in 4 lesions and surgical amputation in 3 lesions (finger, right hand, right arm). Recovery without sequelae was observed at a rate of 100% in cases of bullae formation. Improvement was observed in 12 of 13 patients who developed nerve damage. It was observed that all distal emboli developed in the patients during the treatment disappeared after thrombolysis, and all venous thrombi resolved spontaneously during follow-up Doppler ultrasound. Patients who developed acute kidney disease and rhabdomyolysis were treated with hemodialysis and complete recovery was observed. In patients who developed acute pancreatitis and pulmonary embolism, recovery was observed with



12th

BAPRAS CONGRESS

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

Selçuklu Convention Center Konya, TÜRKİYE

conservative treatment.[4]

Recently published studies have found a 9% peri-operative and 32% post-operative complication rate and a 17% major complication rate for EVOH embolization in peripheral AVMs, with significantly fewer complications identified in extracranial areas such as the extremities compared to pure ethanol. Non-adhesive, polymerized EVOH-based liquid embolic agents have a lower tendency to migrate outside of the target site. Compared with ethanol, they cause a decrease in inflammatory reactions in the vessel wall and tend to remain in the intravascular space with low reaction in the surrounding interstitium. EVOH offers options that can be used in different formulations with different degrees of viscosity and radio opacity.[5]

In AVM, lesion recurrence rate was found to be 57% within 1 year after surgical resection, and 86% within 1 year after isolated sclerotherapy and embolization treatments.[6] Embolization has been the first treatment option in deep-seated forms of AVMs where the parenchymal component is low, the fistula between the artery and vein is prominent, and surgery is not very possible. Management of local complications that develop after embolization, which is primarily encountered, is easier for lesions that have not been embolized. Although embolization procedures to the AVM create microthrombi within the vascular bundle, it also causes necrotic changes in the tissues fed from that vascular network. Even if these necrotic tissues are debrided with surgical intervention, the dense vascular network consistent with the underlying venous malformation shows a high bleeding tendency. In order to provide full control of bleeding during the operation, closure of the tissue with pledget sutures provides significant benefit. In our case, an AVM with skin necrosis and an ulcerated wound was observed after embolization. In the outpatient clinic evaluation of the patient after embolization, a pledget suture was used to control bleeding, when advanced bleeding was observed in the vascular lesion during surgical debridement due to cutaneous necrosis. As in other studies, complete recovery of skin necrosis was observed in most patients after appropriate debridement and appropriate dressing follow-up.

References

- 1- Zou Y, Qiao C, Lin X, Jin Y, Hua C, Yang X, Chen H, Ma G: Clinical Course of Extracranial Arteriovenous Malformations. J Craniofac Surg 2020, 31(2):372-376.
- 2- Qiu Y, Chen H, Lin X, Hu X, Jin Y, Ma G: Outcomes and complications of sclerotherapy for venous malformations. Vasc Endovascular Surg 2013, 47(6):454-461.
- 3- Gemmete JJ, Chaudhary N, Pandey A, Gandhi D, Sullivan SE, Marentette LJ, Chepeha DB, Ansari SA: Usefulness of percutaneously injected ethylene-vinyl alcohol copolymer in conjunction with standard endovascular embolization techniques for preoperative devascularization of hypervascular head and neck tumors: technique, initial experience, and correlation with surgical observations. AJNR Am J Neuroradiol 2010, 31(5):961-966.
- 4- Park KB, Do YS, Kim DI, Kim YW, Park HS, Shin SW, Cho SK, Hyun DH, Choo SW: Endovascular treatment results and risk factors for complications of body and extremity arteriovenous malformations. J Vasc Surg 2019, 69(4):1207-1218.
- 5- Schmidt VF, Masthoff M, Goldann C, Ehrl D, Deniz S, Öcal O, Seidensticker M, Ricke J, Köhler M, Brill R et al: Image-guided embolization of arteriovenous malformations of the hand using Ethylene-vinyl Alcohol Copolymer. Diagn Interv Radiol 2022, 28(5):486-494.
- 6- Chelliah MP, Do HM, Zinn Z, Patel V, Jeng M, Khosla RK, Truong MT, Marqueling A, Teng JMC: Management of Complex Arteriovenous Malformations Using a Novel Combination Therapeutic Algorithm. JAMA Dermatol 2018, 154(11):1316-1319.

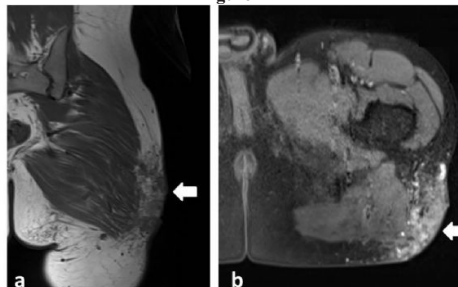
Keywords: Arterio-Venous Malformation, AVM, cutaneous necrosis, endovascular embolization, sclerotherapy

Figure 1



a) Pre-operative image, b) Intra-operative image, c) Post-operative 12th month image.

Figure 2



Pre-operative coronal (a) and axial (b) image of the MRI.



12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE

2023

13 September
Pre Congress Course
14 - 16 September
Congress



PP-041

Hair-Thread Tourniquet Syndrome: Two Case Reports and Review of The Literature

Nuh Evin, Joshgun Gasimov, Fatih Osman Demir

Department of Plastic, Reconstructive and Aesthetic Surgery, Bezmialem Vakıf University, İstanbul / Türkiye

Introduction

Hair thread tourniquet syndrome is a circulatory disorder that occurs when hair strands or threads become entangled around limbs. It typically manifests in the first months of life and, if not diagnosed promptly and treated, can lead to permanent tissue damage and limb loss in affected areas. Hair is most commonly identified as the causative factor.¹ Hair's physical characteristics make it an effective tourniquet; when wet, it is thin, elastic, and expandable, but as it dries, it contracts and retains its strength.

Literature review indicates that accidents involving human hair almost always affect the toes and typically occur around the age when mothers experience excessive hair loss.² Postpartum, approximately 90% of women experience excessive hair loss known as telogen effluvium, which can present immediately after birth but usually appears between 2 to 6 months after delivery. Hair thread tourniquet syndrome has been directly associated with this condition. The digits at the highest risk of strangulation are the middle and third toes, followed by the index and second toes. Reported cases of penile tourniquet syndrome occurring in adults have also been documented.³ Furthermore, cases of hair-thread tourniquet syndrome have been associated with protruding skin lesions.

This study describes two patients who experienced hair entanglement on the right foot's fourth toe and skin mass on the back.

Case Presentation

Case 1: A 5-month-old female infant was brought to the hospital with redness, heat, and an increase in size on the fourth toe of her right foot, as reported by her family. Over the last 2 weeks, the patient had been restless and constantly crying without any apparent reason, and for the past 7 days, her toe had started to swell. Physical examination revealed a knot over the proximal interphalangeal joint of the right foot's fourth toe, with redness, increased heat, and approximately a 4-fold increase in size compared to the contralateral toe. Other systemic findings were normal. The hygiene around the knot area was found to be poor. After removing the foreign debris from the knot area, it became evident that the toe was encircled by strands of hair (Figure 1). The hair was completely freed, and a Doppler examination revealed arterial pulsations in both digital arteries. The patient was kept under observation, and treatment included circulation-enhancing agents along with analgesics, topical anesthetic, and antibiotic ointments. Subsequent check-ups revealed improved circulation in the toe, and the symptoms subsided.

Case 2: A 34-year-old female patient presented with a painful, foul-smelling, bleeding and discharging mass in the back region. In her medical history, she reported that the mass on her back had been growing slowly for about 6 months, bleeding from time to time. She had been experiencing mild pain for a week, and the lesion exhibited intense discharge and severe pain over the course of one day. On physical examination, there was a 4x4 cm nodular, stalked, infected, foul-smelling pedunculated polypoid mass in the midline on the back with circulation problem and partial necrosis. In addition, it was observed that the stalk of the mass was entangled by hair threads (Figure 2). Surgical excision was recommended. The patient agreed. Under local anesthesia, the mass was excised together with many hairballs. The defect was closed primarily. The dressing was done. The specimen was sent to pathology. Medical analgesic and antibiotic ointment was recommended. In the pathological examination, it was reported as "pyogenic granuloma" with ulcerated, squamous cell epithelial lining, capillary vessel proliferation and inflammatory infiltration under the epithelium. Stitches were removed 10 days later and anti-scar treatment was started. No recurrence was observed in the follow-ups.

Discussion

Circulatory disorders can occur when hair strands or threads become entangled around prominent areas such as fingers, toes, genitals, or the uvula.⁴ This condition has been referred to as "toe tourniquet syndrome," "penis tourniquet syndrome," and, most recently, "hair-thread tourniquet" syndrome. Patients with involvement of fingers or penis are at a higher risk of experiencing significant complications resulting from injuries than those with involvement of toes.⁵



12th

BAPRAS CONGRESS 2023
Selçuklu Convention Center Konya, TÜRKİYE



13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

The mechanism by which hair strands or threads become entangled has not been fully understood. However in hair-thread tourniquet syndrome, the prolonged circulatory disturbance can result in amputation of the affected limb, making early diagnosis and treatment crucial. The most appropriate diagnostic method involves the removal of the thread.⁶ In this case, early diagnosis facilitated successful treatment without causing tissue necrosis or limb loss.

Hair-thread tourniquet syndrome can also manifest in tumors. Hair-thread tourniquet syndrome has been observed in some cases of hemangioma.⁷

In the literature, researchers often observe hair thread tourniquet syndrome in regions such as the penis and the distal ends of the extremities. However, this syndrome can manifest in all protruding body masses. While tourniquet syndrome is rare, it may occur in women experiencing hair loss and men with long hair, as demonstrated in the second case of our study.

In summary, this report provides valuable insights into late-stage outcomes of digit tourniquet syndrome and offers an account of protruding pyogenic granuloma tourniquet syndrome, thus contributing to the existing literature.

References

- 1- Claudet I, Pasian N, Maréchal C, Salanne S, Debuissou C, Grouteau E. Hair-thread tourniquet syndrome. Archives de Pédiatrie: Organe Officiel de la Société Française de Pédiatrie. 2010;17(5):474-479.
- 2- Strahlman RS. Toe tourniquet syndrome in association with maternal hair loss. Pediatrics. 2003;111(3):685-687.
- 3- Sallami S, Rhouma SB, Cherif K, Noura Y. Hair-thread tourniquet syndrome in an adult penis: case report and review of literature. Urology Journal. 2013;10(2):915.
- 4- Pomeranz M, Schachter B, Capua T, Beyth Y. Hair-thread tourniquet syndrome of labia minor. Journal of Pediatric and Adolescent Gynecology. 2009;22(5):e111-e113.
- 5- BARTON DJ, SLOAN GM, NICTER LS, REINISCH JF. Hair-thread tourniquet syndrome. Pediatrics. 1988;82(6):925-928.
- 6- Saad AZM, Purcell EM, McCann JJ. Hair-thread tourniquet syndrome in an infant with bony erosion: a case report, literature review, and meta-analysis. Annals of plastic surgery. 2006;57(4):447-452.
- 7- Okur OM, Coskun A, Kayipmaz AE, Ozbay S, Kavalci C, Kocalar UG. Hair-thread tourniquet syndrome originating from a haemangioma in an adult patient. JPMA The Journal of the Pakistan Medical Association. 2016;66(7):896-897.

Keywords: Hair, hair-thread tourniquet syndrome, skin mass, toe, toe tourniquet syndrome

Figure 1





12th

BAPRAS CONGRESS

Selçuklu Convention Center Konya, TÜRKİYE



2023

13 September
Pre Congress Course
14 - 16 September
Congress

www.balkanplasticsurgery.org

Figure 2





PP-042

Total Glans Penis Amputation During Circumcision

Perçin Karakol, Yasin Canbaz, Kadir Barış Tiryaki, Muhammet Acar, Muhammed Yasin Babacan, Serhat Inan

Plastic Reconstructive and Aesthetic Surgery, Health Science University Cam and Sakura City Hospital, İstanbul / Türkiye

Introduction And Aim

Circumcision is a tradition that has continued in Islamic societies since the time of prophet Abraham and ancient Egypt. Circumcision in children and infants is one of the most common surgeries worldwide. 1 Globally, approximately 30% of men are circumcised. 2 The most common indication of circumcision is social and ritual. Furthermore, some authors have hypothesized that it may prevent sexually transmitted diseases. It has been made by inexperienced hands in old times. Over time, changes have been made in the technique, and today it has been performed by professionals with competence, especially by Urologists and Pediatric surgeons, General Surgery and Plastic Surgery specialists, in accordance with the rules of asepsis in hospital conditions. The main early and late complications of circumcision are bleeding, glans injury, infection, adhesion, excessive foreskin removal, meatal stenosis and phimosis, and false micropenis (inconspicuous penis). Neonatal circumcision has rapid healing, a lower complication rate, and less cost. Glans necrosis is a rare complication but causes serious cosmetic, reproductive, and psychological problems after circumcision and may occur after cautery. Among the causes of "Premature Ejaculation", which is known as the problem of 40% of sexually active men, current circumcision fails still lead.

Materials and Methods

The patient was transferred to us from another city under ambulance conditions. Due to a wrong procedure during circumcision, where the glans penis was totally severed and excessive bleeding occurred, the patient was transferred to another center in the same city for stabilization of vital signs before being taken over by us. On the 1st day of the 7-year-old male patient's admission to our clinic, the full-thickness necrosis area was debrided and replaced with acellular dermal matrix Matriderm® 2 mm. The dressings of the patient were renewed with daily wound care products and supported with hyperbaric oxygen therapy with 2.5ATA pressure for 120 minutes daily. On the 10th day of postdebridement of the patient, the defect area was closed with a mucosal graft. Postoperative follow-up was provided with testosterone-containing pomades. The patient controlled once a week after the surgical treatment.

Results

Due to the difficulty of following up with a urinary catheter and the risk of stricture formation, a two-step grafting approach was chosen because the wound bed was not ready for a single-step grafting. At the 3-month follow-up, the patient had minimal glans sensitivity, two-point sensation at approximately 1 cm, and patient had oblique urination. However, there was no stricture or painful urination.

Discussion and Conclusion

The main goal in the treatment of glans necrosis is to increase tissue vascularization and oxygenate ischemic penile tissue. In the literature, different methods have been tried in the treatment of glans necrosis, but there is no consensus on the treatment. The pharmacological agents commonly used today are pentoxifylline (PTX), enoxaparin, iloprost, antiplatelet drugs, corticosteroids and caudal anesthesia. Another treatment method used as an alternative to medical treatment is HBOT, which is suggested as an adjuvant treatment method because it increases tissue oxygenation, neutralizes anaerobic bacteria, improves neutrophil functions, increases fibroblast proliferation, and stimulates angiogenesis. Creating a vascular bed that can generate dermis in specific areas of existing defect sites is often challenging. We believe that the 2mm acellular matrix of Matriderm® stimulates rapid cell migration and enriches the vascular bed, thereby accelerating wound regeneration.



12th

BAPRAS CONGRESS

2023

Selçuklu Convention Center Konya, TÜRKİYE

www.balkanplasticsurgery.org



13 September
Pre Congress Course
14 - 16 September
Congress

References

- 1- A comprehensive comparison of the early and late complications of surgical circumcision in neonates and children: A cohort study Health Sci Rep. 2022 Nov; 5(6): e939. doi: 10.1002/hsr2.939 Soheila Siroosbakht and Bijan Rezakhaniha
- 2- Willy C, Rieger H, Vogt D. Hyperbare Oxygenation bei nekrotisierenden Weichteilinfektionen: Kontra [Hyperbaric oxygen therapy for necrotizing soft tissue infections: contra]. Chirurg. 2012 Nov;83(11):960-72. German. doi: 10.1007/s00104-012-2284-z. PMID: 23138865
- 3- Tzeng YS, Tang SH, Meng E, Lin TF, Sun GH. Ischemic glans penis after circumcision. Asian J Androl. 2004 Jun;6(2):161-163. PMID: 15154092
- 4- Aslan A, Karagüzel G, Melikoglu M. Severe ischemia of the glans penis following circumcision: a successful treatment via pentoxifylline. Int J Urol. 2005 Jul;12(7):705-707. doi: 10.1111/j.1442-2042.2005.01129.x. PMID: 16045570
- 5- Sterenberg N, Golan J, Ben-Hur N. Necrosis of the glans penis following neonatal circumcision. Plast Reconstr Surg. 1981 Aug;68(2):237-239. doi: 10.1097/00006534-198108000-00022. PMID: 7255584
- 6- Management of Post-Circumcision Glans/Penile Necrosis Yusuf Arikian and Ali Ayten Submitted: March 26th, 2021 Reviewed: May 31st, 2021 Published: June 26th, 2021 doi: 10.5772/intechopen.98642

Keywords: glans penis, circumcision, matriderm, hyperbaric oxygen, amputation

Photo 1

