

2025 Plastic Surgery The Meeting Global Partner E-Posters

A curious case of gigantomastia in a premenarche 12 year old female and our management.

Abstract Presenter: Rezarta Kapaj MD

Abstract Co-Author: Klaudia Ferko MD

Introduction: Gigantomastia in juvenile patients is a rare occurrence with very few reports found in the literature. Its pathophysiology has yet to be elucidated, but an end organ abnormal response has been shown in almost all cases. We will present the case of a 12 year old premenarche girl presenting with bilateral gigantomastia and our management of the case.

Case report:

A 12 years old, otherwise healthy female patient presented to our facility with immense growth of her breasts occurring over the past 6 months. She did not have any previous complaints. Her weight was 60 kg and her height 150 cm. The growth had started slowly, but after the visit she was advised to take Vitamin E, which, according to the parents, caused a very rapid overgrowth of the breasts causing serious discomfort and withdrawal from social life. She was premenarche with very little secondary sexual features development.

Upon inspection, a very distressed child was noted. Bilateral severe gigantomastia was obvious. Inflammation of the breasts, enlargement of the superficial venous system and notable kyphosis were seen. Her temperature was subfebrile and her breasts very sore barely allowing us to touch them.

Management: The patient was consulted with the senologist, pediatrician and plastic surgeon. An MRI was performed revealing no giant fibroadenoma or phylloides. A true cut biopsy revealed Pseudoangiomatosis Stromal Hyperplasia, possibly in the terrain of an abnormal end organ response. A thorough explanation was made to the child and the parents and a decision for a bilateral subcutaneous mastectomy and reconstruction with bilateral implants was made. In choosing the size of the implants, we decided to go with a smaller size keeping in mind the age and body size.

A wise pattern excision was employed for the resection. The NAC were excised and later used as free grafts. 12 kg of tissue were resected during the surgery. This made up for 20 % of her body weight. She received blood transfusion and albumin during the surgery. She was kept in the ICU overnight.

Bilateral 250 cc smooth breast implants were placed under the muscle. The surgery time was 3 hours. Her drains remained in place for 72 hours.

Her postoperative course was uneventful with little loss on her NAC grafts. She was happy from the start and her body temperature returned to normal immediately after the surgery. She

returned to school the next month with complete resolve of her symptoms.

Discussion: Juvenile gigantomastia is a very rare occurrence. Tamoxifen has been proposed as a first line management in these cases. Reduction mastoplasty has also been reported. We selected bilateral mastectomy as the case was very severe and the patient premenarch, worrying the parents she could need further surgery after her period. The results were satisfactory and the patient returned to her normal childhood and school after a month.

A METHOD TO DEFINE THE INCISION AT THE NEW INFRAMAMMARY FOLD IN PRIMARY BREAST AUGMENTATION SURGERIES WITH POLYURETHANE-COATED IMPLANTS: THE PUSH AND ROTATE (PAR) METHOD

Abstract Presenter: Mauro Barbera MD

Abstract Co-Author: Máriio Mendanha

BACKGROUND: Primary breast augmentation requires careful preoperative planning to achieve optimal aesthetic results while minimizing complications and reoperations. One critical aspect of this planning is the positioning of the inframammary fold (IMF) and the corresponding incision placement. Incorrect incision placement can lead to visible scarring, doublebubble deformity, bottoming-out, and other complications. While several methods for determining the IMF location exist, many do not fully account for the dynamic elasticity of the breast tissues and surrounding structures. This

study introduces the "Push and Rotate" (PAR) method, a simplified maneuver that evaluates the elasticity of the IMF, lower pole skin, and recruitable abdominal skin to identify the most caudal and aesthetically favorable location for the incision. The primary aim is to assess the reliability of the PAR method in ensuring optimal scar positioning and reducing postoperative complications.

METHODS: A prospective study was conducted on patients undergoing primary breast augmentation using polyurethane-coated implants between 2018 and 2024. Inclusion criteria encompassed women seeking primary augmentation through an inframammary incision, while exclusion criteria included prior breast surgeries or concurrent procedures. Preoperative markings included the midline, current IMF, and breast footprint. The PAR maneuver involved holding the upper breast pole with four fingers and the lower pole with the thumb, pushing the breast caudally and rotating it anteriorly to recruit abdominal skin. The flexion point indicated the lowest possible incision site. Implant selection (shape, size, and projection) was guided by the patient's anatomy and preferences. All procedures used subglandular or dual-plane pockets based on tissue thickness. Scar quality was evaluated using the Vancouver Scar Scale (VSS), and photographic documentation was performed pre- and postoperatively. Follow-up assessments included ultrasound evaluations and complication monitoring.

RESULTS: A total of 165 patients with a mean age of 41 years were included, with an average follow-up of 41 months. The PAR method successfully identified the optimal incision location in all cases, resulting in well-defined IMFs postoperatively. Scars were consistently positioned within the IMF in 98% of breasts, with minimal visibility and a mean VSS score of 0.18. No cases of bottoming-out, NAC malposition, or double-bubble deformities were recorded. Patients demonstrated satisfactory lower pole convexity and central NAC positioning. Upper pole concavities, present in 34% of cases preoperatively, were corrected, achieving patient-desired profiles. Only a minority (1%) exhibited minor scar

displacement associated with dual-plane pockets, likely due to muscle dynamics. No surgical complications such as hematoma, infection, seroma, or capsular contracture were observed.

CONCLUSIONS: The PAR method provides a reliable, patient-specific approach for determining the lowest safe and aesthetically optimal incision site in primary breast augmentation. By dynamically assessing tissue elasticity, this technique enhances preoperative planning and reduces complications related to IMF misplacement. Its simplicity, reproducibility, and applicability across various implant types make it a valuable tool for surgeons aiming to optimize surgical outcomes and patient satisfaction. Further studies with larger cohorts and extended follow-up periods are recommended to validate these findings and explore long-term outcomes.

B. P. Bengtson, "Complications, Reoperations, and Revisions in Breast Augmentation," Jan. 2009. doi: 10.1016/j.cps.2008.08.002.

J. B. Tebbetts and W. P. Adams, "Five critical decisions in breast augmentation using five measurements in 5 minutes: the high five decision support process.," *Plast Reconstr Surg*, vol. 116, no. 7, pp. 2005–2016, 2005, doi: 10.1097/01.prs.0000191163.19379.63.

P. Mallucci and O. A. Branford, "Design for Natural Breast Augmentation: The ICE Principle," in *Plastic and Reconstructive Surgery*, Lippincott Williams and Wilkins, Jun. 2016, pp. 1728–1737. doi: 10.1097/PRS.0000000000002230.

P. Montemurro, M. Cheema, T. Pellegatta, and P. Hedén, "Patient and Clinician Reported Outcomes of the Inframammary Incision 'Short Scar Technique' in Primary Breast Augmentation," *Aesthet Surg J Open Forum*, vol. 5, Jan. 2023, doi: 10.1093/asjof/ojad003.

M. B. Nava, G. Catanuto, and N. Rocco, "A decision-making method for breast augmentation based on 25 years of practice," *Arch Plast Surg*, vol. 45, no. 2, pp. 196–203, Mar. 2018, doi: 10.5999/aps.2017.00535.

N. A. Phillips, L. S. Millan, M. Miroshnik, L. Stradwick, and C. Layt, "A Novel Classification of the Inframammary Fold for Use in Primary Breast Augmentation," *Plast Reconstr Surg*, vol. 148, no. 6, pp. 903e–914e, Dec. 2021, doi: 10.1097/PRS.00000000000008563.

A novel technique to perform ultrasound-guided intramuscular percutaneous fat grafting: The PRIME-Graft

Abstract Presenter: Márcio Mendanha

Abstract Co-Author: Mauro Barbera MD

Background: Body contouring surgery has evolved to focus not only on fat removal but also on achieving natural-looking, dynamic results. High-definition lipoplasty (HDL) and intramuscular fat grafting (IFT) have become popular for enhancing muscular definition and volume. The PRIME-GRAFT technique (Percutaneous Retrograde Intramuscular Eco-Guided Fat Grafting) is a novel approach that allows precise fat placement under ultrasound guidance, respecting muscle fiber orientation. This study aims to evaluate the safety, efficacy, and aesthetic outcomes of the PRIME-GRAFT technique in body contouring surgery.

Methods: This retrospective study analyzed data from 71 patients (21 men, 50 women; mean age: 43 years) who underwent the PRIME-GRAFT technique between 2022 and 2023. Inclusion criteria included patients with a BMI ≤ 35 kg/m² and ASA surgical risk grade II or lower. The procedure involved liposuction using VASER® ultrasound technology, fat processing through washing and decantation, and subsequent intramuscular fat injection under ultrasound guidance. Muscles treated included the rectus abdominis, pectoralis major, latissimus dorsi, deltoid (anterior, medial, posterior), biceps brachii, triceps brachii, rectus femoris, vastus medialis, vastus lateralis, and gastrocnemius muscles.

Preoperative assessment included thorough patient education, anatomical mapping through preoperative drawings, and intraoperative use of temperature monitoring and antibiotic prophylaxis. Postoperative care included hyperbaric oxygen therapy and physiotherapy. Outcome measures focused on complication rates, aesthetic evaluation, functional improvements, and patient satisfaction during an average follow-up period of 18.5 months.

Results: A total of 1,212 muscle compartments were treated across 71 patients. Fat injection volumes varied by muscle group, with the pectoralis major and rectus abdominis receiving the highest volumes. All patients resumed daily activities within two weeks post-surgery. There were no cases of infection, hematoma, fat embolism, or contour irregularities. Scarring was minimal and inconspicuous. Clinical assessments and patient feedback indicated improved muscle volume, enhanced body contour, and increased muscle strength postoperatively. No patient reported limitations in range of motion or significant postoperative pain beyond the expected recovery period.

The use of a 2.1-mm blunt cannula allowed precise fat placement, minimizing tissue trauma. Ultrasound guidance, especially with color Doppler mode, enhanced safety by avoiding vascular pedicles. The retrograde injection technique ensured homogeneous fat distribution, respecting the anatomical orientation of muscle fibers. Functional improvements in muscle performance were noted, although further studies are needed to quantify these outcomes objectively.

Discussion: The PRIME-GRAFT technique offers several advantages over traditional fat grafting methods, including improved safety, better control over fat placement, and enhanced aesthetic outcomes. The percutaneous approach with thinner cannulas reduces tissue disruption and the risk of complications. Ultrasound guidance significantly improves the accuracy of fat deposition, especially in challenging anatomical areas. Despite requiring multiple skin access points, the resulting scars are minimal and typically undetectable after healing.

Compared to existing techniques, PRIME-GRAFT provides a safer and more anatomically respectful method for intramuscular fat grafting. The ability to tailor fat volumes to individual muscle compartments allows for customized body contouring. The study also highlights the importance of respecting muscle fiber orientation and vascular structures to prevent complications such as fat embolism.

Conclusions: PRIME-GRAFT is a safe, effective, and reproducible technique for enhancing muscular definition and body contour through intramuscular fat grafting. Its integration of ultrasound guidance ensures accurate fat placement, minimizes complications, and achieves natural-looking results. The technique's versatility allows its application across various muscle groups, catering to both male and female aesthetic goals. Future research should focus on long-term fat retention rates and functional performance improvements.

E. A. Flores González et al., "A New Anatomical Approach to Male Pectoral Volumization," *Plast Reconstr Surg Glob Open*, vol. 13, no. 1, Jan. 2025, doi: 10.1097/GOX.0000000000006491.

A. Hoyos and M. Perez, "Dynamic-definition male pectoral reshaping and enhancement in slim, athletic, obese, and gynecomastic patients through selective fat removal and grafting," *Aesthetic Plast Surg*, vol. 36, no. 5, pp. 1066–1077, 2012, doi: 10.1007/s00266-012-9940-z.

S. Danilla, "Rectus Abdominis Fat Transfer (RAFT) in Lipoabdominoplasty: A New Technique to Achieve Fitness Body Contour in Patients that Require Tummy Tuck," *Aesthetic Plast Surg*, vol.

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AN ESSENTIAL INFINITEBOOK FOR PLASTIC AND RECONSTRUCTIVE SURGERY PREOPERATIVE PLANNING

Abstract Presenter: Pedro Machado

Abstract Co-Author: Ricardo Horta

BACKGROUND: Over the past decade, there has been a notable increase in plastic and reconstructive surgeries, propelled by increased accessibility and aesthetic preferences. Despite surgeons' efforts, patient satisfaction faces challenges due to unrealistic expectations rooted in inadequate knowledge. Preoperative consultations present an opportune moment to address this issue.

This study introduces a new approach for preoperative planning: the Infinitebook. Designed to enhance patients' understanding and satisfaction, it facilitates real-time procedure explanations and helps manage expectations.

METHODS: The Infinitebook, a versatile A5-sized notebook-like resource, aids surgeons in illustrating procedures such as abdominoplasty, liposuction, and breast reconstruction, enhancing patient understanding through real-time interaction, personalized illustrations, and sustainable practices, facilitating improved communication in plastic and reconstructive surgery. A cross-sectional study compared two groups: one using the Infinitebook-assisted explanation approach and another without. A questionnaire evaluated its impact on patients' procedural understanding level and satisfaction with the preoperative consultation. Statistical analysis was conducted using IBM® SPSS Statistics.

RESULTS: Participants (n=46) were systematically sampled and categorized by demographics. Two groups (n=23 each) received preoperative consultations with and without the Infinitebook. Perceptions on aspects of preoperative consultations were assessed. The Infinitebook received positive feedback, with all participants (100%) recommending it.

CONCLUSION: This paper introduces the Infinitebook, an environmentally-friendly tool enhancing preoperative preparation, patient comprehension, and satisfaction in plastic

and reconstructive surgery. It offers a customizable solution with potential for global implementation, with scope for further research. This study lays groundwork for future advancements in preoperative consultations and planning, promoting person-centered healthcare and integrating new technologies.

An Update and Evaluation of Treatment Options for Hand Rejuvenation in Australia

Abstract Presenter: Doran Kalmin MD

Introduction: The appearance of hands is an accurate isolated predictor of a person's age.¹ Age related changes in the hand include thinning of the dermis, epidermis and fibrofatty tissue, pigmentation from photodamage and trauma, prominent veins, tactile roughness, intrinsic muscle atrophy and arthritis. Increasingly, procedures targeting the aesthetic appearance of hands makes up a growing proportion of hand surgeons' work with innovative treatments available to address the ageing hand.

Methods: The MEDLINE database was searched to identify relevant studies. Search terms include: "hand rejuvenation" "hand ageing" "fat grafting" "dermal filler" and "lasers". Studies published from 2000 to 2024 were included.

Results: 96.7% of patients seeking hand rejuvenation are females. Topical treatments including sodium copper chlorophyllin, alpha-hydroxy acid and retinol that reverse photodamage and add moisture. Results are unpredictable with short longevity. Laser therapies improve deteriorating skin quality and pigmentation, the two most effective are the Q-switched ruby laser and Intensive Pulsed Light (IPL). Dermal fillers and fat grafting improve the appearance of tendons and veins. These have high patient satisfaction rates with low complication rates. Most authors recommend filler and fat be injected in the dorsal superficial lamina layer to prevent damage to sensory nerves and veins.²

Conclusions: Hand rejuvenation is a growing area with treatment options generally very safe with rare complications and have high patient satisfaction. The most common methods in the literature which are readily available in Australia include dorsal hand fat grafting, injectable fillers, topical therapies and skin laser treatments.

References

1. Bains RD, Thorpe H, Southern S. Hand aging: patients' opinions. *Plast Reconstr Surg.* 2006;117(7):2212-8.
2. Conlon CJ, Abu-Ghname A, Davis MJ, Ali K, Winocour SJ, Eisemann ML, et al. Fat Grafting for Hand Rejuvenation. *Semin Plast Surg.* 2020;34(1):47-52.

Breast implant in post-bariatric patients: rational decision or risky choice?

Abstract Presenter: Vincenzo Vindigni MD, PhD

Abstract Co-Author: Franco Bassetto MD

Mastopexy surgery is among the most requested procedures by patients after massive weight loss. Many require a florid and voluminous breast, which is achieved thanks to the implantation of a breast prosthesis. However, mastopexy surgery with the prosthesis, especially with skin and subcutaneous tissues tested by significant weight loss, hides numerous risks and pitfalls. Is it, therefore, worth proposing this operation to post-bariatric patients? The study aims to answer this question by comparing two cohorts of post-bariatric patients undergoing mastopexy surgery with autologous tissues (74 women) and mastopexy with prosthesis implantation (64 women). Data demonstrate that patients who have implanted prostheses have a higher complication rate ($p=0.016$), in particular, a more frequent recurrence of breast ptosis ($p=0.003$). At the same time, patients with autologous reconstruction had a higher rate of wound dehiscence ($p=0.015$). Despite this, patient satisfaction rates were comparable between the two surgeries ($p=0.684$) The results were compared with the latest literature to have a more holistic understanding of the debate.

Cutaneous wound healing promoted by topical administration of heat-killed probiotics and possible contribution of CARD9-mediated signaling

Abstract Presenter: Shinyo Ishi MD, PhD

Abstract Co-Author(s): Yoshimichi Imai, Toshiro Imai MD, PhD

Purpose: Probiotics are well known to have beneficial effects in modulating immune responses against microbial infection and in protecting the host. Previously, we have

reported that topical administration of heat-killed *Lactobacillus plantarum* (*L. plantarum*) promotes wound healing. In this study, we analyzed the changes in cell accumulation at the wound site induced by *L. plantarum* administration in order to elucidate the detailed mechanism. In addition, we analyzed the signaling pathway using CARD9KO mice and reporter cells.

Method: A full-thickness skin defect wounds were created on the dorsal skin of wild-type (WT) mice (C57BL/6), and *L. plantarum* or distilled water (vehicle control) was immediately injected into the wound. Wound closure rate, pathological findings, and cytokines, chemokines, and growth factors in the homogenate supernatant were analyzed daily after wound creation. In addition, the number and fractionation of leukocytes accumulated in the wound were analyzed by flow cytometry. We also performed the same analysis using WT and CARD9KO mice. In addition, *L. plantarum* stimulation experiments using Dectin-1, Dectin-2, and Mincle reporter cells were performed to search for receptors upstream of CARD9.

Results: Flow cytometric analysis showed that *L. plantarum* induced neutrophils in the early phase of the treatment, followed by persistent macrophages in the mid- to late phase of the treatment. In addition, the M2/M1 ratio was significantly increased in the *L. plantarum* group at 10 days after wound preparation. Furthermore, analysis of wound closure rates in WT and CARD9KO mice showed that *L. plantarum* treatment in CARD9KO mice lost its wound-healing promoting effect. The GFP activity of each reporter cell was not observed in the *L. plantarum*-stimulated experiments using Dectin-1, Dectin-2, and Mincle reporter cells.

Conclusions: These results indicate that *L. plantarum* induces the differentiation of M2 macrophages. It is also possible that CARD9 is involved in the mechanism of wound healing promotion by *L. plantarum*, and that signaling is mediated through receptors other than Dectin-1, Dectin-2, and Mincle. The results of this study are expected to lead to the development of novel wound healing agents using heat-killed probiotics.

Does autologous transplantation of cultured fibroblasts promote improvements in photoaged facial skin?

Abstract Presenter: Ana Belen Gutierrez Rodriguez MD

Abstract Co-Author(s): Lydia Ferreira MD, PhD, Felipe Isoldi

INTRODUCTION: Autologous fibroblast transplantation (AFT) may be an innovative method by which the effects of facial photoaging, known as solar elastosis, can be treated(1). AFT optimizes the biosynthetic properties of fibroblasts to produce greater quantities of "new" collagen and promote extracellular matrix organization, thus improving the clinical, biophysical, and histological properties of aged facial skin.(2,3,4) Thus, there is a need to investigate the changes that occur at the structural level in photoaged skin, with a focus on the dermis and its cells.(2,4) This study intends to evaluate the histological and immunohistochemical characteristics of the photoaged facial skin of patients undergoing AFT.

METHODS: This is a primary, cohort, analytical, observational, cross-sectional, self-controlled, randomized study blinded to laboratory and statistical analyses. Twenty female patients between 50 and 70 years of age with photoaging of the face and Fitzpatrick's skin phototype III were allocated for evaluation by simple randomization 3, 6, and 12 months after AFT. There were no exclusions during this study. Facial skin biopsies were obtained from each studied region of the face (preauricular, retroauricular and submental) from patients before AFT (control group) and after AFT (experimental group) after simple randomization of the hemifaces. The samples were embedded in paraffin, and some were stained with hematoxylin and eosin for histological analysis of the general skin organization, epidermal and dermal thicknesses, vascularization, and cellularity indices. Another set of sections was subjected to Masson's trichrome and Picrosirius red staining to evaluate the organization of the collagen fibers. Moreover, additional sections were subjected to immunohistochemical analysis to detect cytokeratins (AE1 + AE3), mesothelial cells (vimentin), elastin, type I and III collagen and fibronectin.

RESULTS: In the experimental group, the epidermis ($p < 0.001$) and dermis ($p < 0.001$) were thicker and both neovascularization ($p < 0.001$) and the cellularity index ($p = 0.002$) increased. Moreover, thicker, parallel bundles of collagen fibers that were more intact were more frequently observed in the dermis tissues after AFT, and the birefringence of the collagen fibers was more intense under polarized light. In addition, the regions of the skin that received AFT showed more intense positive staining for cytokeratins ($p = 0.044$), vimentin ($p = 0.014$), elastin ($p = 0.004$), collagen type I ($p = 0.044$), collagen type III ($p = 0.031$), and fibronectin ($p < 0.001$).

CONCLUSION: AFT restored the morphological and functional characteristics of photoaged facial skin, as determined by histological and immunohistochemical analyses.

REFERENCES:

1. Zhang S, Duan E. Fighting against skin aging: the way from bench to bedside. *Cell Transplant*. 2018;27(5):729-738.
2. Machaliński B, Brodkiewicz A, Szumilas K, et al. Morphologic changes in the dermis after the single administration of autologous fibroblastic cells: a preliminary study. *Transplant Proc*. 2016;48(8):2833-2839.
3. Thangapazham RL, Darling TN, Meyerle J. Alteration of skin properties with autologous dermal fibroblasts. *Int J Mol Sci*. 2014;15(5):8407-8427.
4. Zorin V, Zorina A, Cherkasov V, Deev R, Kopnin P, Isaev A. Clinical-instrumental and morphological evaluation of the effect of autologous dermal fibroblasts administration. *J Tissue Eng Regen Med*. 2017;11(3):778-786.

Effect of UNC0642 on viability and proliferation of primary cultured human melanoma cells

Abstract Presenter: Mateus Leme De Marchi

Abstract Co-Author: Renato de Oliveira Filho

Introduction: Cutaneous melanoma is a neoplasm with high mortality rates. Its incidence has been increasing worldwide, and new treatment options for advanced disease are necessary. DNA is packaged into chromatin by histones, forming nucleosomes. Each nucleosome has an N-terminal portion subject to modifications that affect the cell's gene expression. Overexpression of the histone lysine methyltransferase (G9a), responsible for mono- and dimethylation of histone H3 lysine 9, promotes melanoma development through the positive regulation of the Notch signaling pathway. UNC0642, a selective G9a inhibitor, binds to the substrate (histone), making it inaccessible to G9a, thereby inhibiting the Notch pathway. This effect leads to decreased cell viability and proliferation. (1,2)

Objective: To characterize the in vitro effect of UNC0642 on cell viability and proliferative capacity in human melanoma cell line SK-MEL-24 and primary melanoma metastasis cultures (PCMM).

Methods: An in vitro, controlled and experimental study. Cultures of metastatic human melanoma (CMHM) cells were obtained from samples collected during acral melanoma resection at the Federal University of São Paulo, and the SK-MEL-24 melanoma cell line was acquired from an existing commercial source. The response of UNC0642 in the SK-MEL-24 melanoma cell line and primary cultures from patients with metastatic

melanoma was evaluated in terms of cell viability and proliferative capacity. Escalating doses of UNC0642 (0–20 μ M) were used to calculate the dose-response curve and determine the IC₅₀. The cell viability assay was performed by flow cytometry using Annexin-V as an early apoptosis marker, Propidium Iodide as a late apoptosis marker, and Caspase-3 for apoptosis confirmation. (3)

Results: SK-MEL-24 treated with UNC0642 showed a high mortality rate compared to the control, in a dose- and time-dependent manner. CMHM exhibited a higher baseline death rate than SK-MEL within the first 24 hours. The SK-MEL-24 cell line showed approximately 50% apoptosis after 48 hours with doses of 5 and 7.5 μ M of UNC0642 and 80% with a dose of 10 μ M. The CMHM cell line showed approximately 80% apoptosis after 48 hours with doses of 5, 7.5, and 10 μ M of UNC0642. The IC₅₀ for SK-MEL-24 and CMHM was 5 nM.

Conclusion: UNC0642 increases total cell mortality, early and late apoptosis, or necrosis in both the SK-MEL-24 cell line and CMHM, which may be useful for metastatic melanoma treatment. The IC₅₀ of the drug was determined, providing data for the initiation of in vivo studies in metastatic melanoma.

References:

1 - Liu Z, et al. Notch1 signaling promotes primary melanoma progression by activating mitogen-activated protein kinase and up-regulating N-cadherin expression. *Cancer Res.* 2006;66(8):4182-90.

2 - De Oliveira Filho RS, Soares AL, Paschoal FM, Rezze GG, Oliveira E, Macarenco R, Buzaid AC, Ferreira LM. Literature review of Notch melanoma receptors. *Surgical and Experimental Pathology [Internet].* 2019; 2(1):1-6.

3 - Quadri M, et al. Progress in melanoma modelling in vitro. *Exp Dermatol.* 2018. 27(5):578-586.

EFFECTIVENESS OF FUNCTIONAL SEPTORHINOPLASTY ON DEVIATED NOSE IN INDIAN POPULATION

Abstract Presenter: NIKITA ROLEKAR

Background: The deviated nose represents a complex aesthetic and functional problem. Thus, correcting the deformed nose with long-term functional and aesthetic success remains a major challenge for rhinoplasty surgeons.

Methods: A prospective study was held in Terna Medical College and Hospital, Navi Mumbai from July 2021 until August 2023 to evaluate the functional outcome of septorhinoplasty subjectively in cases of deviated nasal septum in the Indian population. A total of 25 patients were enrolled and completed the study. Detailed history, symptoms, and all measurements were taken preoperatively and evaluated immediately on the day and 3 months postoperatively. Septorhinoplasty was performed in all patients, ranging in age from 18 to 33 years. The majority had a history of trauma with 14 being male and 11 being females. A deviated nose was the most common external nose abnormality followed by crooked and saddle nose. Almost all patients presented with variable degrees of congestion, nasal blockages, breathing troubles, and problems with the aesthetic look of the nose.

Results: Out of 25, 9 patients crooked noses, 7 patients had hump deformity, and 9 patients had saddle noses with all had associated with deviated nose and tip deformity. Septorhinoplasty done with the use of nasal, ear, and rib cartilage depends on nasal deformity. Subjective assessment using the Nasal Obstruction Symptoms Evaluation (NOSE) scale was done on all patients postoperatively. There was significant improvement was observed in all of the parameters in the NOSE scale post-septorhinoplasty ($p < 0.05$). Furthermore, there was a significant improvement in the aesthetic look of the nose.

Conclusion: Functional Septorhinoplasty improves the nasal airflow and quality of life of patients with nasal obstruction as well as gives a good aesthetic straight nose.

REFERENCE

1. Stewart MG, Smith TL, Weaver EM et al. Outcomes after nasal septoplasty: results from the Nasal Obstruction Effectiveness (NOSE) study. *Otolaryngol Head Neck Surg*: 2004; 130(3):283-90.
2. Matthew K. Lee, MD and Sam P. Most, MD A Comprehensive Quality-of-Life Instrument for Aesthetic and Functional Rhinoplasty: The RHINO Scale *Plast Reconstr Surg Glob Open*. 2016 Feb; 4(2): e611.
3. André RF, Vuyk HD. Reconstruction of dorsal and/or caudal nasal septum deformities with septal battens or by septal replacement: an overview and comparison of techniques. *Laryngoscope* 2006; 116:1668–1673.

4. FD Zahedi, S Husain, BS Gendeh. Functional outcome evaluation of septorhinoplasty for nasal obstruction Indian Journal of Otolaryngology and Head & Neck Surgery 68, 218-223
5. Lee JW, Baker SR. Correction of caudal septal deviation and deformity using nasal septal bone graft. Facial Plast Surg 2013; 15:96–100.

Enhancing Breast Contours after Major Weight Loss: The Dilemma of Mammary Implant Reconstruction

Abstract Presenter: Vincenzo Vindigni MD, PhD

Abstract Co-Author: Franco Bassetto MD

The study focuses on breast reshaping surgery in women who have undergone massive weight loss (MWL) following bariatric surgery, evaluating the use of different types of breast implants and their outcomes. Conducted retrospectively from January 2016 to December 2022 at a public hospital, the study included adult female patients who underwent breast reshaping with implants. Exclusion criteria encompassed weight loss through diet/exercise alone, history of breast cancer, poorly managed comorbidities, and significant psychiatric disorders. The surgeries were performed by a consistent surgical team, with implant selection tailored to each patient based on pre-operative assessments of breast ptosis and individual expectations. Data analysis included patient demographics, surgical specifics, and post-operative complications. Among the 56 patients studied, 38 received polyurethane implants and 18 received textured implants. The study found no significant differences between these groups regarding age, initial weight, BMI, weight loss, return to normal activities, patient satisfaction, implant positioning, or complication rates. The overall complication rate was 37.5%, with no significant variation between the two implant types. The study underscores the challenges of achieving optimal results in post-MWL breast reshaping due to unique deformities and higher risks of complications. Despite ongoing debate over ideal implant types, this research indicates no clear superiority between polyurethane and textured implants. Future research directions should explore newer ultra-light implants and compare implant-based techniques with autologous tissue approaches to further refine outcomes in this patient population.

Equal magnification Caldwell X-rays : Innovative low cost alternative to cutting guides for facial feminisation

Abstract Presenter: Shivangi Saha MD

Abstract Co-Author: Maneesh Singhal MD, FACS

Background: Facial feminization surgery (FFS) is a crucial step in the transition journey of trans-females to achieve social acceptance as women. Forehead and brow reduction in Ousterhout Group III individuals necessitates frontal bone setback, which carries the risk of inadvertently opening the cranial cavity if the osteotomy extends beyond the frontal sinus margins. While virtual surgical planning (VSP) and 3D-printed customized guides are the gold standard for safe and precise osteotomy, they are expensive and inaccessible to many trans-females due to financial constraints.

Objective: To describe an innovative, low-cost method for accurately identifying the frontal sinus margins using a template derived from an equal magnification Caldwell view X-ray, eliminating the need for VSP and 3D-printed cutting guides.

Methods: A template was created by cutting out the frontal sinus outline from an equal magnification Caldwell view X-ray and using it intraoperatively to guide anterior table osteotomy. This method was applied in 15 consecutive cases undergoing frontal bone setback for FFS. Patients were followed postoperatively for complications and aesthetic outcomes.

Results: All 15 patients underwent successful frontal sinus setbacks without intraoperative or postoperative complications. Postoperative outcomes were satisfactory in all cases, with no reported complications during follow-up (Mean followup - 20.1 months) .

Conclusion: The described method provides a simple, cost-effective alternative to VSP and 3D-printed guides for safe frontal sinus setback in FFS. This approach increases accessibility to forehead feminization surgery for trans-females from marginalized communities, offering a viable solution in resource-limited settings.

References:

1. Ousterhout DK. Feminization of the forehead: contour changing to improve female aesthetics. *Plast Reconstr Surg* 1987; 79:701–713

2. Becking AG, Tuinzing DB, Hage JJ, Gooren LJ. Facial corrections in male to female transsexuals: a preliminary report on 16 patients. *Journal of Oral and Maxillofacial Surgery*. 1996;54(4):413-8.
3. Shams MG, Motamedi MH. Case report: feminizing the male face. *Eplasty*. 2009;9.
4. Morrison SD, Vyas KS, Motakef S, Gast KM, Chung MT, Rashidi V, Satterwhite T, Kuzon W, Cederna PS. Facial feminization: systematic review of the literature. *Plastic and reconstructive surgery*. 2016;137(6):1759-70.
5. Salgado CJ, AlQattan H, Nugent A, Gerth D, Kassira W, McGee CS, Wo L. Feminizing the face: combination of frontal bone reduction and reduction rhinoplasty. *Case Reports in Surgery*. 2018;2018(1):1947807.

Evolution of blepharospasm and hemifacial spasm in patients undergoing treatment with botulinum toxin type A

Abstract Presenter: Wellington Menezes Mota MD

Abstract Co-Author(s): Alessandra Salles MD, Nivaldo Alonso MD

BACKGROUND: Blepharospasm (BEB) and hemifacial spasms (HFS) are characterized by short or persistent, synchronous, intermittent contractions of the facial muscles, with botulinum toxin type A (BTxA) being the first-line treatment. BEB typically begins in both eyes, whereas HFS is known to progress to the contralateral hemiface in 0.6 to 3% of cases¹. However, there is a lack of literature describing the progression of HFS during treatment with BTxA. The objective of this study is to describe the epidemiology and long-term evolution of BEB and HFS cases treated with BTxA.

METHODS: We followed 95 facial spasms patients (79 females, mean age 62.19 ± 10.31 years) treated with BTxA from May 2003 to December 2023. The following data were collected: etiology; duration of the disease before treatment; treatment duration; date and number of the corresponding treatment session; affected side; presence of synkinesias; and evolution to cure or bilateral involvement. BTxA was administered to both hemifaces following a previously established institution protocol^{2,3}. We used the Student's t-test and Mann-Whitney test to evaluate the time to progression to the ipsilateral and contralateral hemiface.

RESULTS: 1212 applications of BTxA were performed during the study, with an average of 12.8 ± 8.5 sessions per patient. Fifteen patients had BEB and the remaining had HFS. The primary etiology was idiopathic (92%). Our case series revealed: family

history (10.5%), synkinesias (15.7%), facial paralysis (10.2%) and nocturnal spasms (30.5%). In 9 out of 15 cases, BEB was bilateral; among the unilateral cases, two resolved after two sessions of BTxA, while one progressed to bilateral involvement. In 55% of HFS cases, the disease started in one eye, with all cases progressing to the ipsilateral hemiface at a mean time of 1.14 ± 1.31 years. In all other patients, the disease began affecting the entire hemiface. Subsequently, in 28 patients (35%), there was progression over a longer time period (10.1 ± 6.74 years, $p < 0.01$) to the contralateral eye; of these, 10 patients (12.5%) progressed to the entire contralateral hemiface. The time of progression to the contralateral hemiface was shorter in patients receiving treatment with the toxin (3.3 ± 2.3 years) compared to untreated patients (9.0 ± 5.5 years) ($p = 0.02$).

CONCLUSION: This study provides insights into the progression timeline of symptoms that have not been previously described. Treatment with BTxA did not prevent the progression of BEB and HFS. The protocol used may be associated with a more accelerated progression of HFS to the contralateral eye.

REFERENCES:

1. Felício AC, Godeiro-Junior C de O, Borges V, Silva SM de A, Ferraz HB. Bilateral hemifacial spasm: A series of 10 patients with literature review. *Parkinsonism Relat Disord.* 2008;14(2):154-156.
2. Salles AG, Teixeira NH, Mattos FTB, et al. Protocol for bilateral application of botulinum toxin type A to avoid asymmetry during treatment of hemifacial spasms. *Rev Bras Cir Plást.* 2015;30:228-234.
3. Salles AG, Toledo PN, Ferreira MC. Botulinum Toxin Injection in Long-Standing Facial Paralysis Patients: Improvement of Facial Symmetry Observed up to 6 Months. *Aesth Plast Surg* 2009; 33:582–590.

Extended reduction malarplasty for Asians with prominent cheek

Abstract Presenter: Yoshitsugu Hattori MD

Abstract Co-Author: Takanobu Mashiko

Purpose: Reduction malarplasty is an effective procedure for Asians with prominent cheek.[1-3] However, attention has been focused mainly on the position of the zygomatic body and arch, and protrusion of the periorbital area has been often overlooked or ignored.[4] We have adopted the extended reduction malarplasty to

correct the prominent inferolateral orbital rim simultaneously. We present the surgical procedures and compare the outcomes with that of conventional L-shaped reduction malarplasty.[5]

Methods: A retrospective review of consecutive patients who received reduction malarplasty between August 2021 and September 2023 was conducted. Computed tomography images obtained before and after surgery were assessed to evaluate the facial skeletal changes, and to compare between the extended and conventional L-shaped malarplasty results.

Results: Twenty extended reduction malarplasty patients and 23 conventional reduction malarplasty patients were eligible for the study, with a mean postoperative follow-up period of 7.3 and 10.3 months, respectively. Cephalometric analyses showed significant reduction in the zygomatic width in both groups, but the protrusion of the periorbital area was improved significantly greater in the extended reduction malarplasty group. In terms of facial angulation, the extended reduction malarplasty also provided more horizontal convexity in the periorbital area, whereas the angular change in the caudal part of zygoma was not significantly different.

Conclusion: The extended reduction malarplasty enabled to reduce the protrusion of the periorbital area, as well as the prominent zygomatic body and arch, and provided more three-dimensionality and horizontal convexity with the midface contour. It is a viable option for harmonizing the facial profile for Asian patients with flat and wide face.

1. Baek SM, Chung YD, Kim SS. Reduction malarplasty. *Plast Reconstr Surg*. 1991;88:53-61.
2. Lin L, Han W, Sun M, et al. Current practices for esthetic facial bone contouring surgery in Asians. *Clin Plast Surg*. 2023;50:71-80.
3. He Y, Wang Y, Al-Watary MQH, Gao H, Li J. Three-dimensional analysis of zygomatic change after L-shaped reduction malarplasty with bone setback or resection. *J Plast Reconstr Aesthet Surg*. 2023;83:42-50.
4. Chung S, Park S. Lowering lateral canthoplasty and orbital rim shaving: An ignored but necessary procedure for maximizing the effect of reduction malarplasty in Asians. *Aesthetic Plast Surg*. 2019;43:686-694.
5. Zhang J, Liu H, Liu Y, et al. A systematic review and meta-analysis of complications among various reduction malarplasty. *Aesthetic Plast Surg*. 2023;47:1018-1038.

Facelift surgery and nerve injury: a systematic review and meta-analysis.

Abstract Presenter: Gonçalo Gandra

Abstract Co-Author: Ricardo Horta

Background: Advances in surgical procedures improved the safety profile of aesthetic surgery. Several side effects have been described for facelift surgeries, and nerve injuries are one of the most feared due to their impact on quality of life. The main objective of this work is to evaluate the rate and type of nerve injury during facelift procedures through a systematic review.

Methods: PubMed®, EMBASE® and Web of Science® databases were searched for articles on nerve injury rates after facelift surgeries using controlled and non-controlled terms to establish search queries. Three investigators independently assessed the eligibility of publications, first based on the title and abstract and then based on the full text. The DerSimonian-Laird random effects model was used for proportion estimation through a meta-analysis.

Results: A total of 67 eligible publications with a total of 15404 patients and 15441 procedures were included in the analysis according to the eligibility criteria. The overall estimated pooled motor and sensory nerve damage rate was 0.66% (95% confidence interval [95%CI]: [0.5% ; 0.9%], $Z = 6.07$, $p < .001$) and 0.39% (95%CI: [0.2% ; 0.6%], $Z = 4.16$, $p < .001$), respectively. For permanent neuronal damage, the estimated pooled rates were 0.047% (95%CI: [0.0% ; 0.1%], $Z = 2.69$, $p = .007$) and 0.045% (95%CI: [0.0% ; 0.1%], $Z = 2.63$, $p = .009$), respectively, for motor and sensory nerve damage.

Conclusions: The recognition of nerve damage as a serious complication of facelift surgery is increasing, although the estimated pooled rate is less than 1%.

Flap Fortification: Impact of Intraoperative Microsurgical Intervention on Vascular Compromise in Breast Reconstruction

Abstract Presenter: Ayaka N. Deguchi MD

Abstract Co-Author(s): Mehdi Lemdani, Salman Khan, Malia Voytik MD, Margaret Hornick MD, Robyn Broach, Joseph Serletti MD

Purpose: Although flap complication due to vascular compromise is rare with patent anastomoses, it is devastating to breast reconstruction patients when it results in flap failure, which is reported to occur from 3-5% of free flap reconstructions. Intervention to prevent such complication occur as early as intraoperatively, but how these actions impact postoperatively have not been thoroughly investigated. Moreover, as preliminary studies discuss, the unpredictability of vascular compromise remains a challenge; even when surgeons implement early intraoperative interventions, the fate of the flap may be uncertain. This study evaluates the efficacy of these immediate corrective procedures and how intraoperative microsurgical procedures impact clinical outcomes such as complication and flap survival rate in free flap breast reconstruction.

Materials and Methods: A retrospective chart review of patients who underwent free flap breast reconstruction between April 2004 to June 2023 at a single institution was conducted. A cohort of free flaps with vascular compromise that received intraoperative repeat anastomosis was compared with those who did not undergo intraoperative intervention but returned postoperatively for repeat anastomosis.

Results: A total of 3,521 patients with 6,245 flaps were reviewed. Of those, 273 flaps (186 flaps with intraoperative and 87 flaps with postoperative interventions) were included in our study. Demographics, comorbidities, and operative details such as flap types did not differ significantly in two cohorts. Intraoperative re-anastomosis cohort had significantly lower rates of surgical site infection, seroma, and fat necrosis (odds ratio [OR] 0.11, $p < 0.001$; OR 0.30, $p = 0.03$; OR 0.27, $p = 0.01$, respectively). Flap loss rate due to vascular compromise was also significantly lower in intraoperative group (OR 0.17, $p < 0.001$). The rate of overall flap loss was found to be 0.93%.

Conclusion: Findings from this comprehensive study indicate that proactive intervention in an intraoperative setting when vascular compromise is concerned is ideal as it optimizes clinical outcomes and flap success rate. As a result, highlighting the importance of early interventions for managing vascular compromise promotes refinement of both surgical skills and decision-making among surgeons, ultimately enhancing patient safety in free flap breast reconstruction.

Free Fibular Flap for Clavicle Reconstruction An Orthoplastic Approach – A Multicentric Case Series

Abstract Presenter: Simone Magistri MD

Abstract Co-Author(s): Michele Maruccia, Rossella Elia, Giuseppe Giudice

Background: Clavicular reconstruction poses several challenges to the reconstructive surgeons, especially when a long bone defect (>6cm) needs to be addressed. The rarity of the condition with the related scarce number of reported cases contributes to the lack of standardization. The aim of this paper is to contribute to the existing literature by presenting a European multicentre case series on the use of free fibula flap for clavicle reconstruction and reporting on the outcomes in a uniform manner. At the same time, the objective is to apply orthoplastic concepts to suggest technical tips in order to maximise the success of the procedure.

Methods: Adult patients affected by clavicular bone loss due to trauma, infection, or oncological resections, were included. Surgical outcomes were measured in terms of bone healing and functional recovery through pre-operative and post-operative Disability of Arm, Shoulder, and Hand (DASH) and Constant-Murley score. Complication rates were recorded. Patients were followed-up with radiographs obtained at 1,3,6,9 and 12 months.

Results: Nine patients with a mean age of 44.4 ± 16.4 yo were included. The mean clavicular bone defect was 8.5 ± 2.8 cm. The etiologies of defect were sarcoma excision (5/9) fracture-related infection (2/9), osteoradionecrosis (1/9) and chronic sclerosing osteomyelitis of Garré (1/9). The average follow-up was 32.8 ± 13.1 months. A successful bone union was achieved in all cases after 180 ± 20 days. Significant improvements in both the DASH and Constant-Murley score were recorded. Six patients regained full range of motion. No flap complications were reported. In two cases an additional procedure was performed due to exposed metalwork and poor cosmesis. Orthoplastic principles were applied, such as dual plate fixation in a 90° configuration and use of minifragment plates.

Conclusions: This study supports the fibular flap's efficacy in reconstructing critical-sized clavicular defects and emphasizes technical strategies to reach the stability of the final construct and optimize the functional outcome.

Free Flap Reconstruction following Mohs Surgery: Our Approach to Complex Skin Cancer on Scalp

Abstract Presenter: Ayaka N. Deguchi MD

Abstract Co-Author(s): Niv Milbar MD, Andrew Pregnall, Stephanie Wang, Salman Khan, Malia Voytik MD, Margaret Hornick MD, Stephen Kovach MD, Christopher Miller, Robyn Broach, Jason Wink

Purpose: Moh's micrographic surgery (MMS) allows real-time evaluation of margins during tumor excision for skin cancer, enabling minimal resection of healthy surrounding tissues. Reconstruction of the scalp following MMS presents unique challenges due to the inelasticity of the skin and paucity of available tissue for coverage. These challenges are often compounded by radiation treatment, extensive defect size, and the use of implants, which make reconstruction methods such as local flaps and skin grafts difficult to apply. As a result, free flap reconstruction has become a key treatment for managing these complex cases at our institution. However, no comprehensive study has fully investigated this approach for treating complex scalp defects after MMS. This study aims to demonstrate the utility of the free flap after MMS and evaluate factors associated with complications.

Method: A single-center retrospective chart review of patients undergoing MMS of scalp and subsequent free flap reconstruction between March 2010 to June 2024 was conducted. Demographics, comorbidities, perioperative details were collected and analyzed. Additionally, scalp defect complexity after MMS was categorized according to (1) preoperative and postoperative radiation exposure, (2) defect size greater than the median, and (3) implant use. Defects meeting two or more of these criteria were classified as complex. Outcomes were compared between patients with complex and non-complex defects for granular analysis.

Results: Fifty-six patients (49 males, 7 females) with the median age of 73 (IQR 65-78) years were included in our study. Most skin cancers were basal cell carcinoma (23.3%) and squamous cell carcinoma (64.3%), located predominantly on the vertex or across multiple areas of scalp (12.5% and 50%, respectively). The median defect size was 112 (IQR 65.3-169) cm². The anterolateral thigh and latissimus dorsi flaps were the two prevalent free flaps used for reconstruction (58.3% and 38.3%, respectively). Lesion recurrence rate within 1 year was 14.5%. BMI had significant correlation with incidence rate of delayed wound healing (OR 1.34, p=0.029). Age and defect size had significant association with overall complication rate (OR 1.08, p=0.0476, OR 1.02, p=0.025, respectively). Comorbidities, types of cancer, and lesion locations were not significantly correlated with other complications such as dehiscence, partial necrosis, and implant exposure. Furthermore, patients with highly complex defects had significantly higher incidences of delayed wound healing (OR 2.36, p=0.009) and dehiscence (OR 8.24, p=0.03).

Conclusion: Our study is unique in that it offers a detailed analysis of the complexity of scalp defects following MMS by categorizing them based on various factors and evaluating their clinical outcomes. The findings from our study demonstrate the versatility and effectiveness of free flap reconstruction for complex scalp defects regardless of lesion types and locations. Severely complex defects, which were associated with higher complication rates, further emphasize the necessity of free flap reconstruction as the preferred option over local flaps and skin grafts for scalp coverage after MMS. In addition, this study advocates for a continued collaboration of plastic surgeons and Mohs surgeons, promoting a multidisciplinary approach to optimize patient outcomes for the treatment of challenging scalp defects.

Functional and Anatomical Diversity of the Anterolateral Thigh Flap: Various Innovative Reconstructive Strategies

Abstract Presenter: Surya Yashaswi P V S MD

Abstract Co-Author(s): Sanjay Kumar Giri, Santanu Suba

Purpose: The anterolateral thigh (ALT) free flap has been widely used in reconstructive surgery due to its consistent vascular anatomy and adaptability. This study highlights its versatility in reconstructing defects across various anatomical regions, emphasizing its functional and structural benefits. The sensate anterolateral thigh flap is typically described as innervated by the lateral cutaneous femoral nerve (1). The motor nerve to the vastus lateralis muscle is commonly encountered in close proximity to the vascular pedicle (2). We have aimed to provide a good sensory or a functional result after reconstruction by means of coaptation of one of these nerves in various reconstructive procedures.

Methods and Materials: A retrospective analysis of 52 patients who underwent ALT-free flap reconstruction from January 2020 to December 2024 was conducted. Indications included reconstruction for oral onco-resection, scalp defects, foot and leg defects, scrotal reconstruction, post-burn contracture release for hand and forearm defects, palatal defects, and hemifacial atrophy (Parry-Romberg syndrome). Functional modifications included lingual nerve coaptation with the lateral cutaneous femoral nerve for neo-tongue sensation after glossectomy and hypoglossal nerve coaptation for motor innervation of the vastus lateralis muscle to prevent atrophy, which acts as a support and filler in oral and maxillary reconstruction. Foot and hand defects were also reconstructed with sensate flaps. The demographic information, pathologic diagnosis,

defect location, flap size, flap anatomy, technique of flap harvest, recipient vessels used, and flap's form and functional outcomes were evaluated postoperatively.

Experience and Follow-up: All 52 patients underwent ALT flap reconstruction with follow-ups ranging from 6 to 24 months. Flap success rate, functional restoration, sensory outcomes and complication rates were analyzed.

Results and observations: The ALT flap demonstrated adaptability in terms of thickness, skin paddle size, and incorporation of muscle and nerve components. Functional integration improved outcomes, particularly in oral reconstruction, where motor-innervated vastus lateralis muscle provided structural support and prevented atrophy. The anatomical origin of perforators supplying the flap was noted from the descending branch of lateral circumflex femoral in 86.5% and from the oblique branch in 13.5%. Musculocutaneous perforators accounted for 52.5%, septocutaneous for 31.2%, and musculo-septocutaneous for 28.7%. The overall flap survival rate was 94.2%. Follow-up revealed good functional outcomes, including speech and deglutition in oral reconstruction, and a good sensory outcome in sensate flap for hand and foot reconstruction.

Conclusions: The ALT flap is a highly reliable and customizable option for soft tissue reconstruction across multiple anatomical regions. Its ability to be harvested in various configurations, provide functional restoration, and minimize donor-site morbidity makes it a superior choice in many complex reconstructions with good functional outcomes.

References

- 1) Ribuffo D, Cigna E, Gargano F, Spalvieri C, Scuderi N. The innervated anterolateral thigh flap: anatomical study and clinical implications. *Plast Reconstr Surg.* 2005 Feb;115(2):464-70. doi: 10.1097/01.prs.0000149481.73952.f3. PMID: 15692351.
- 2) Casey WJ III, Rebecca AM, Smith AA, Craft RO, Hayden RE, Buchel EW. Vastus lateralis motor nerve can adversely affect anterolateral thigh flap harvest. *Plast Reconstr Surg.* 2007;120(1):196–201 17572563

Giant Atypical Fibroxanthoma: A Case Report

Abstract Presenter: BETSABETH PALADINES

Abstract Co-Author(s): Juan Cruz Montes de Oca, Esteban Giusti, Alejandro Gomez Lucyszyn

Introduction: Atypical fibroxanthoma (AFX) is a rare mesenchymal-derived dermal neoplasm with intermediate malignancy. Its histogenesis remains unknown. It predominantly affects elderly individuals, with solar exposure being the primary risk factor. The prognosis is excellent following complete resection of the lesion (1). We present the case of a 30 year old male patient with HIV who developed a large tumor in the scapular region. Histology and immunohistochemistry were consistent with an AFX (Atypical Fibroxanthoma). The coverage defect following the excision of the lesion posed a therapeutic challenge due to its size. It was resolved using a meshed split-thickness skin graft.

Accurate diagnostic orientation is crucial for guiding appropriate treatment and determining the most viable reconstruction approach. Surgical treatment is typically definitive. Metastasis is uncommon(2).

Materials and Methods: A retrospective analysis was conducted on the clinical case of a 31-year-old male patient with HIV undergoing treatment and a history of smoking. He presented with a 15 x 15 cm nodular mass in the left scapular region, characterized by firm consistency, lack of deep plane adherence, irregular borders, and a tendency to bleed, with a 3-year progression.

Given the significant coverage defect and the complexity of the affected area, a partial-thickness mesh skin graft obtained from the anterior side of the leg was used for coverage. Immunohistochemical profiling was consistent with AFX.

Discussion: Research has explored the utility of LN-2 (a 35 kDa protein expressed in B lymphocytes) to distinguish AFX and achieve a definitive diagnosis (3).

The clinical presentation in our patient was atypical, as he was young and the affected area (scapular region) was not sun-exposed. The definitive diagnosis was achieved through histopathology and immunostaining, without the use of LN-2, which is less Accessible (4).

Large tumors often leave significant coverage defects, posing reconstruction challenges.

Partial-thickness skin grafts are effective for covering extensive areas, providing good aesthetic and functional outcomes, and are reproducible (5).

Conclusion: AFX is a rare tumor with intermediate malignant potential, generally exhibiting an excellent prognosis post-resection. However, patients should be monitored every 6 months due to the risk of recurrence, metastasis, and the development of additional skin tumors.

References:

1. Romera E, Minaudo C, Vigovich. Vista de Fibroxantoma atípico y sarcoma pleomórfico dérmico: distintos grados de malignidad de una misma entidad [Internet].2023 [citado el 13 de febrero de 2025]. Disponible en: <https://dermatolarg.org.ar/index.php/dermatolarg/article/view/2451/1361>
2. Kolb L, Schmieder GJ. Atypical fibroxanthoma. En: StatPearls. Treasure Island (FL): StatPearls Publishing; 2025. [citado el 13 de febrero de 2025]. Disponible en: <https://www.ncbi.nlm.nih.gov/books/NBK459342/>
3. De la Fuente EG, Sols M, Pinedo F, Álvarez-Fernández JG, Vicente FJ, Naz E, et al. Fibroxantoma atípico. Estudio clinicopatológico de 10 casos. Actas Dermosifiliogr [Internet]. 2005 [citado el 13 de febrero de 2025];96(3):153–8. Disponible en: <https://www.actasdermo.org/es-fibroxantoma-atipico-estudio-clinicopatologico-10-articulo-13073612>
4. McClure E, Michael J, Ayushi P, et al. Atypical Fibroxanthoma: Outcomes from a Large Single Institution Series .2023 [citado el 13 de febrero de 2025]. Disponible en: http://file:///C:/Users/medico/Downloads/10.1177_10732748231155699.pdf
5. Iñigo C, Castillo J, Manuel L. Atypical fibroxanthoma.2017 [citado el 13 de febrero de 2025]. Disponible en: <http://file:///C:/Users/medico/Downloads/1130-0558-maxi-39-04-00250.pdf>

Gluteal reconstruction in a rare case of panniculitis-like T-cell non-Hodgkin's lymphoma with alpha-beta receptors: plastic and oncohematologic surgical considerations.

Abstract Presenter: Zorin Crainiceanu MD

Aim: The objective of this study is to present a complex case of surgical and hematological treatment in a 31-year-old female patient diagnosed with peripheral T-cell non-Hodgkin lymphoma with panniculitis-like features, associated with a soft tissue defect following a gluteal abscess and complicated by *Pseudomonas aeruginosa* infection, a rare pathology with no standardized therapeutic protocol.

Method: The patient was initially treated for a left gluteal abscess, which subsequently led to a significant soft tissue defect. Following multiple biopsies, she was diagnosed with peripheral T-cell non-Hodgkin lymphoma with panniculitis-like features and alpha/beta receptors. An initial attempt was made to close the defect using two local rotational flaps. After this, during specific hematological treatment (CHOEP21 regimen), serial debridements and negative pressure wound therapy (VAC) were performed. The

evolution of the patient's condition was marked by wound dehiscence and infection with multidrug-resistant *Pseudomonas aeruginosa*, a condition that was exacerbated by immunosuppressive therapy. Concurrently, an Integra® double-layer dermal regeneration template graft was applied, followed by negative pressure therapy and local dressings (Hyalo 4 Regen sponge). Between CHOEP21 chemotherapy cycles, advanced wound management techniques were employed to optimize skin closure.

Results/Discussion: Despite challenges related to immunosuppression and infection, the combined surgical and hematological treatment led to complete disease remission and closure of the gluteal defect. The split-thickness skin grafts applied were partially rejected; however, the use of negative pressure therapy and the Integra® dermal regeneration template facilitated complete tissue regeneration. The application of Integra® dermal regeneration template in combination with VAC therapy was found to be essential in promoting tissue regeneration in an oncologic patient with complex wounds. Furthermore, complete remission of non-Hodgkin lymphoma was observed following six cycles of chemotherapy.

Conclusions: A multidisciplinary approach that combines specialized hematological therapy, negative pressure wound therapy, and the Integra® dermal regeneration template has demonstrated effectiveness in managing a complex soft tissue defect within a rare oncological context that lacks a standardized treatment protocol. This strategy may serve as a therapeutic model for similar cases and underscores the essential collaboration among surgical, hematological, and dermatological specialties.

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Hand rejuvenation: Unique features and signs of aging with lipofilling as a treatment option

Abstract Presenter: Gonçalo Gandra

Abstract Co-Author: Rita Valenca Filipe

Background: The hand is a part of the human body with unique characteristics that combine functionality and aesthetics with great social and emotional significance. It plays a crucial role in daily activities, serves as a "work tool" and is essential for leisure and sports. Emotionally and socially, the hand is involved in actions such as shaking or holding hands, physical displays of affection such as hugging and touching, and is also

a symbol of beauty and youth, often adorned with jewelry. However, as we age, noticeable changes occur, known as "tell-tale signs". These include skin discoloration, roughness, wrinkles and a loss of tissue volume (protruding veins, prominent tendons and bones, and deeper and wider spaces between the fingers). These changes often contrast with the appearance of the face and reveal a person's true age. To combat these signs of aging, volume restoration techniques are used with fillers such as hyaluronic acid, poly-L-lactic acid, calcium hydroxyapatite and autologous fat (lipofilling).

Methods: This study presents two clinical cases of patients who underwent lipofilling of the hand and had fat harvested from different areas of the body. In the first case, fat was harvested from the abdomen, thighs and back. In the second case, the fat was taken mainly from the front of the abdomen and the flanks as part of an abdominoplasty. Both procedures were performed under general anesthesia. The areas to be liposuctioned were infiltrated with a solution of saline, adrenaline and tranexamic acid. After liposuction, the fat was decanted and then used for lipofilling of the back of the hand.

Discussion: Fat grafting or lipofilling is a widely used technique in plastic surgery to restore volume and correct deformities. It is used in aesthetic surgery of the breast, buttocks, calves and reconstructive surgery of the face, breast, hands and body. This technique, also known as lipoinjection, fat grafting, liposculpture and autologous fat transfer, offers several advantages over hyaluronic acid fillers, including longer durability and longevity, a lower risk of allergic reactions and a lower risk of infection. It can also be combined with other procedures and performed under general or local anesthesia.

Conclusion: Lipofilling is a safe, quick and effective technique for restoring volume to aging hands. It can be combined with other techniques and offers long-lasting results with high patient satisfaction. This study highlights the benefits of lipofilling as a reliable option for hand rejuvenation and illustrates its potential to improve both functional and esthetic outcomes in patients with aging hands.

IMMEDIATE BREAST RECONSTRUCTION IN LARGE BREASTS

INTRODUCTION AND OBJECTIVES: Reconstruction in large breasts after mastectomy presents a challenge for plastic surgeons. An ambitious mastopexy design, a mastectomy sometimes performed by another surgeon, the use of excessively large

implants, and the comorbidities associated with breast cancer treatment significantly increase the likelihood of reconstructive failure. The most concerning complications include implant exposure and necrosis of the nipple-areola complex (NAC). We aim to present the reconstructive technique we use for this type of patient.

MATERIALS AND METHODS: In our hospital, we have performed immediate breast reconstruction on 86 patients (168 breasts) from January 2017 to February 2023. We selected the largest breasts based on an SN-N distance greater than 25 cm, leaving 58 women (107 breasts). Regarding the surgical technique, we performed mastectomy using a Wise-pattern design, utilizing a superomedial pedicle for the NAC or NAC graft based on individualized oncological criteria. Implant placement depends on skin pinch assessment. Additionally, we use an inferior dermofascial flap with a dual purpose: protecting the implant in the most critical area of the T incision and enhancing the aesthetic contour of the lower pole.

RESULTS: The mean age of the reconstructed patients was 44.7 years, with an average BMI of 27.1 kg/m² and an SN-N distance of 29 cm. Among the patients, 33% were smokers. Additionally, 22% had a history of prior breast surgery, 14.3% had received radiotherapy, and 31.9% had undergone prior chemotherapy. Notably, 88% of the women were BRCA1/BRCA2 gene carriers. Mean follow up time was 18 months. Regarding resection type, 77% of breasts underwent nipple-sparing mastectomy (NSM) with a superomedial pedicle NAC. In 15%, skin-sparing mastectomy (SSM) with NAC grafting was performed, and in 7%, NAC preservation was not possible.

A Wise-pattern inverted T approach was used in 60% of cases, while a periareolar approach was employed in 30%.

Direct-to-implant reconstruction was performed in 88% of cases, expanders were used in 10%, and immediate autologous reconstruction with a DIEP flap was performed in 2%.

Regarding implant placement, 70% were positioned in a retropectoral pocket, while 30% were placed in a subcutaneous plane.

Complications occurred in 22% of the breasts, all managed conservatively. Surgical revision or debridement was required in 15% of cases. The implant replacement rate was 7.5%, and the explantation rate was approximately 5%.

CONCLUSIONS: We believe that T-mastectomy with an inferior dermofascial flap can be an excellent option for the reconstruction of large breasts after mastectomy. Our technique ensures oncological safety, as it allows for easy surgical revision if positive margins are present. Finally, we highlight that our approach can remain as a definitive reconstruction technique or serve as the initial stage of the Delayed-Immediate

Microsurgical Breast Reconstruction technique when indicated, thereby benefiting from its advantages.

Incidence of Breast Cancer Related Lymphoedema: A 10-year follow up study

Abstract Presenter: Sally Ng MBBS, DIPSURGANAT, FRACS

Abstract Co-Author: Min Zhang

Background: Breast cancer related lymphoedema (BCRL) affects up to 58% of breast cancer patients who undergo nodal dissection, chemotherapy and radiotherapy as part of their cancer treatment. The risk of developing BCRL varies between individuals, and this is likely due to underlying anatomical variations of the lymphatic pathway and other patient or treatment related factors. BCRL leads to reduced quality of life and increased risk of cellulitis. The bioimpedance spectroscopy (BIS) technology is a simple and non-invasive screening tool that can be used to enable early diagnosis of subclinical lymphoedema and allow early intervention.

Materials and methods: A prospective single centre study was conducted on patients diagnosed with breast cancer who are scheduled to commence taxane based chemotherapy or undergo axillary clearance surgery. Patients received a baseline BIS measurement, and had follow up at 12 months up to 10 years post-surgery. The aim of our study is to review the incidence of lymphoedema beyond the routine surveillance program and correlate the findings with the physical symptoms and quality of life survey.

Results: Total of 30 patients are enrolled in this study to analyse their BIS reading and determine if they developed lymphoedema.

Conclusions: This study aims to identify the long-term incidence of BCRL with up to 10 years follow up. Early identification with screening can help to facilitate timely intervention and therefore reduce the progression and severity of lymphoedema. This can enhance patient outcomes by preventing complications and improving overall quality of life.

Innovative Rhinoplasty Techniques for Binder Syndrome: Beyond Traditional Approaches

Abstract Presenter: Shivangi Saha MD

Abstract Co-Author: Maneesh Singhal MD, FACS

Background: Binder syndrome, a rare congenital disorder characterized by midfacial hypoplasia, nasal flattening, and an acute nasolabial angle, presents both aesthetic and functional challenges. Conventional rhinoplasty techniques often fail to comprehensively address its complex anatomical deficiencies. This study evaluates a novel multicomponent approach for nasal reconstruction in Binder syndrome using autologous costal cartilage and ultradiced cartilage in fascia.

Methods: A retrospective analysis was conducted on 26 patients (22 females, 4 males) diagnosed with Binder syndrome who underwent augmentation rhinoplasty between May 2021 and June 2024. The mean age at surgery was 21.7 years (SD = 4.6). Preoperative assessments included clinical examination, cephalometric analysis of nasolabial and nasofrontal angles, nasal projection, and dorsal length. Surgical correction was performed under general anesthesia using a transcolumellar open rhinoplasty approach. A sixth costal cartilage graft was harvested and sculpted into an L-strut to augment the nasal dorsum and anterior nasal spine. Pyriform aperture augmentation was achieved using crescent-shaped cartilage grafts. A shield graft was placed at the tip to enhance projection, while ultradiced cartilage in fascia provided dorsal camouflage. Low-to-high osteotomies were performed for nasal base narrowing and dorsal height enhancement.

Postoperative evaluations included standardized lateral facial photography, cephalometric reanalysis, and patient-reported satisfaction using a 5-point Likert scale. The mean follow-up period was 11.7 months (SD = 4.2), with assessments conducted at 3, 6, and 12 months postoperatively. Statistical analysis was performed using IBM SPSS v22, with paired t-tests and Mann-Whitney U tests used to compare pre- and postoperative variables.

Results: Postoperatively, nasal projection improved significantly from 9.34 mm (SD = 3.0) to 13.77 mm (SD = 3.4) ($P = 0.003$). The nasofrontal angle decreased from 133.14° (SD = 9.4°) to 126.57° (SD = 8.3°) ($P = 0.05$), and the nasolabial angle increased from 78.3° (SD = 13.2°) to 81.54° (SD = 11.5°) ($P = 0.28$). Three patients (11.5%) reported dissatisfaction with nasal projection, and one (3.8%) experienced cartilage extrusion requiring revision.

Conclusion: This multicomponent technique offers a comprehensive, stable, and aesthetically superior approach to nasal reconstruction in Binder syndrome. Long-term follow-up is needed to assess sustained structural integrity and patient satisfaction.

References:

1. Binder KH. Dysostosis maxillo-nasalis, ein arhinencephaler mißbildungskomplex. Deut Zahnärztl Zschr. 1962;17:438–44.
2. Zuckerkandl E. Fossae praenasales: normale und pathologische. Anat Nasenhohle. 1882;1(1):48.
3. Delaire J, Tessier P, Tulasne JF, Resche F. Clinical and radiologic aspects of maxillonasal dysostosis (binder syndrome). Head Neck Surg. 1980;3(2):105–22.
4. Draf W, Bockmühl U, Hoffmann B. Nasal correction in maxillonasal dysplasia (Binder's syndrome): a long term follow-up study. Br J Plast Surg. 2003;56(3):199–204.
5. Monasterio FO, Molina F, McClintock JS. Nasal Correction in Binder's Syndrome: The Evolution of a Treatment Plan. Aesthetic Plast Surg. 1997 Sep 1;21(5):299–308.

Integrated Reconstructive Management of Periocular Complications Following Bilateral Blepharoplasty: A Case Report

Abstract Presenter: Matilde Tettamanzi

The correction of iatrogenic ectropion of the lower lid represents one of the most complex surgical challenges for the Plastic Surgeon. These complications compromise both the functionality and aesthetics of the periocular area, and corrective interventions aim to restore the functionality and anatomy of the region. The combination of multiple complications often requires the use of various surgical techniques to resolve the problem. We present the clinical case of a 46-year-old woman who came to our attention following bilateral upper and lower blepharoplasty, performed in a private facility by another professional approximately 6 months ago. She presented with third-degree ectropion and lagophthalmos of the left lower eyelid, and second-degree ectropion of the right lower eyelid. Surgical interventions to correct these problems often require skin and cartilage grafts, which often result in recurrences and suboptimal scarring outcomes. The patient expressed reluctance towards the adoption of skin and cartilage grafts taken from another site, so it was decided to opt for correction through midface lift, lateral canthoplasty, tarsal strip, and conjunctival excision. The follow-up confirmed the success of the surgical procedure, allowing for the correction and restoration of eyelid functionality and aesthetics, avoiding sacrifices of third-party donor areas and with great patient satisfaction.

INTERNAL BREAST LIFT: A NEW METHOD FOR PERFORMING INTERNAL MASTOPEXY.

Abstract Presenter: Getulio Duarte Junior MD, MSc

Introduction: Mastopexy combined with implant placement is a complex cosmetic surgery due to the dual nature of the procedure. Various mammoplasty techniques and implant types add to its intricacy (1,2,3,4). This study aims to evaluate the effectiveness of an internal breast lift in correcting pseudoptosis, grade 1 breast ptosis, and asymmetries, thereby offering a safer alternative with reduced morbidity and avoiding the creation of an inverted "T" scar.

Methods: From January 2020 to January 2022, twenty female patients with pseudoptosis, grade I breast ptosis as per the Regnault classification, and a subareolar-to-mammary groove distance under 7cm were selected. For those with breast tissue hypertrophy, internal tissue resection maintained a minimum thickness of 3 cm. Patients with areolar asymmetries but without breast ptosis were also included. Surgical access was achieved via the mammary fold or periareolar approach. The procedure involved internal mastopexy between the mammary gland and the pectoralis major muscle's superomedial portion, coupled with polyurethane implant insertion.

Results: Significant elevations in the areola and breast tissue were noted in patients with pseudoptosis and grade I breast ptosis, with a notable pre- and postoperative difference (Student's t-test, $p \leq 0.050$). Additionally, there was an improvement in areolar and breast tissue positioning in asymmetrical cases. Patient satisfaction and a 1-year follow-up were also part of the assessment.

Conclusion: The internal breast lift emerges as a safe and aesthetically pleasing alternative for patients with pseudoptosis and grade I breast ptosis. It effectively enhances areolar symmetry without the need for an inverted "T" scar.

REFERENCES

1. Wise RJ. A preliminary report on a method of planning the mammoplasty. *Plast Reconstr Surg* (1946). 1956 May;17(5):367-75. doi: 10.1097/00006534-195605000-00004. PMID: 13335513.
2. Pitanguy I. Mammoplasty. Study of 245 consecutive cases and presentation of a personal technic. *Rev. Bras. Cir.* 1961;42:201-20.

3. Pontes R. Reduction mammoplasty: variations I and II. *Ann Plast Surg.* 1981;6(6): 437–47

4. Kakagia D, Tripsiannis G, Tsoutsos D. Breast feeding after reduction mammoplasty, a comparison of 3 techniques. *Ann Plast Surg.* 2005;55(4):343-5.

Keystone Flap: A great challenge to cover defects without tensions. Case Report.

Abstract Presenter: HERNAN GUAUTA

Abstract Co-Author(s): Juan Cruz Montes de Oca, Ivana Fatica MD, Hugo Benitez

Introduction: The Keystone perforator island flap (KPIF) is a surgical technique described by Behan in 2003 to repair skin defects after the removal of benign and malignant lesions in different body regions. (1)Its curvilinear trapezoidal design mimics the keystone in Roman architecture, ensuring stability and even tension distribution in surrounding tissues. (2)

Materials: This report presents the case of a 24-year-old male with an 11x9 cm supra-scapular lesion, at high risk of dehiscence and movement limitation due to skin tension in this osteomuscular region. Reconstruction with a Keystone flap was chosen to demonstrate its reliability in defects of various sizes and locations, allowing tension-free closure.

Results: The patient was referred from thoracic surgery due to the unavailability of plastic surgery. His exophytic, mobile, polypoid lesion had evolved over four years, with no history of burns or trauma. A previous biopsy revealed lymphocytic infiltration, and a CT scan showed mild displacement of dorsal muscles without deep bone or muscle infiltration.

Under general anesthesia, the lesion was excised and a trapezoidal Keystone flap was designed parallel to known perforating vessels and nerves. Blunt dissection and partial fascia release were performed to facilitate mobilization and reduce tension. Closure was achieved with separate 3-0 nylon sutures, ensuring balanced tension distribution with a V-Y advancement technique at the flap's edges.

During the procedure, blunt dissection was performed along the marked lines, mobilizing the surrounding tissue to facilitate flap advancement and approximation. A slight release at the deep fascia level was made on the external flap or external

curvature to achieve closure. Separated sutures were placed using 3-0 nylon in a 1-3 alignment, meaning two sutures on the external curvature and one simple suture on the minor curvature, ensuring tension force balance. The advancement was completed using a V-Y technique at each flap end along the longitudinal axis, creating greater laxity and reducing tension. This was performed at the right angles, which were later excised, and the wound closure was completed with Hemming sutures

Discussion: In this case, adequate perfusion and laxity were achieved without excessive tension. During the postoperative period, the patient performed progressive movements without restrictions. At four weeks, the wound healed without infection or dehiscence, and shoulder mobility was preserved.

Conclusion: The Keystone flap is an excellent, simple, and reliable option for restoring skin defects, aligned with dermatomal segments throughout the body. The characteristics of vascular territories supplied by individual perforators, emphasized in Saint-Cyr et al.'s "perforosome theory," play a crucial role in the success of the trapezoidal flap design and its robust vascularization.(3)

The Keystone flap is a versatile and reliable technique for reconstructing skin defects, based on the perforosome theory and the vascularization of perforators. Its use can be extended to complex defects or combined with other flaps in major reconstructive cases.

Bibliography:

*(1) Behan FC. The Keystone Design Perforator Island Flap in reconstructive surgery. ANZ J Surg. 2003 Mar;73(3):112-20. doi: 10.1046/j.1445-2197.2003.02638.x. PMID: 12608972.

* Ettinger KS, Fernandes RP, Arce K. Keystone Flap. Atlas Oral Maxillofac Surg Clin North Am. 2020 Mar;28(1):29-42. doi: 10.1016/j.cxom.2019.10.001. Epub 2019 Dec 5. PMID: 32008707

* (2)Yoon CS, Kong YT, Lim SY, Kim J, Shin HW, Kim KN. A comparative study for tension-reducing effect of Type I and Type II keystone perforator island flap in the human back. Sci Rep. 2021 Aug 17;11(1):16699. doi: 10.1038/s41598-021-96272-0. PMID: 34404867; PMCID: PMC8371087.

* (3)Mohan AT, Rammos CK, Akhavan AA, Martinez J, Wu PS, Moran SL, Sim FH, Behan F, Mardini S, Saint-Cyr M. Evolving Concepts of Keystone Perforator Island Flaps (KPIF): Principles of Perforator Anatomy, Design Modifications, and Extended Clinical Applications. Plast Reconstr Surg. 2016 Jun;137(6):1909-1920. doi: 10.1097/PRS.0000000000002228. PMID: 26895582.

Management Of Acute Facial Burns With Use Of Collagen Sheets: Excellent Results Achieved With Simple And Cost Effective Technique

Abstract Presenter: Shailesh Ranade

Introduction: An individual Face is the very identity of the person in the Society. Any disfigurement of face causes an extraordinary psychological trauma to the person. Acute Facial Burns presents a unique challenge for the Burns Surgeon. Most of the scars on other parts of body can be hidden by clothing or other means. But the facial scars are visible at first sight (1). Thus prevention of facial scarring and disfigurement must be one of the main aims of treatment of Burns involving the face.

Face has tremendous potential to heal primarily as facial skin has a robust blood supply and is more resistant to infection. As there is a high potential for facial burns to heal on their own, an unnecessary excision of burned area, which would have healed primarily, will give cosmetically inferior result.

Collagen sheets are produced from bovine collagen. They are Cheap & easily available temporary Biological Substitutes. They have good handling property & can cover large areas in one time. They act as a barrier against infection, provide moist environment & promote epithelialization. They reduce pain, reduce oozing of fluid, thus fluid loss. The author presents a series of 70 cases of Facial Burns treated with application of Collagen sheets.

Material & Methods: Within first 24 – 48 hours, as soon as phase of Burns shock was adequately treated, after confirming no major respiratory burns related risks of anaesthesia, facial burn wounds were cleaned with Normal Saline & debrided under anaesthesia. The burn wounds were then covered with wet collagen sheets. The collagen sheets were fixed to burn wound edges with fine sutures, skin tapes or skin staples, creating a virtual facemask. The facial wounds were observed for collection of serum or pus. Small collections were drained by making a small window. Collagen sheets could be reapplied by bedside if there was any loss of collagen. By 10-14 days, the collagen sheets separated on their own, once epithelialization was complete. The patients were followed up regularly at one, three, six and 12 months.

Summary of Results: A series of 70 cases included 41 males and 29 females, ranging from 6 months to 80 years. Partial thickness burns especially due to scalds due to hot liquids in children were the commonest. The complications included, formation of hematoma or seroma (9 cases) & infection (4 cases). Seventeen patients required reapplication of collagen sheets, by bedside. Five patients required additional skin

grafting for complete wound healing. The average wound healing was achieved in 16 days. The outcome of facial wound healing was cosmetically very pleasing and satisfying to patients & their families.

Conclusion: Application of wet collagen sheet is a very simple & cost effective solution to treat facial burns, with excellent surgical outcomes with least complications.

Reference:

1. Sarabahi S. Principles and practice of Burn Care. 1st ed. New Delhi, Jaypee Brothers Medical Publishers: 2010.

Managing Giant Vascular Malformations: Two Case Reports

Abstract Presenter: Lisandra Morgado

Abstract Co-Author: Ricardo Horta

Introduction: Vascular malformations are structural and morphological anomalies of blood and lymphatic vessels, which can be classified as capillary, venous, lymphatic, and arteriovenous lesions. These malformations can vary in size and severity, with some growing to giant proportions, severely affecting the patient's quality of life. This report presents two cases of patients with giant vascular malformations who underwent surgical treatment, highlighting the challenges and outcomes associated with their management.

Patients and Methods: A retrospective analysis was conducted on patients with giant vascular malformations who underwent surgical intervention at our center between January 2023 and December 2024.

Discussion: Case 1: A 54-year-old male presented with a giant vascular malformation involving his face and scalp. The patient underwent resection of the malformation, followed by reconstruction of the defect using artificial dermis and hair follicle transplantation. Postoperative recovery was satisfactory, and the patient showed significant improvement in both function and appearance.

Case 2: A 52-year-old female presented with a giant pubic mass that significantly impaired her mobility and caused severe personal hygiene issues. She also had similar lesions on her lower limb. The pubic mass was surgically resected, revealing a

lymphatic malformation. The patient's postoperative recovery was uneventful, and her quality of life significantly improved after the procedure.

Conclusion: Giant vascular malformations are rare and often require complex surgical procedures. Proper preoperative planning and experienced surgical teams are essential to achieve good outcomes and improve patients' quality of life.

Mandibular condyle reconstruction with free fibula osteocutaneous flap : Mid-term results of the fibula suspension method using a suture anchor system

Abstract Presenter: Toshiro Imai MD, PhD

Abstract Co-Author(s): Shinyo Ishi MD, PhD, Yoshimichi Imai

Background: In cases of mandibulectomy involving the condyle, reconstruction of the temporomandibular joint is necessary to preserve masticatory function. We have been reconstructing the mandibular condyle using a free peroneal flap and a Suture Anchor, and we report on the medium-term results of this.

Method: After harvesting the free fibula osteocutaneous flap, the tip of the fibula corresponding to the mandibular condyle is rounded, and the suture anchor (Mitek Suture anchor system®) is inserted into the lateral and posterior surface of the fibula and fixed with sutures, and the fibula is suspended by attaching it to the capsule of the articular capsule. From April 2020 to January 2023, we investigated the masticatory function, diet, postoperative complications, and the shape and position of the reconstructed fibula in 11 cases in which the mandibular condyle was reconstructed using the aforementioned method.

Results: We examined 8 cases in which follow-up was possible for more than 6 months. The underlying diseases were: 4 cases of carcinoma of the gingiva, 2 cases of osteosarcoma, 1 case of ameloblastoma, and 1 case of radiation-induced osteonecrosis of the jaw. The mandibular defects were classified as follows according to the Brown classification: 2 cases were classified as Ic, 5 cases were classified as IIc, and 1 case was classified as IVc. According to the Eichner classification of occlusal support, 6 cases were classified as B2, 1 case was classified as B3, and 1 case was classified as B4. The fibula flaps survived in all cases, and postoperative radiation therapy was administered to 2 cases of carcinoma of the gingiva. At 6 months post-operatively, the Functional Oral Intake Scale (FOIS) was level 6 in one case and level 7

in seven cases, and in many cases, normal food intake was possible. The average score on the Hirose Conversation Classification was 9.8, and there were no cases of pain in the temporomandibular joint. On CT scans taken more than 6 months after surgery, anterior dislocation of the temporomandibular joint was observed in three cases.

Discussion: Various methods have been reported for the mandibular condyle reconstruction, including the use of a plate with condylar prosthesis, autologous cartilage grafting, and insertion of vascularized bone. In this study, the patients' eating function was relatively good at 6 months post-surgery, and it was thought that they had achieved stable occlusion. In the future, we plan to continue to monitor the patient's progress and evaluate the function of the temporomandibular joint, including not only rotational but also gliding movements, before and after surgery, and to continue to investigate the long-term results of this method.

Microsurgical reconstruction of major scalp defects; a perspective from Brisbane, Australia.

Abstract Presenter: Milap RUGHANI

Abstract Co-Author(s): Darryl Dunn, Kieran Rowe, Noah Betar

Background: Australia has the highest incidence of Non Melanoma Skin Cancer in the world. Squamous Cell Carcinoma is the second most common tumour of the scalp and can present with advanced disease.

We present our surgical experience of free flap reconstruction for scalp defects in a tertiary plastic surgery centre.

Methods: Over a 10 year period, 2014 to 2024, we identified 324 patients who underwent major scalp reconstruction; of these we found 76 free flaps were performed.

Results: The majority of patients were male (91%) with median age 72 years (range 35 to 89 years). Reconstruction was performed primarily for SCC (56 cases) followed by Pleomorphic dermal sarcoma (9), Osteoradionecrosis (7), Basal cell carcinoma (1), Burns (2) and Dermatofibrosarcoma Protuberans(1).

The measured defect size ranged from 88x85cm to 220x120cm. The majority of reconstructions utilised Latissimus Dorsi (90%), Anterolateral thigh (9%) and Omentum

(1%) flaps. The superficial temporal vessels were the predominant recipient vessels (82%). Mean ischemic time was 64 minutes.

Pathological tumour clearance was achieved peripherally in 98% and deep in 84% of cases. Further cranium resection was conducted in the form of burring (34%), outer table resection (10%) and full thickness craniectomy (45%).

Microsurgical outcomes noted flap survival in 97%. Complications included haematoma (6 cases) and infection (3 cases).

Conclusions: Our experience highlights the largest series of free flap reconstruction for the scalp. The patient cohort represent high-risk factors presenting with pathologically advanced tumours. We advocate a multidisciplinary approach and share our experience and lessons learned.

Monitoring of Free Flaps in Patients with Dark Skin Using a FLIR Camera

Abstract Presenter: Rado Zic MD

Abstract Co-Author: Zlatko Vlajcic MD, PhD

Free flap monitoring is crucial for early detection of vascular compromise as early intervention can save a compromised flap. Traditional clinical methods, such as tissue color assessment and capillary refill time, are less reliable in dark-skinned individuals so invasive procedures such as a pin prick test need to be performed at regular intervals. Thermal imaging offers a non-invasive, objective method for assessing perfusion in these patients. Thermal imaging is a non-invasive, contactless technique that utilizes infrared technology to detect temperature variations in tissues. Studies have demonstrated its efficacy in early detection of vascular compromise, with temperature differences (ΔT) between the flap and adjacent skin serving as critical indicators. For instance, compromised flaps exhibit a higher ΔT compared to viable ones, and this difference is evident even before clinical signs manifest. However, factors such as ambient and patient temperature can influence accuracy. Despite these limitations, thermal imaging remains a promising tool for enhancing postoperative free flap monitoring across diverse patient populations and authors will present some cases of monitoring of free flaps using a handheld FLIR camera in dark-skinned individuals who had complex reconstructions with free tissue transfer.

References:

1. Nelson Z, O'Neill L, Fisher AH, et al. Postoperative Detection of Free Flap Congestion in a Fitzpatrick Skin Type VI Patient using the FLIR Thermal Imaging Camera: A Case Report and Literature Review. *Case Reports Plast Surg Hand Surg.* 2022;9(1):1-5.
2. Singla P, Dixit PK, Kala PC, et al. Free Flap Monitoring Using Infrared Thermography: An Objective Adjunct to Clinical Monitoring. *Indian J Plast Surg.* 2023;56(2):178-184.
3. Chava S, Chava V, Reddy LV, et al. An Experimental and Clinical Study of Flap Monitoring with Infrared Thermal Imaging. *Bioengineering.* 2023;11(7):688.

Myectomy and Botulinum Toxin Type A Combined Treatment for Severe Facial Spasms

Abstract Presenter: Wellington Menezes Mota MD

Abstract Co-Author(s): Alessandra Salles MD, Cristina Pires Camargo MD, PhD, Henri Friedhofer, Nivaldo Alonso MD

BACKGROUND: Hemifacial spasm (HFS) and blepharospasm (BEB) are among the most prevalent and debilitating craniofacial movement dystonias that originate from the peripheral nervous system. Although botulinum toxin type A (BTxA) is regarded as the standard treatment, myectomy of the periorbital muscles is indicated in cases of refractoriness or disease progression. This study aims to evaluate the efficacy of a combined treatment approach utilizing myectomy and BTxA for the management of severe facial spasms.

METHODS: 11 patients (10 females, mean age 65.18 ± 9.06 years) diagnosed with facial dystonias were assessed between January 1996 and December 2023. Five patients had previously received BTxA treatment and were referred for myectomy due to treatment refractoriness. Myectomies followed the technique of Gillium and Anderson¹. The remaining six patients commenced BTxA therapy after myectomy. BTxA was administered to both hemifaces in accordance with our institutional protocol to avoid facial asymmetries^{2,3}. In patients diagnosed with BEB, bilateral resection of the orbicularis oculi muscle was performed, while preserving the pre-tarsal portion. Additionally, the corrugator, depressor supercillii, and procerus muscles were excised. In the case of HFS, surgical intervention was conducted on the affected side, and bilaterally in instances of bilateral involvement.

RESULTS: Among the patients, three presented with bilateral BEB, while the remainder were diagnosed with HFS. A mean reduction of approximately $19.4 \pm 4.05\%$ (range: 13.3 to 24.7%) in the required BTxA dosage for spasmodic control of the periorbital muscles was observed in all five patients who underwent surgical intervention due to treatment refractoriness, all of whom were diagnosed with HFS. Furthermore, in addition to the reduction in the pre-tarsal BTxA dosage, notable alleviation of lower facial and cervical spasms was observed subsequent to periorbital myectomy. For the other six patients who experienced recurrent spasms post-myectomy, the three individuals who began BTxA treatment within one-year post-surgery included one patient (BEB) who achieved complete remission of spasms after two treatment sessions, while the other two (one BEB and one HFS) exhibited a decrease in the BTxA dosage necessary for spasmodic control. Conversely, the remaining three patients (two with BEB and one with HFS), who commenced treatment after one year, required significantly higher doses of BTxA, consistent with the average dosages recorded in our cohort². No complications related to the myectomy procedure were noted.

CONCLUSION: The association of myectomy and BTxA injections is imperative for the effective management of patients with severe facial dystonia. Myectomy yields favorable outcomes when appropriately indicated for cases unresponsive to BTxA treatment, and contributes to a reduction in the necessary BTxA dosage to effectively control facial spasms.

REFERENCES:

- 1- Gillum WN, Anderson RL. Blepharospasm surgery. An anatomical approach. Arch Ophthalmol. 1981;99(6):1056-1062.
- 2- Salles AG, Teixeira NH, Mattos FTB, et al. Protocol for bilateral application of botulinum toxin type A to avoid asymmetry during treatment of hemifacial spasms. Rev Bras Cir Plást. 2015;30:228-234.
- 3- Salles AG, Toledo PN, Ferreira MC. Botulinum Toxin Injection in Long-Standing Facial Paralysis Patients: Improvement of Facial Symmetry Observed up to 6 Months. Aesth Plast Surg. 2009; 33:582–590.

Necrotizing Fasciitis of the Bilateral Gluteal Region Following Polyacrylamide Filler (Aquafilling) Injection: A Surgical Approach

Abstract Presenter: Vasile-RareÈ-Daniel GroÈereanu-Croitoru

Abstract Co-Author(s): Cristian Radu Jecan MD, PhD, FEBOPRAS, Corina Stefan

Background: Polyacrylamide hydrogel-based fillers, such as Aquafilling, have been widely used for soft tissue augmentation despite increasing reports of severe complications. Necrotizing fasciitis (NF) is a rare but life-threatening infection requiring urgent surgical intervention. We present a case of bilateral gluteal NF following Aquafilling injection, highlighting the surgical challenges and outcomes.

Methods: A 36-year-old female presented to the emergency department with severe bilateral gluteal pain, erythema, edema, and skin discoloration, evolving over 48 hours. Clinical examination revealed firm, indurated skin, immobile relative to deep planes. The patient's history included previous breast augmentation (2013), gluteal implant augmentation followed by explantation (2014), and Aquafilling injection in the gluteal region (2020). Laboratory results showed leukocytosis and elevated inflammatory markers (CRP, procalcitonin, fibrinogen). Emergency surgical intervention was performed, including extensive excisional debridement of necrotic tissue, copious irrigation, hemostasis, and placement of negative pressure wound therapy (NPWT). Multiple sequential debridements were required due to progressive tissue necrosis. Empirical broad-spectrum antibiotic therapy was initiated and adjusted based on intraoperative cultures.

Results: The patient underwent three surgical debridements with progressive tissue salvage and infection control. Negative pressure wound therapy (NPWT) not only facilitated granulation tissue formation and reduced the need for skin grafting, but also contributed to the removal of wound exudates and reduction of bacterial load, thereby enhancing the effectiveness of subsequent debridements. The continuous suction mechanism helped optimize wound bed conditions, promoting faster tissue recovery and minimizing further necrosis.

Cultures confirmed polymicrobial infection, necessitating prolonged intravenous antibiotic therapy. The patient achieved complete wound healing with acceptable functional and aesthetic outcomes at five months follow-up.

Conclusions: Gluteal necrotizing fasciitis following polyacrylamide filler injection is a severe complication requiring aggressive surgical debridement and multidisciplinary management. Early recognition, serial excisional debridements, and adjunctive NPWT play a crucial role in patient survival and functional recovery. This case underscores the need for stricter regulations on permanent fillers and heightened awareness among practitioners performing gluteal augmentation procedures.

OCCULT CARCINOMA IN BREAST CANCER SYMMETRIZATION: A MISSED DIAGNOSIS WAITING TO HAPPEN

Abstract Presenter: Mihai Iliescu-Glaja MD, PhD

Abstract Co-Author(s): Fabiana Simion, Daciana Grujic

Introduction: Occult carcinoma (OBC) in contralateral breast specimens remains an underdiagnosed entity in breast cancer patients undergoing symmetrization surgery. While the primary goal of symmetrization is aesthetic and functional balance following oncologic surgery, studies indicate a higher incidence of occult malignancies in cancer patients than previously recognized. The challenge lies in preoperative imaging limitations, insufficient histological analysis, and the absence of standardized protocols for sentinel lymph node (SLN) mapping in the contralateral breast. This study aims to analyze the incidence of occult carcinoma in symmetrization specimens and discuss implications for surgical management.

Materials and Methods: This retrospective study included 117 patients treated between 2020 and 2023 at our institution, undergoing unilateral or bilateral breast surgery. Among them:

- 76 patients underwent unilateral surgery (oncoplastic breast-conserving surgery or mastectomy with symmetrization).
- 41 patients underwent contralateral breast surgery, including prophylactic mastectomy or symmetrization.

All excised tissue was histopathologically examined, and sentinel lymph node biopsy (SLNB) was selectively performed based on clinical indications.

The results were compared with previous large-scale studies, including a multicentric study (T. Sorin et al., 2015) of 2718 patients by T. Sorin et al. in 2015. [1]

Discussion: The analysis revealed occult carcinoma in 5 out of 41 contralateral breast surgeries (12.2%), confirming that a subset of patients harbors undiagnosed malignancies. The most significant case (Patient #5) demonstrated a paradoxical finding: a positive SLNB in the contralateral "healthy" breast while the initially diagnosed cancerous breast had a negative SLNB. This highlights the limitations of current diagnostic tools and challenges in disease staging.

Key findings from our data and literature review:

- Higher occult carcinoma incidence in patients with a previous breast cancer diagnosis (3.8%) compared to those without (0.6%).

- Histological analysis revealed LCIS, IDC, and ILC cases, most of which were not detected by preoperative imaging.
- MRI is superior to mammography and ultrasound for detecting ductal carcinoma in situ (DCIS), but limitations persist.
- SLNB in the contralateral breast is rarely performed in current practice, yet our findings suggest it may be warranted in selected patients.

Conclusion: Occult carcinoma remains underestimated in breast cancer patients undergoing symmetrization surgery. Our findings support enhanced preoperative screening, better intraoperative assessment, and standardized pathological evaluation. The paradoxical case of the last patient underscores the necessity of reconsidering SLNB strategies for the contralateral breast, particularly in high-risk patients. Better screening and techniques, improved communication between surgeons, radiologists, and pathologists could optimize detection and treatment, reducing unnecessary radical interventions. Future guidelines should address contralateral breast evaluation in oncologic surgery to improve patient outcomes

1. Sorin T, Fyad JP, Delay E, Rouanet P, Rimareix F, Houpeau JL, Classe JM, Garrido I, Tunon De Lara C, Dauplat J, Bendavid C, Houvenaeghel G, Clough KB, Sarfati I, Leymarie N, Trudel M, Salleron J, Guillemin F, Oldrini G, Brix M, Dolivet G, Simon E, Verhaeghe JL, Marchal F. Occult cancer in specimens of reduction mammoplasty aimed at symmetrization. A multicentric study of 2718 patients. *Breast*. 2015 Jun;24(3):272-7. doi: 10.1016/j.breast.2015.02.033. Epub 2015 Mar 11. PMID: 25771081.

Outcomes, Indications and Predictive Factors of Complications in Postmastectomy Prepectoral Breast Reconstructions with Polyurethane Foam-coated Implants

Abstract Presenter: Andrea Lisa MD

Introduction: Implant-based reconstruction (IBR) is the most common reconstructive strategy following mastectomy. Advancements in surgical techniques and materials have led to improvement in perfusion and thickness of mastectomy skin flaps and they have renewed interest in prepectoral breast reconstruction (PBR). The aim of this study was to analyze the surgical outcomes of skin or nipple-sparing mastectomies with direct-to-implant (DTI) reconstructions with prepectoral polyurethane foam-coated implants.

Material and methods: A retrospective study was conducted on consecutive patients undergoing postmastectomy IBR-DTI with prepectoral polyurethane foam-coated implants between 2020 and 2022. Inclusion criteria were a preoperative pinch test >0.8 cm and well-perfused mastectomy flaps. Preoperative radiation therapy was not an exclusion criterium. Complications were classified as "major" if they required urgent re-intervention, and as "minor" if they required only outpatient management.

Results: A total of 250 patients and 317 breast reconstructions were included. The mean (SD) age was 50.5 \pm 10.9 years with a mean BMI of 23.8 \pm 4.0. The mean follow-up was 12,2 \pm 1.2 months. The overall rate of major complications was 6.3%, being infection the most common major complication (2.5%), followed by mastectomy flap necrosis (1.6%), bleeding (1.6 %), and wound dehiscence (0.6%). The overall minor complications rate was 27.8%. Across minor complications, rippling was recorded as the most common (14.5%), followed by capsular contracture (7.6%), seroma formation (2.5%), skin necrosis (2.2%), hematoma (0.6%) and wound dehiscence (0.3%).

Conclusion: In our cohort, DTI-PBR with PU implants had a 6.3% risk of major complications requiring urgent re-intervention. Hypothyroidism, diabetes, and overweight have been identified as risk factors associated with higher risk of complications.

Overstepping the Boundaries of Paramedian Forehead Flap in Complex Orbital Reconstruction

Abstract Presenter: Surya Yashaswi P V S MD

Abstract Co-Author(s): Sanjay Kumar Giri, Santanu Suba

Purpose: The paramedian forehead flap is widely used in orbital reconstruction for defects involving the medial canthus and eyelids. However, its simultaneous bilateral use in complex orbital reconstructions is scarcely reported. This study highlights the novel application of bilateral paramedian forehead flaps in managing a complex orbital defect following oncologic resection.

Methods and Materials: A 56-year-old diabetic female presented two days post-excision of basal cell carcinoma with a full-thickness right orbital defect involving the

medial half of the upper eyelid, entire lower eyelid, and medial orbital wall, with the globe in situ. Reconstruction was planned using:

Ipsilateral paramedian forehead flap for resurfacing the medial orbital wall.

Contralateral extended paramedian forehead flap combined with buccal mucosal graft for the lower eyelid.

Mobilized conjunctiva for inner lining and split-thickness skin graft for outer coverage of the upper eyelid.

The forehead donor areas were resurfaced using split-thickness skin grafts. Three weeks later, the contralateral forehead flap was divided and inset into the donor site of the ipsilateral flap to optimize contour and minimize scarring.

Results: Postoperative recovery was uneventful, with optimal eyelid movement, excellent flap survival, and minimal donor site morbidity. Both forehead flaps demonstrated excellent vascularity, pliability, and conformity to the defect's three-dimensional architecture. The final outcome yielded aesthetic symmetry and functional restoration without any complications.

Discussion: The use of bilateral paramedian forehead flaps in orbital reconstruction is an innovative technique that capitalizes on the flap's proximity, pliability, and excellent vascularity. This method ensures comprehensive coverage of multiple subunits while minimizing donor site morbidity. The technique not only restores anatomical form but also preserves function, particularly in patients with compromised healing due to comorbidities like diabetes. Using flaps from a single anatomical region improves cosmetic outcomes without compromising flap viability or function.

Conclusions: Bilateral paramedian forehead flaps offer a versatile and reliable solution in managing complex orbital defects involving multiple aesthetic subunits. This technique maximizes the reconstructive potential of the forehead flap, delivering optimal functional and aesthetic outcomes with minimal complications.

Paracrine Effects of MNCQQ Cell-Derived Conditioned Medium Promote Angiogenesis and Wound Healing.

Abstract Presenter: Sen Jiang

Abstract Co-Author(s): Rie Ito-hirano, Satomi Furukawa, Satoshi Fujimura, NADIRE WUBULIKASIMU, ZHANG WANQI, Ai Sugawara, Rica Tanaka MD

Purpose: Recently, increasing attention has been attracted to cell-conditioned media for their therapeutic potential, largely owing to their rich content of growth factors and exosomes. We have previously established a novel type of cells named MNC-QQ cells which is from a serum free quantity and quality control culture (QQc) of peripheral blood mononuclear cells (MNCs) that increases the vasculogenic and tissue regeneration ability of MNCs. In our previous study we confirmed that the conditioned medium derived from MNCQQ cells (QQ-Sup) also contains a rich composition of growth factors, cytokines, and exosomes, including numerous angiogenesis-related factors. While QQ-Sup is expected to promote vascular regeneration and tissue repair, the precise therapeutic efficacy and underlying mechanisms remain unclear. Therefore, the purpose of this study is to evaluate the angiogenic effects of QQ-Sup on ischemic tissues both in vitro and in vivo and to elucidate the molecular mechanisms underlying its pro-angiogenic and tissue regenerative properties.

Methods: QQ-Sup was collected from MNCQQ cultures and analyzed for its angiogenic potential. Human umbilical vein endothelial cells (HUVECs) were cultured with QQ-Sup to assess its effects on cell proliferation, migration, and tube formation through MTT assays, wound healing assays, and tube formation assays, respectively. To identify key factors, ELISA was performed to quantify the levels of angiogenesis related factors in the QQ-Sup. Functional blockade experiments using inhibitors against target factors were conducted to validate their roles in mediating angiogenic responses. Additionally, a murine hindlimb ischemia model was established, where QQ-Sup was administered intravenously. The development of ischemia-related ulcers or necrosis was observed and blood flow recovery was monitored using laser Doppler perfusion imaging at regular intervals.

Results: To evaluate the pro-angiogenic potential of QQ-Sup, we first assessed its effects on HUVECs. QQ-Sup treatment significantly enhanced HUVEC proliferation (0.46 ± 0.09 vs. $0.84 \pm 0.10/24h$; $p < 0.01$), migration ($29.21\% \pm 3.87\%$ vs. $96.1\% \pm 3.21\%/18h$; $p < 0.001$), and tube formation (16.17 ± 3.16 vs. $22.29 \pm 2.25/5h$; $p < 0.01$) compared to controls, indicating a strong capacity to promote key cellular processes involved in angiogenesis. Next, to identify the molecular mediators responsible for these effects, we conducted ELISA, which revealed elevated levels of two key undisclosed angiogenic factors (X and Y) in QQ-Sup. To test if these factors play a pivotal role in QQ-Sup-mediated angiogenesis, we performed neutralization assays using specific inhibitors targeting these factors. As expected, the angiogenic activities, including endothelial cell proliferation, migration, and tube formation were markedly

reduced upon inhibition of these factors. Building upon these in vitro findings, we next explored the potential therapeutic effects of QQ-Sup in vivo using a murine hindlimb ischemia model. The preliminary observations indicated that QQ-Sup-treated mice exhibited favorable outcomes, notably the absence of severe ulcerations, which is often a hallmark of advanced ischemic damage.

Conclusion: This study indicated that QQ-Sup might promote angiogenesis and accelerates wound healing through the paracrine actions of key factors X and Y. This approach offers promising prospects for treating ischemic conditions, chronic wounds, and other vascular-related disorders in regenerative medicine.

Pediced Deep Inferior Epigastric Perforator (DIEP) Flap: A Reliable Solution for Vulvar and Perineal Reconstruction

Abstract Presenter: Lisandra Morgado

Abstract Co-Author: Joana Costa MD

Introduction: The Deep Inferior Epigastric Perforator (DIEP) flap is widely recognized as the gold standard in autologous breast reconstruction, typically used as a free flap. However, its applications extend beyond breast reconstruction, particularly for locoregional defects, due to its standardized harvesting technique and favorable donor site morbidity. This study aims to demonstrate that the pedicled DIEP flap can be an effective solution for large vulvar and perineal defects.

Patients and Methods: A retrospective analysis was conducted on patients who underwent reconstruction of vulvar and/or perineal defects using a pedicled DIEP flap. All procedures were performed at ULS São João.

Discussion: We present three cases of successful vulvar and perineal reconstructions with the pedicled DIEP flap.

- Case 1: A 64-year-old female with vulvar carcinoma underwent radical vulvectomy and abdominoperineal resection. A pedicled DIEP flap was used for defect reconstruction with a favorable aesthetic result.
- Case 2: A 72-year-old female with recurrent vulvar carcinoma required radical vulvectomy, distal colpectomy, and abdominoperineal resection. A fenestrated pedicled DIEP flap was used to reconstruct the defect, as well as both the vagina and the urethral meatus.

- Case 3: A 34-year-old woman sustained severe perineal trauma due to a dog bite, resulting in avulsion of the labia minora and majora on the left side, along with tissue loss at the root of the ipsilateral thigh. A pedicled DIEP flap was successfully utilized for reconstruction.

Conclusion: The pedicled DIEP flap has proven to be an effective and reliable option for the reconstruction of various locoregional defects, providing excellent aesthetic results while minimizing donor-site morbidity. It should be considered a valuable addition to traditional locoregional flaps for the reconstruction of large vulvar and perineal defects.

References:

- (1) Muneuchi, Gan, et al. "Deep inferior epigastric perforator (DIEP) flap for vulvar reconstruction after radical vulvectomy: a less invasive and simple procedure utilizing an abdominal incision wound." *Annals of plastic surgery* 55.4 (2005): 427-429.
- (2) Cheng, Angela, and Michel Saint-Cyr. "Split and thinned pedicle deep inferior epigastric perforator (DIEP) flap for vulvar reconstruction." *Journal of reconstructive microsurgery* 29.04 (2013): 277-282.
- (3) Bodin, Frédéric, et al. "Extended vulvar immediate reconstruction using the bilateral transverse pedicled DIEP flap." *Journal of Plastic, Reconstructive & Aesthetic Surgery* 68.5 (2015): 745-747.
- (4) Huang, Jung-Ju, et al. "Pedicule perforator flaps for vulvar reconstruction-new generation of less invasive vulvar reconstruction with favorable results." *Gynecologic oncology* 137.1 (2015): 66-72.
- (5) Bachleitner, K., et al. "The Pedicled Deep Inferior Epigastric Perforator (DIEP) Flap for Vulva Reconstruction." *Austin J Clin Case Rep* 8.2 (2021): 1196.

Plastic surgery management of chemotherapy extravasation wounds

Abstract Presenter: Alma-Andreea Corpodean MD

Abstract Co-Author: Alexandru Georgescu MD., PhD

Introduction: Extravasation is defined as any unintended leakage of the fluid injected into a blood vessel that infiltrates the surrounding tissue. For cancer patients who receive chemotherapy the leakage of the medication causes damage varying from skin irritation to tissue necrosis and possibly systemic reactions. Treatment with chemotherapeutic drugs should be performed only by trained staff in the oncology

department and the management of extravasation should include also general and plastic surgeons.

For the treatment of chemotherapy extravasation there are no prospective randomized clinical trials or general guidelines of management and the follow up protocols. We adapted our own institution guideline of management based on the case reports, international clinical studies, international and local institutions published guidelines.

Methods and materials: We conducted our search in the PubMed, Med-Line and Google database using the following keywords: "chemotherapy extravasation", "chemotherapy extravasation grading", "extravasation management", "oncological emergencies", "extravasation guidelines", "chemotherapy extravasation injuries". We selected relevant references and their main ideas were paraphrased and noted for the goal of elaborating our institution management for chemotherapy extravasation injuries. Chemotherapy extravasation wounds can be treated either with medical or surgical treatment depending on the grade and type of drug implied. There are various possible antidotes used currently. Surgical treatment should not be considered as the initial management option, a watch and wait strategy is more suitable. There are two intervention methods such as immediate irrigation and debridement or excision of the affected area followed by soft tissue coverage.

Conclusion: Even if the incidence of chemotherapy extravasation is quite low, it is a fearful complication of cancer treatment and has no universal management because of the heterogeneity of different mechanism of action of the drugs used. Due to the similarity of the side effects of chemotherapeutic drugs, the ones with vesicant properties can cause more damage because of their mechanism of action and surgery should be considered initially. Although prevention is key, various antidotes are available specifically for some type of drugs, therefore the creation or purchase of an available kit in a oncological treatment center is paramount for patient safety.

1. Al-Benna S, O'Boyle C, Holley J. Extravasation injuries in adults. *ISRN Dermatol.* 2013;2013:856541.

2. Perez Fidalgo JA, Garcia Fabregat L, Cervantes A, et al. Management of chemotherapy extravasation: ESMO--EONS clinical practice guidelines. *Eur J Oncol Nurs.* 2012;16(5):528-534.

3. Quicklink summary table - treatments for extravasation of intravenous anti-cancer therapies. <https://www.eviq.org.au/clinical->

4. Hahn JC, Shafritz AB. Chemotherapy extravasation injuries. *J Hand Surg Am.* 2012;37(2):360-362.

5. Alexander L. Extravasation Injuries: A Trivial Injury Often Overlooked with Disastrous Consequences. *World J Plast Surg.* 2020;9(3):326-330.

Post-Operative Shoulder Dystonia Following Immediate Latissimus Dorsi Flap Breast Reconstruction: A Case Report

Abstract Presenter: Su Min Kim

Abstract Co-Author: Jin-Woo Park

Purpose: Latissimus dorsi (LD) flap is frequently used to cover soft tissue defects after mastectomy. While harvesting, the area surrounding thoracodorsal nerve is dissected and accompanied radiotherapy may cause aberrant nervous connections within the brachial plexus. We present a case of shoulder dystonia following immediate breast reconstruction with latissimus dorsi flap.

Methods: A 46-year-old female diagnosed with left breast cancer underwent total mastectomy and immediate LD flap with implant reconstruction in another institution. After concurrent chemoradiotherapy, patient developed focal dystonia in her left shoulder and transection of the proximal trunk of thoracodorsal nerve was performed, although without significant improvement. When referred, patient showed repetitive involuntary movement, first initiated by jerky elevation of her left shoulder, then posterior descent and mild abduction.

Results: We discovered an aberrant connection between lower subscapular nerve and thoracodorsal nerve. En bloc resection of the proximal portion of previously denervated thoracodorsal nerve was done. Movement partially resolved and patient could identify the origin of remnant movement; pectoralis major. In the second operation with intraoperative nerve stimulation, we re-enacted the symptom by stimulating lateral pectoral nerve. Along with denervation, pectoralis major muscle was resected totally at the clavicular part and partially at the sternocostal part. Patient now reports significant improvements in shoulder dystonia and subjective symptoms including sleep disturbance.

Conclusions: Present case shows an unexpected nervous stimulation challenging to apprehend with normal anatomy. Thus, branches originated from brachial plexus should be comprehensively evaluated in cases of shoulder dystonia after LD flap breast reconstruction.

Postoperative salivary fistula in reconstruction with Dufourmental flap: Conservative approach and management. Case report.

Abstract Presenter: Jaime Andres Caicedo

Abstract Co-Author(s): Juan Cruz Montes de Oca, Ivana Fatica MD, Hugo Benitez, Alejandro Gomez Lucyszyn

Introduction: Salivary fistulas are postoperative complications with a wide incidence ranging from 2% to 30% in facial surgeries(1). Reported risk factors include radiotherapy, chemotherapy, primary tumor stage, malnutrition and surgery duration(2). In a surgical bed contaminated with bacteria and saliva, surgical reinterventions and flap failures can result in large tissue defects, increasing morbidity and mortality (1). This case focuses on a postoperative salivary fistula as a complication following facial reconstruction after resection of a skin carcinoma, highlighting its conservative management, the incorporation of nutritional guidelines to reduce saliva production and the outcomes achieved.

Materials and Methods: A 52-year-old male patient with a high-grade squamous cell carcinoma (SCC) of the right cheek region, with a one-year evolution. A full-thickness surgical resection was performed, including the oral mucosa, with clear margins. Reconstruction was subsequently carried out using a Dufourmental flap. On the eighth postoperative day, a cutaneous salivary fistula was diagnosed (amylase 15,000 U/mL). Conservative management was initiated, starting with antisialogogue therapy using paratropine at a dose of 4 drops every 4 hours, in combination with a soft diet with reduced intake and the elimination of saliva-stimulating foods such as citrus, spicy, and acidic items. Intake, visual exposure, and olfactory stimulation from these foods were also restricted. Additionally, physiotherapy guidelines were implemented to improve drainage and minimize pressure on the fistula.

Results: The patient was discharged on the sixteenth day postoperative. The salivary fistula completely resolved after 8 weeks of interdisciplinary management, preserving facial symmetry and normal regional function, with no recurrence or complications over a 9-month follow-up period.

Discussion: Antisialogogues how paratropine reduces saliva production, facilitating spontaneous resolution (1). Somatostatin and octreotide promote the closure of pharyngocutaneous fistulas(3). Negative pressure therapy with a continuous suction system reduces saliva accumulation and infection risk (4). Botulinum toxin shortens

fistula closure time(1). Surgery or interventional procedures are reserved for refractory cases(1).

Conclusion: This case underscores the importance of an interdisciplinary conservative management approach for postoperative salivary fistulas. The incorporation of nutritional guidelines serves as a valuable adjunct to reducing saliva production and promoting healing. Additionally, it reaffirms the versatility of the Dufourmental flap in oncologic facial reconstructions. Prospective studies could help establish standardized protocols for this complication.

References:

Belcastro A, Reed W. The Management of Salivary Fistulas. *Semin Plast Surg.* 2022 Dec 3;37(1):4-8. doi: 10.1055.

Bozиков K, Arnez ZM. Factors predicting free flap complications in head and neck reconstruction. *J Plast Reconstr Aesthet Surg.* 2006;59:737–42. doi: 10.1016.

Cohen J, Reed W, Foster MW. Octreotide may improve pharyngocutaneous fistula healing through downregulation of cystatins: A pilot study. *Laryngoscope Investig Otolaryngol.* 2022 Nov 28;8(1):113-119. doi: 10.1002.

Chang HP, Hong JW, Lee WJ. Incorporating a continuous suction system as a preventive measure against fistula-related complications in head and neck reconstructive surgery. *Arch Plast Surg.* 2018 Sep;45(5):449-457. doi: 10.5999.

Precision and Perception: Restoring Sensation in Hand Reconstruction with the Medial Plantar Artery Flap

Abstract Presenter: Vidush Kumar

Abstract Co-Author(s): Sanjay Kumar Giri, Santanu Suba

Introduction: Soft tissue reconstruction in hand surgery demands an optimal balance between durability, pliability, and sensory restoration. The medial plantar artery (MPA) flap has emerged as a promising reconstructive option, offering thin, sensate tissue with minimal donor site morbidity. This study presents two cases where the sensate MPA flap was successfully utilized for hand defect reconstruction, focusing on surgical technique, sensory outcomes, and functional recovery.

Aims and Objectives: The primary aim of this study is to evaluate the functional and sensory outcomes of the sensate MPA flap in hand reconstruction. Specific objectives include:

1. Assessing flap viability and sensory restoration using two-point discrimination.
2. Evaluating postoperative functional improvement, including grip strength and dexterity.
3. Analyzing donor site morbidity and patient-reported outcomes.

Methodology: This case series includes two patients who underwent MPA flap reconstruction for hand defects. Both cases involved careful flap elevation with preservation of the medial plantar cutaneous nerve for sensory restoration.

Postoperative follow-up included assessments of:

- Flap survival and complications
- Sensory recovery (evaluated via two-point discrimination)
- Functional improvement (measured by grip strength and dexterity tests)
- Patient-reported satisfaction regarding aesthetics and function

Case Presentations: Case 1: A 25 year-old male presented with a 3-month-old post-traumatic left-hand palmar contracture with an inability to extend the fingers. Following release, a sensate MPA flap was harvested, with neurotomy of the medial plantar cutaneous nerve to the recipient digital nerve. Flap survival was 100%, and sensory recovery (two-point discrimination of 30 mm) was observed at six months. Grip strength improved significantly over six months.

Case 2: A 13 year-old boy with a 11 year old post-burn contracture required soft tissue coverage following contracture release. The sensate MPA flap was used with microsurgical neurotomy. At two months, the patient demonstrated protective sensation and improved dexterity, with no donor site complications.

Discussion: Traditional reconstructive options, such as groin or radial forearm flaps, offer durable coverage but often lack sensibility. The MPA flap, when harvested with the medial plantar cutaneous nerve, presents an opportunity for sensory reinnervation.

Our case series highlights the clinical advantages of this technique:

- Functional restoration: Both patients demonstrated meaningful grip strength and dexterity improvements.
- Sensory recovery: Two-point discrimination improved over time, supporting the potential for reinnervation.
- Minimal donor site morbidity: Both patients had well-concealed scars and preserved foot function.

However, challenges include meticulous flap dissection and the need for precise neurotomy to optimize sensory return. While limited to two cases, these findings

suggest that the sensate MPA flap is a valuable option for complex hand reconstructions.

Conclusion: The sensate medial plantar artery flap is a reliable and functionally superior option for hand reconstruction, providing both durable coverage and meaningful sensory recovery. These two cases demonstrate its clinical feasibility, with favorable postoperative outcomes.

References

1. Padovano, William M. MD, MPHS; Hill, Elspeth J. R. MBChB, MRes, PhD; Felder, John M. III, MD. Reconstruction of Severe Palm Injury with Sensate Medial Plantar Artery Flap and Nerve Grafting. *Plastic and Reconstructive Surgery - Global Open* 8(7):p e2944, July 2020. | DOI: 10.1097/GOX.0000000000002944

Prepectoral Breast Reconstruction: Total Coverage ADM and implants versus Polyurethane-Coated Implants without ADM. Early and Long-Term Complications and Outcomes

Abstract Presenter: Mauro Barbera MD

Abstract Co-Author(s): Marzia Salgarello MD, Giuseppe Visconti MD

Background: Breast reconstruction after mastectomy plays a crucial role in restoring patients' physical appearance and psychological well-being. Immediate prosthetic breast reconstruction (IPBR) has gained popularity, with the prepectoral approach offering advantages such as reduced postoperative pain, improved aesthetic outcomes, and quicker recovery. Among the options for implant coverage, two main techniques are widely used: (1) implants fully covered with acellular dermal matrices (ADM) and (2) polyurethane (PU)-coated implants without ADM. While both methods aim to minimize complications and maximize aesthetic results, comparative long-term data are limited. This study compares early, intermediate, and long-term outcomes of these two reconstructive approaches.

Methods: A retrospective analysis was conducted on 97 patients (135 breasts) who underwent immediate prepectoral breast reconstruction following nipple-sparing mastectomy (NSM), skin-sparing mastectomy (SSM), or skin-reducing mastectomy (SRM) between April 2018 and March 2021. Patients were categorized into two groups: Group A received PU-coated implants, and Group B received textured implants with

total ADM coverage. Primary endpoints included complication rates (seroma, infection, hematoma, rippling, capsular contracture) and aesthetic outcomes, assessed at multiple postoperative intervals up to five years. Statistical analysis involved chi-square tests for categorical variables and logistic regression models adjusted for age, BMI, mastectomy volume, and implant volume.

Results: Patient Demographics: The median age was 47.8 years, with a median BMI of 23.3 kg/m². There were no significant demographic differences between groups. Bilateral reconstructions were more common in the ADM group.

Short-Term Complications (≤4 weeks):

Seroma: PU group had significantly lower rates (2.9%) compared to the ADM group (33.8%, $p < 0.001$).

Infections: Occurred in 1.4% of PU patients versus 6.2% in ADM patients ($p = 0.195$).

Hematomas and Red Breast Syndrome: Low incidence in both groups, with no significant differences.

Medium-Term Complications (4 weeks to 1 year):

Persistent seromas occurred only in the ADM group.

Infection rates remained higher in the ADM group beyond the first month postoperatively.

Long-Term Complications (>1 year):

Capsular Contracture: At five years, the PU group demonstrated significantly lower contracture rates (24.3%) compared to the ADM group (47.7%, $p < 0.001$).

Rippling and Step-Off Deformity: Similar rates were observed between groups, with no significant correlations with implant volume or flap thickness.

BIA-ALCL: No cases were recorded in either group during the follow-up period.

Aesthetic Outcomes: Aesthetic assessments favored the ADM group in terms of breast symmetry and contour. However, the PU group had fewer reoperations and lower complication-related morbidity. Patient satisfaction remained high in both groups.

Discussion: PU-coated implants provide a safer profile with fewer early postoperative complications and a lower long-term risk of capsular contracture. The adhesive properties of the polyurethane coating promote better implant stabilization, reducing micro-movement-induced inflammation. ADM-based reconstructions, while offering improved contour and aesthetic outcomes, present higher complication rates and a greater likelihood of requiring secondary procedures.

Conclusions: Selecting between PU-coated implants and ADM-covered implants should be individualized, weighing patient anatomy, aesthetic preferences, and potential complication risks. PU implants are advantageous for patients prioritizing lower complication rates, while ADM-based reconstruction may suit those seeking optimal aesthetic results despite higher risks.

G. H. Pontes et al., "Long-term Insights: Histopathological Assessment of Polyurethane Implant Capsules Over 24 Years," *Aesthet Surg J*, vol. 44, no. 9, pp. 915–924, Sep. 2024, doi: 10.1093/asj/sjae057.

S. Pompei, F. Arelli, L. Labardi, F. Marcasciano, D. Evangelidou, and G. Ferrante, "Polyurethane Implants in 2-Stage Breast Reconstruction: 9-Year Clinical Experience," *Aesthet Surg J*, vol. 37, no. 2, pp. 171–176, Feb. 2017, doi: 10.1093/asj/sjw183.

M. Salgarello, D. Pagliara, L. Barone Adesi, G. Visconti, J. B. Wild, and P. Matey, "Direct to Implant Breast Reconstruction With Prepectoral Micropolyurethane Foam-Coated Implant: Analysis of Patient Satisfaction," *Clin Breast Cancer*, vol. 21, no. 4, pp. e454–e461, Aug. 2021, doi: 10.1016/j.clbc.2021.01.015.

G. Franceschini et al., "Immediate prosthetic breast reconstruction after nipple-sparing mastectomy: Traditional subpectoral technique versus direct-to-implant prepectoral reconstruction without acellular dermal matrix," *J Pers Med*, vol. 11, no. 2, pp. 1–12, Mar. 2021, doi: 10.3390/jpm11020153.

G. Berna, S. J. Cawthorn, G. Papaccio, and N. Balestrieri, "Evaluation of a novel breast reco

Prevention of Hypertrophic Scar Development on the Split Thickness Donor Site: A Single-Center, Open-Label, Exploratory Randomized Controlled Trial

Abstract Presenter: Katrina Jo Lobo MD

Abstract Co-Author: Ma. Arlene Cala-or MD

Scars are the endpoint of wound healing after the body worked to restore continuity of tissues after an injury. An uncontrolled proliferating phase or inadequate remodeling phase of wound healing result to abnormal scars such as hypertrophic and keloid scars. They are thick, mostly hyperpigmented raised layers of connective tissues growing beyond the site of injury. These are associated with pain, pruritis, tenderness that is easily abraded with minimal trauma, while some may only complain of aesthetically unpleasant scar but above all it could negatively impact the patient's quality of life. The management entails time, effort, money, endurance, and full participation of patient and caregivers.

This study aimed to prevent the development of hypertrophic scar using Moist Exposed Burn Ointment (MEBO) Scar and comparing its results to the widely accepted treatment using Silicone Gel Dressing. Silicone gel is available in smaller preparation but is more expensive than MEBO. MEBO Scar had been used locally to all phases of wound healing but remained to be controversial and unpopular universally as part of wound care management. The result of the study hopes to provide scientific data and be able to contribute to the literature of wound healing management. This study was done with no non-disclosure agreement from manufacturers.

Subjects of the study were patients who underwent split thickness skin graft. The harvested area of skin graft was assessed monthly for 3 months after treatment with either Silicone Gel or MEBO Scar as they undergo phases of wound healing and monitored for the development of hypertrophic scar. Two board certified plastic surgeons blinded of the treatment independently assessed the patients' donor site.

A total of 24 patients were included in the study. Twelve patients were treated with Silicone Gel and 12 patients for MEBO Scar after randomization. No dropouts were recorded. Patient's demographic and clinical profiles were recorded including history or presence of hypertrophic scars other than the area studied. Both groups showed a continuous decline in the proportion of hypertrophic scar over time, such that none of the patients remained positive at Week 12 and there was no significant difference between the two groups was observed. Median pain scores were not significantly different on both treatment groups as well.

This study demonstrated that MEBO Scar is as effective as Silicone gel dressing in preventing the development of hypertrophic scar.

Propeller Flap Reconstruction and PRP Infiltration for Chronic Wound Dehiscence Following Fibular Osteosynthesis – A Case Presentation

Abstract Presenter: Stefania Riza MD

Abstract Co-Author(s): Ruxandra Sinescu MD, PhD, ANDREI POROSNICU, Patricia Alina Cepi

Osteosynthesis is a common surgical procedure for fibular fractures, but complications such as wound dehiscence, infection, and delayed healing can occur, especially in patients with comorbidities. Chronic wound dehiscence following fibular osteosynthesis presents a significant reconstructive challenge. We report a case of a 70-year-old male with a history of type 2 diabetes mellitus, arterial hypertension, and arterial insufficiency presented with a non-healing wound at the external malleolus following fibular osteosynthesis, successfully managed with a propeller flap and platelet-rich plasma (PRP) infiltration. This case highlights the efficacy of combining flap reconstruction with regenerative therapy in chronic wound management.

1. Everts P, Onishi K, Jayaram P, Lana JF, Mautner K. Platelet-Rich Plasma: New Performance Understandings and Therapeutic Considerations in 2020. *Int J Mol Sci.* 2020 Oct 21;21(20):7794. doi: 10.3390/ijms21207794. PMID: 33096812; PMCID: PMC7589810.
2. Cajozzo M, Jiga LP, Jandali Z, Muradov M, Pignatti M, Cordova A, D'Arpa S. Complications and Solutions in Propeller Flap Surgery. *Semin Plast Surg.* 2020 Aug;34(3):210-220. doi: 10.1055/s-0040-1714087. Epub 2020 Sep 22. PMID: 33041693; PMCID: PMC7542210.

Recipient vessels limited resources management in multiple free flap transfers for hand reconstruction

Abstract Presenter: Zorin Crainiceanu MD

Abstract Co-Author(s): Sara Baneu, Vlad Bloanca, Veronica-Aurelia Romanescu

Aim: The purpose of this scientific paper is to emphasise the multiple target vascular resources in hand surgery reconstruction - fingers included (toe to hand surgery) in trauma, tumor resection, infections. The hand has multiple recipient vascular resources based on anatomical consideration of its division. We aimed to assess the selection of

the recipient vessels and the clinical and functional outcomes of primary or delayed flap reconstruction.

Method: We collected data from all patients in our clinic who underwent complex microsurgical hand reconstruction by staged multiple free flap transfer performed in one center by two surgeons, over a period of 5 years.

Results / Discussion:

- A total number of 25 flaps were performed in 16 cases (3 cases x3 flaps, 3 cases x2 flaps, 10 cases x1 flap): toe-to-hand transfer, vascularized serratus anterior with rib, ALT flap, DIEP flap, groin flap and a metatarsal joint free transfer were the procedures used.
- 1st stage soft tissue covering or extensive scar removal in delayed reconstruction,
- 2nd+/- 3rd stage(s) toe-to hand- transfers – functional restoration.

Recipient vessels were:

- radial a, ulnar a., cephalic and basilic vv. (1st and 2nd stage reconstruction)
- superficial palmar arcade / digital arteries,
- vein graft (1 case, 3rd stage) (for arterial reconstruction)
- a.-v. loop (1 case, 2nd stage)
- previous flap's proper pedicle (1 case 2nd stage, simultaneously 2x 2nd toe transfers).

- Conclusion:**
- good planning of the reconstruction is mandatory for good outcome
 - a rigorous selection of flaps and recipient vessel must be done before the microsurgical reconstruction. The tissue defect etiology and the reconstruction timing are important elements in generating an algorithm of reconstruction (hand trauma - massive hand destruction vessels, avulsion- elongated vessels, infections - corroded or disintegrated vessels, tumor resection,).
 - free flaps are best option in offering excellent quality soft tissue covering and in cases of complex tissue defects (bone, tendon, joint, toe-to hand transfers), a satisfying functional result.
 - patients' compliance due to long term hard time (multiple surgeries, long rehabilitation)

Recognizing and Managing complications in Blepharoplasty: a 5-year study

Abstract Presenter: Ina Kola

Background: The eye is an important component of facial aesthetics and blepharoplasty can play a vital role in facial harmonization and aging process. The key to a successful eyelid surgery is a careful analysis of the face, a carefully conceived

surgical plan and meticulous operative technique. Blepharoplasty alone or combined with other cosmetic surgeries such as brow lifting or facial lifting or other facial and skin rejuvenation such as fat grafting represents the best approach in these cases for optimal results [1] .

Objectives: The purpose of this study was to utilize a database to provide an overview of the upper and lower eyelid blepharoplasty techniques, to analyze the surgical outcomes and complications of blepharoplasty.

Material and Methods: This retrospective study case-series included patients who underwent upper and lower blepharoplasty in a private clinic in Tirana, from September 2019 to September 2024. Patients were stratified according to data such as age, gender, surgical technique and history of smoking. Type of anesthesia and postoperative and long term complications were reviewed for every patient. Exclusion criteria were any of the following: thyroid eye disease, myasthenia gravis, myotonic dystrophy, pregnancy, blepharoptosis, dry eye syndrome, previous upper eyelid surgery or trauma. Simple descriptive statistics were utilized to report the data of the sample. Data are presented as frequency tables and percentages.

Results: The study included 287 patients age 28-77 years old. The mean age was 51,69 years old. Female rate was 78% (224) and male 22% (63), with a significantly higher predominance in females undergoing blepharoplasty. According to our study, 155 cases (54%) were upper eyelid blepharoplasty, 44 (15,3%) lower blepharoplasty, and 88 (30,7%) were combined. Local anesthesia with sedation was used in 265 (92,3%) of cases, followed by local anesthesia in 11(3,8 %) and general anesthesia in 10 (3,5%) of cases. All blepharoplasties were performed by the same surgeon. Skin excision was performed in 117 of cases (40.8%), fat pads removal was performed in 158 cases (55%) and only in 12 cases (4.2%) fat removal was accompanied by autologous fat grafting according to their preoperative assessment. None of the patients underwent muscle excision. Patients were followed for an average of 4.2 months (range, 1-12months). Age group that had more complications was 35-49 years old. The most common complication was cyst 14 patients (4,9%). In our study 29,6% had a personal smoking history. There was a statistically higher rate of complications in smokers ($p=0,0003$).

Conclusions: We demonstrated that blepharoplasty is a procedure with a high satisfaction among the patients, with a complication rate of 14,6%. It's an excellent surgical procedure, when properly indicated. According to our study smoking history is a risk factor for postoperative complications when performing a blepharoplasty. With appropriate counseling, planning and proper surgical technique, good aesthetic results

can be achieved. Nevertheless the goal remain the same, to achieve a youthful and natural look of the periorbital region.

References:

1. Jacono AA, Moskowitz B. Transconjunctival versus transcutaneous approach in upper and lower blepharoplasty. *Facial Plast Surg.* 2001;17:21–8. doi: 10.1055/s-2001-16366.

Reducing seroma incidence in immediate prepectoral breast reconstruction: the role of incisional Negative Pressure Wound Therapy and ultrasound monitoring

Abstract Presenter: Giulia Benedetta Sidoti

Abstract Co-Author(s): Giulia Benedetta Sidoti, Stefano Bottosso, Martin Iurilli, Alessandro Scian, Luigi Bonat Guarini, vittorio ramella, Giovanni Papa

Introduction: Immediate prepectoral breast reconstruction has emerged as a prominent technique for patients undergoing mastectomy, particularly for those desiring improved aesthetic outcomes and fewer complications. Unlike the traditional subpectoral placement of breast implants, the prepectoral approach involves positioning the implant above the pectoralis muscle, offering benefits such as a more natural appearance and a reduction in postoperative pain and muscle-related issues. Despite these advantages, the procedure is not without challenges. The development of seromas remains one of the most common complications. Seromas not only delay wound healing but also increase the risk of infection, necessitating additional interventions, and potentially compromising the aesthetic results.

The aim of this study was to evaluate the combined effect of incisional negative pressure wound therapy (iNPWT) for seven days postoperatively, alongside a structured ultrasound-based protocol for the early detection and management of seromas, in patients undergoing immediate prepectoral breast reconstruction. We hypothesized that the addition of iNPWT to the conventional ultrasound monitoring protocol would significantly reduce the incidence of clinically significant seromas, enhance wound healing and reduce the overall complication rate.

Methods: This research was designed as a mixed observational study. A total of 100 patients were enrolled, with a focus on those undergoing immediate prepectoral breast reconstruction following mastectomy for breast cancer. Patients were divided into two groups: the case group, which received both iNPWT and the ultrasound-based protocol, and the control group, which only received the ultrasound protocol. Statistical analyses

were performed using R and SPSS software. Descriptive statistics were used to summarize demographic data, while inferential tests (such as chi-square and t-tests) were employed to assess differences between the groups. A p-value of less than 0.05 was considered statistically significant.

Results: Preliminary findings from this study suggest that the use of iNPWT, in conjunction with the ultrasound protocol, resulted in a marked reduction in the incidence of clinically significant seromas. In addition, the time to seroma diagnosis was significantly shorter in the iNPWT group, owing to the frequent monitoring facilitated by the ultrasound protocol. This early detection enabled more timely interventions, preventing the development of larger, more problematic seromas. Furthermore, patients in the iNPWT group demonstrated faster overall recovery times, with fewer instances of wound dehiscence and lower rates of infection. While the benefits of iNPWT were evident in reducing seroma-related complications, it also contributed to improved wound adhesion and minimized the need for secondary interventions. This finding is particularly important in the context of prepectoral reconstruction, where maintaining implant positioning and optimizing cosmetic results are paramount.

Conclusion: The integration of incisional negative pressure wound therapy (iNPWT) and structured ultrasound monitoring represents a promising strategy to reduce seroma-related complications in immediate prepectoral breast reconstruction. The preliminary data from this study suggest that the combined approach offers significant advantages in terms of reducing seroma incidence, accelerating wound healing, and improving overall patient outcomes.

Remarkable Results Achieved With The Use Of Dermal Substitutes With Negative Pressure Wound Therapy In Management Of Complex Wounds: Could They Replace Conventional Flap Surgery?

Abstract Presenter: Shailesh Ranade

Introduction: Management of complex wounds has always been a major challenge to reconstructive surgeons. Since Skin grafts cannot be the choice for cover in complex wounds, especially with exposed vital structures, flaps either pedicled or microvascular have been the mainstay in the treatment of composite skin and soft tissue defects following trauma & in onco-reconstruction.

The invention and development of Dermal Substitutes has opened up an entirely new avenue of possibilities to treat these complex wounds, a paradigm shift in our options.

The author presents a series of 50 cases of complex wounds successfully treated with use of Dermal Substitutes and Negative Pressure Wound Therapy.

These complex wounds had either exposed vital structures (like tendons, bones, joints, neurovascular bundles), implants, fractures or a combination thereof. They also included wounds over pressure bearing areas (such as the sole of the foot), Post malignancy excision wounds requiring radiotherapy & Exposed bone with Chronic osteomyelitis. All these would hitherto ideally require flap surgery.

Material & Methods: The important steps in treatment included thorough debridement, repeated wound cultures and control of infection with appropriate antimicrobial agents. After adequate preparation of the wound bed, all wounds were covered with dermal substitutes, protected by Negative Pressure Wound Therapy, for a period of 2-3 weeks till the formation of Neodermis. This Neodermis was then covered with a thin split thickness skin graft.

Summary of Results: The results were assessed periodically at 1 month, 3 months, 6 months and 1 year. In 94% cases there was a satisfactory wound cover, with excellent function, while in 3 cases there was a partial or complete loss of Dermal substitute, requiring re-surgery. The complications included hematoma (4 cases) and infection (3 cases). The outcomes were cosmetically pleasing and functionally equal to a flap surgery.

Conclusion: Based on this experience, the author is of the view that a combination of Dermal Substitutes with Negative Pressure Wound Therapy can also be a safe and reliable method to manage complex wounds and often avoid a flap surgery. It is not a magic wand, but definitely an additional weapon in the armamentarium of a plastic surgeon, which can replace flap surgery in carefully chosen cases.

Resveratrol and Chlorogenic Acid in Inflammatory Markers of Human Fibroblasts

Abstract Presenter: julianna arouca

Introduction: Resveratrol (RSV) and chlorogenic acid (CGA), bioactive compounds found in grapes and Coffea robusta, respectively, possess antioxidant and anti-inflammatory properties. Their synergistic effects may enhance tissue regeneration, making them potential therapeutic agents. This study investigates their effects on

human fibroblasts, particularly in modulating inflammatory markers and promoting extracellular matrix synthesis.

Objective

To evaluate the impact of RSV and CGA on inflammatory markers in a human fibroblast cell line.

Methods: Study Design

This was a primary, interventional, in vitro, longitudinal, prospective, analytical, and controlled study conducted at the Federal University of São Paulo (UNIFESP), approved by the Research Ethics Committee (protocol 3319260820).

Experimental Procedures

- Cell Viability and Cytotoxicity: Assessed using the MTT reduction assay and trypan blue exclusion test at RSV and CGA concentrations of 40, 80, 120, and 160 μM , both alone and in a 1:1 blend.
- Collagen and Hyaluronic Acid (HA) Synthesis: Evaluated via Sirius Red staining for collagen quantification and ELISA for HA measurement.
- Collagenase Activity: Determined using a colorimetric assay to assess the inhibition of collagen degradation.
- Matrix Metalloproteinase (MMP) Modulation: MMP-1, MMP-2, and MMP-9 secretion were measured by ELISA, while their mRNA expression levels were analyzed via qRT-PCR.
- IL-6 Secretion: Quantified using ELISA to assess anti-inflammatory effects.

Results: Cell Cytotoxicity and Viability

RSV, CGA, and their Blend affected fibroblast viability in a dose-dependent manner. The 80 μM concentration was chosen for subsequent experiments as it was the lowest dose closest to IC₅₀ while maintaining fibroblast viability ($p < 0.05$).

Collagen Synthesis

Sirius Red staining confirmed a significant increase in collagen production in all treatment groups, with the Blend demonstrating the most pronounced effect.

Collagenase Activity

Collagenase activity was significantly reduced in fibroblasts treated with RSV, CGA, and particularly the Blend, suggesting decreased collagen degradation.

Hyaluronic Acid Synthesis

HA levels significantly increased ($p < 0.05$) after treatment, indicating enhanced extracellular matrix remodeling and potential skin regeneration.

MMP Secretion and Expression

- Secretion: The Blend significantly reduced MMP-1, MMP-2, and MMP-9 secretion in fibroblasts stimulated with lipopolysaccharide (LPS), compared to untreated control cells.

- mRNA Expression: The Blend significantly downregulated MMP-1 and MMP-9 expression, while RSV alone reduced MMP-9 expression. No significant changes were observed for MMP-2 expression.

IL-6 Modulation

IL-6 secretion was significantly reduced in the Blend-treated group compared to RSV and CGA alone ($p < 0.05$), confirming its anti-inflammatory potential.

Conclusion: RSV and CGA, particularly in combination, demonstrated anti-inflammatory and regenerative effects in human fibroblasts. They downregulated IL-6, MMP-1, MMP-9, and collagenase while promoting collagen and HA synthesis, supporting their potential as therapeutic agents for tissue repair and skin regeneration.

References

Alves GAD, Oliveira de Souza R, Ghislain Rogez HL, Masaki H, Fonseca MJV. Cecropia obtusa extract and chlorogenic acid exhibit anti aging effect in human fibroblasts and keratinocytes cells exposed to UV radiation. PLoS One. 2019 May;14(5):e0216501.

Ferreira LM, Sobral CS, Blanes L, Zampieri M, Horibe EK. Proliferation of fibroblasts cultured on a hemi-cellulose dressing. J Plast Reconstr Aesthet Surg. 2009;63(5):865-9.

Hecker A, Schellnegger M, Hofmann E, Luze H, Nischwitz SP, Kamolz LP, Kotzbeck P. The impact of resveratrol on skin wound healing, scarring, and aging. Int Wound J. 2022 Jan;19(1):9-28.

Lu YE, Chen YJ. Corrigendum to "Resveratrol inhibits matrix metalloproteinase-1 and -3 expression by suppressing of p300/NFκB acetylation in TNF-α-treated human dermal fibroblasts. Chem Biol Interact. 2022 Apr;356:109878.

Pignet AL, Schellnegger M, Hecker A, Kohlhauser M, Kotzbeck P, Kamolz LP. Resveratrol-Induced Signal Transduction in Wound Healing. Int J Mol Sci. 2021 Nov;22(23):12614.

Safety and Efficacy of Early Drain Removal in Breast Reconstruction: A Retrospective Cohort Study

Abstract Presenter: Daiju Goto MD

Abstract Co-Author(s): Azusa Oshima, Takuya Higashino

Background: Although closed-suction drains are routinely used in breast reconstruction, research on the safety and efficacy of early drain removal remains limited. We aimed to evaluate the effect of early drain removal on local wound complications following breast reconstruction.

Methods: This retrospective cohort study, conducted at a single institution, included patients who underwent breast reconstruction with tissue expanders (TE), breast implants, or autologous tissue between January 2019 and August 2024. Patients were classified into two groups based on drain removal criteria: the volume-based group, where drains were removed when output fell below 30 mL/24 h, and the early-removal group, where drains were removed within 4 d postoperatively. The incidence of local wound complications of breasts, including seroma, surgical site infection (SSI), and implant removal, within the first postoperative year was compared between groups.

Results: The study included 241 patients and 265 breast reconstructions: 134 in the volume-based group and 131 in the early-removal group. Seroma incidence did not differ significantly between groups. SSI incidence was significantly lower in the early-removal group (15.7% vs. 6.9%, $p=0.032$). Subgroup analysis showed that the reduction in SSI incidence was observed only in TE or implant-based reconstructions, not autologous reconstructions. Multivariable logistic regression identified early drain removal as a significant protective factor against SSI (OR, 0.304; $p=0.011$).

Conclusions: Early drain removal in breast reconstruction did not increase seroma incidence and significantly decreased SSI incidence in TE or implant-based reconstructions. Drain removal within 4 d postoperatively appears safe and beneficial in breast reconstruction.

Scalp Avulsion Reconstruction Secondary To Dog Bite: A Case Report

Abstract Presenter: Mariano Gemignani

Abstract Co-Author(s): Juan Cruz Montes de Oca, Ivana Fatica MD, Jaime Andres Caicedo, Estefania Kuzmicki

Introduction: Dog bite injuries significantly impact public health and the physical integrity of the population due to their frequency, severity, and sequelae. Dogs are responsible for 80-90% of bites (1) resulting in various types of injuries in different locations. This case report aims to highlight the resources available in a public hospital for the treatment of extensive dog bite injuries.

Materials and Methods: A 22-year-old male patient with cognitive delay was referred from a rural hospital with multiple dog bites, presenting with over 50% scalp avulsion and exposure of the cranial vault. A combination of perforations of the external table of calvaria and skin grafting was performed. Cranial reconstruction facilitated the generation of granulation tissue over the exposed periosteum. Complete coverage was achieved using multiple partial-thickness skin grafts obtained from inner thigh with the electric dermatome available in our institution.

Results: The reconstruction of complex scalp injuries requires the utilization of surgical techniques that allow the coverage of the primary defect to prevent infection and heat loss, as to obtain an acceptable aesthetic and functional outcome (2).

Discussion: We have various procedures available, ranging from primary closure of the defect, secondary intention healing, skin grafts, local, regional, and free flaps, tissue expansion and micro-surgical re-implantation (3). In this case, a combination of perforations of the external table of calvaria and partial skin grafting was chosen, which is an effective therapeutic approach for scalp reconstruction when local flaps are not feasible (4).

Conclusions: Dog bites are distressing, traumatic, and can sometimes result in disfiguring injuries. This case review evaluates that, although it may not be the final or definitive treatment for the case resolution, partial skin grafts have the advantage of rapid healing, less pain, and better scar formation, making them an important tool for reconstructing such injuries with favorable and satisfactory aesthetic-functional outcomes (5).

References

1. Mendoza J.M., Chi J.J. Reconstruction of animal bite injuries to the head and neck. current opinion in Otolaryngology & Head and neck. Surgery. 2019;27(5):407–412. doi: 10.1097/MOO.0000000000000564.
2. Desai S.C., Sand J.P., Sharon J.D., Branham G., Nussenbaum B. Scalp reconstruction: an algorithmic approach and systematic review. JAMA facial plastic surgery. 2015;17(1):56–66. doi: 10.1001/jamafacial.2014.889.

3. Wechselberger G., Pumberger P., Schwaiger K., Wimbauer J., Königer F., Russe E., Heinrich K. Microsurgical scalp replantation: lessons learned and technical considerations. *Plast. Reconstr. Surg. Glob. Open.* 2022;10(3)
4. Schlottmann F., Bucan V., Vogt P.M., Krezdorn N. A short history of skin grafting in burns: from the gold standard of autologous skin grafting to the possibilities of allogeneic skin grafting with immunomodulatory approaches. *Medicina.* 2021;57(3):225.
5. Shahdadi H, Shahrahmani F, Rezayi S, Hashemian M. Successful partial-thickness skin grafting in a pediatric scalp avulsion after dog bite: A case report. *Int J Surg Case Rep.* 2024 Dec;125:110506. doi: 10.1016/j.ijscr.2024.110506. Epub 2024 Oct 23. PMID: 39461134; PMCID: PMC11542003.

Supercharged Nerve Transfer: A Paradigm Shift in Pediatric Brachial Plexus Injury Treatment

Abstract Presenter: Vidush Kumar

Abstract Co-Author(s): Sanjay Kumar Giri, Santanu Suba

Introduction: Brachial plexus injuries (BPI) in pediatric patients can lead to significant functional impairment, particularly affecting shoulder mobility and strength. Traditional nerve repair techniques often yield suboptimal results, necessitating innovative approaches to optimize recovery. Supercharged nerve transfer has emerged as a promising solution, enhancing axonal regeneration and functional restoration. This case report presents the successful management of a pediatric patient with partial axillary nerve injury using supercharged nerve transfer.

Aims & Objectives:

1. To describe the clinical presentation and surgical management of a pediatric patient with partial axillary nerve injury.
2. To evaluate the effectiveness of supercharged nerve transfer in improving shoulder mobility and function.
3. To highlight the role of early surgical intervention in optimizing recovery.

Case Report: A 5-year-old girl presented with an inability to abduct her left shoulder and flex her left elbow following a fall 1.5 months prior. Initial treatment involved physiotherapy and nerve stimulation, leading to partial elbow flexion recovery but limited shoulder abduction. After five months with no further improvement, surgical intervention was planned. Intraoperative findings confirmed an excitable posterior

division of the axillary nerve, and a supercharged end-to-side nerve transfer using the nerve to the medial head of the triceps was performed.

Methodology: Preoperative assessment included electromyography (EMG) and nerve conduction velocity (NCV) studies, confirming partial axillary nerve dysfunction. Postoperatively, structured physiotherapy was initiated at three weeks, with functional evaluations conducted at two months, six months, and one year post-surgery.

Results: Two months postoperatively, the patient demonstrated a full range of motion in shoulder abduction. At the one-year follow-up, sustained functional recovery was observed, with no complications. EMG studies confirmed enhanced reinnervation, reinforcing the efficacy of the supercharging technique.

Discussion: Supercharged nerve transfer offers a novel approach to augmenting axonal regeneration in cases of partial axillary nerve injury. This technique provides an additional motor input to facilitate faster and more efficient recovery. In pediatric patients, early intervention is critical due to their heightened regenerative potential. Compared to conventional nerve grafting, supercharging nerve transfer minimizes donor site morbidity while accelerating functional recovery. This case underscores the importance of postoperative rehabilitation and structured physiotherapy in maximizing surgical outcomes. Further studies are needed to establish standardized protocols and long-term efficacy of this technique in pediatric populations.

Conclusion: Supercharged nerve transfer represents a promising surgical approach for enhancing recovery in cases of partial axillary nerve injury. This case highlights its potential to accelerate nerve regeneration and restore function in pediatric patients. Early intervention and structured rehabilitation are key factors in achieving optimal outcomes.

References:

1. Isaacs, J. (2022). Reverse End-to-Side (Supercharging) Nerve Transfer: Conceptualization, Validation, and Translation. In *Hand* (Vol. 17, Issue 6, pp. 1017–1023). SAGE Publications Inc
2. Viterbo F, Trindade JC, Hoshino K, et al. Latero-terminal neurorrhaphy without removal of the epineural sheath. Experimental study in rats. *Rev Paul Med.* 1992;110(6):267-275.

The Impact of Breast Reconstruction Versus No Reconstruction on Breast Cancer-Related Lymphedema - A Systematic Review and Meta-analysis.

Abstract Presenter: Cecilie Mullerup Laustsen-Kiel

Abstract Co-Author(s): Laura Hansen, mathias ørholt, Sofie Meng Zhang, Nicco Krezdorn, Peter Vester-Glowinski, Tine Engberg Damsgaard MD, PhD, MRBS

Introduction: Breast cancer-related lymphedema affects 21.9% of patients. The role of breast reconstruction in lymphedema prevention remains unclear. This review aimed to assess the relative risk of breast cancer-related lymphedema after breast reconstruction compared to mastectomy and breast-conserving surgery, which has thus far been inconclusively assessed.

Methods: We conducted a systematic review and meta-analysis following PRISMA guidelines. PubMed, EMBASE, Cochrane Central, and grey literature searches identified studies reporting lymphedema outcomes after mastectomy, breast-conserving surgery, and breast reconstruction. We calculated incidence rate ratios using random-effects models. Subgroup analyses compared reconstruction timing (immediate vs. delayed), types (autologous vs. implant-based), and immediate implant stages (one-stage vs. two-stage).

Results: Twenty-three studies with 15,670 patients were included in the qualitative analysis, and 14 were included in the meta-analysis. Patients with breast reconstruction had a significantly lower risk of lymphedema than those without reconstruction (IRR = 0.58, 95% CI: 0.38–0.87, $p < 0.001$). However, this effect was less pronounced when only studies with baseline lymphedema measurements were included. We found no significant differences between autologous and implant-based reconstructions, immediate and delayed reconstruction, or one- and two-stage implant reconstruction.

Conclusion: Breast reconstruction does not increase the risk for breast cancer-related lymphedema, and the risk of lymphedema is similar across different types of breast reconstruction. Breast reconstruction may reduce the risk of breast cancer-related lymphedema compared to mastectomy alone. The lack of baseline lymphedema measurements in most studies and studies with follow-up less than 4 years limits the strength of these findings.

The Impact of Tranexamic Acid Administration in Reduction Mammoplasty: A Systematic Review

Abstract Presenter: Gonçalo Gandra

Abstract Co-Author: Antonio Costa-Ferreira

Background: Previous studies demonstrated the effectiveness and safety of tranexamic acid (TXA) in several surgical specialties. Recent publications suggested that TXA may also be beneficial in plastic surgery, including breast procedures.

Objective: The aim of this study is to evaluate the impact of TXA in reduction mammoplasty by assessing several intraoperative and postoperative outcomes and the safety of its administration.

Methods: A systematic search was conducted according to PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analysis) guidelines on several online databases. Studies evaluating the outcomes of TXA administration in patients undergoing reduction mammoplasty, regardless of TXA dose and administration route were eligible for inclusion. Only studies with a control group were included. Risk-of-bias assessment was conducted using Cochrane and MINORS (Methodological Index for Non-Randomized Studies) tools.

Results: Our systematic review included 7 studies: 3 randomized controlled trials and 4 retrospective cohorts involving 1234 female patients (2232 breasts), 741 of whom received TXA (60%). Four studies used topical TXA, 2 used intravenous (IV) TXA, one used locally infiltrated TXA, and another combined locally infiltrated TXA with IV TXA. Four studies demonstrated benefits from TXA administration, whereas 3 studies did not. Topical TXA used just before wound closure resulted in a 42% reduction in drain fluid output and a 10-times reduction in major hematoma. The administration of IV TXA during induction resulted in a 12- times reduction in major and minor hematoma. The combined use of IV and locally infiltrated TXA reduced intraoperative blood loss. No adverse effects were reported.

Conclusions: There is scientific evidence suggesting TXA may be effective and safe in reduction mammoplasty.

The importance of intramuscular fat grafting in body contouring procedures

Abstract Presenter: Mário Mendanha

Abstract Co-Author: Mauro Barbera MD

Intramuscular fat grafting has gained increasing importance as a body contouring technique, providing an effective method to enhance muscle definition and volume while optimizing overall aesthetic outcomes. This procedure involves the transfer of autologous fat into specific muscle groups, contributing to a more sculpted and proportionate appearance. It is particularly valued by individuals seeking a natural enhancement, serving as an alternative to traditional synthetic implants.

In recent years, growing interest in the biological role of adipose tissue has led to a greater focus on adipose-derived stem cells (ADSCs), which are present in the stromal vascular fraction of fat. These cells not only facilitate tissue integration but may also contribute to local regenerative processes, potentially influencing the quality of the recipient muscle tissue. Although intramuscular fat grafting is primarily performed for aesthetic purposes, patients frequently report a significant increase in muscle strength postoperatively, suggesting broader implications for muscle function.

The integration of fat within muscle structures may influence tissue remodeling, the longevity of results, and the overall perception of body balance. Advances in fat processing techniques and injection strategies have refined the approach, ensuring greater precision and predictability. Careful patient selection and adherence to optimized surgical protocols are essential to ensure the safety and effectiveness of the procedure.

Thus, intramuscular fat grafting is not only an effective body contouring method but may also represent a potential strategy for improving muscle function. The interaction between fat and muscle, as well as its influence on postoperative aesthetics and physical performance, remains a subject of ongoing interest. Further refinement of surgical techniques and patient management strategies will continue to shape the role of intramuscular fat grafting in both aesthetic and reconstructive surgery.

Hoyos AE, Cala LC, Perez ME, Mogollon IR, Dominguez-Millan R. High-Definition Liposculpture 18-Year Evolution: Patient Safety and Aesthetic Outcomes. *Plast Reconstr Surg.* 2023;151(4).

Zielins ER, Brett EA, Longaker MT, Wan DC. Autologous Fat Grafting: The Science behind the Surgery. Vol. 36, *Aesthetic Surgery Journal.* 2016.

Kandulu H, Terzibasoglu AE. Male Pectoralis Major Muscle Augmentation with Autologous Fat Transplantation Using VASER Lipoaspirate: Evaluation with MRI. *Plast Reconstr Surg Glob Open.* 2023;11(4).

Strem BM, Hicok KC, Zhu M, Wulur I, Alfonso Z, Schreiber RE, et al. Multipotential differentiation of adipose tissue-derived stem cells. Vol. 54, *Keio Journal of Medicine.* 2005

F. Bacou et al., "Transplantation of Adipose Tissue-Derived Stromal Cells Increases Mass and Functional Capacity of Damaged Skeletal Muscle," 2004. [Online]. Available: www.cognizantcommunication.com

P. A. Zuk et al., "Human adipose tissue is a source of multipotent stem cells," *Mol Biol Cell*, vol. 13, no. 12, pp. 4279–4295, Dec. 2002, doi: 10.1091/mbc.E02-02-0105.

The new approach in the treatment of deep dermal and full thickness hand burns

Abstract Presenter: Zorin Crainiceanu MD

Abstract Co-Author(s): Panche-Taskov Taskov, Felix Bratosin

Aim: The management of hand burns is still a major challenge, even though several treatment strategies are available.

Our novel concept consists in selective enzymatic debridement of deep partial-thickness and full-thickness hand burns in combination with tissue micrografting technique using autologous micrografts, PPP and "smart" topics and dressings in order to avoid SOC treatment.

Method: EDNX is used for the removal of thermic burn eschars which in the same time preserves the viable surrounding tissue.

HTM is a innovative technology based of autologous micrografts. Only a small skin biopsy is necessary and the micrograft suspension is obtained by mechanical disaggregation and injected directly or in combination with collagen scaffolds. Smart hyaluronic acid based topics and dressings generate microenvironment supporting the healing process.

PPP promote healing of chronic wounds by accelerating cell migration and proliferation of fibroblasts.

Results / Discussion: All areas treated didn't require additional surgery

In less than 2 weeks the lesions were completely epithelized.

The quality of scars was evaluated according to Vancouver scale.

The elasticity, quality and the aesthetic aspect of the scars are superior in comparison with SOC scars.

Conclusion: The need for new techniques and multimodal approach in burn treatment is essential.

Our clinical experience with enzymatic debridement combined with Hy Tissue Micrograft Technology, Hyaluronic Acid 200 kDa "smart topics and dressings" and PPP shows excellent aesthetic outcomes as well as functionality restoration. This novel regenerative technique has shown promising results in burn healing process, reduced hospitalization and healing time and improved quality of life.

THE ROLE AND EFFICACY OF NOVOSORB® BIODEGRADABLE TEMPORISING MATRIX (BTM) IN COMPLEX WOUND MANAGEMENT: A SYSTEMATIC REVIEW AND META-ANALYSIS

Abstract Presenter: Omar Shadid

Abstract Co-Author(s): Siyuan Pang, Basheer Arnaout, Beryl Tan, Cheng Hean Lo

Background: The management of complex wounds, particularly those involving exposed bone, tendons, metalware, or irradiated tissue, remains a challenge in reconstructive surgery. NovoSorb® Biodegradable Temporising Matrix (BTM) offers an alternative approach to conventional grafts and flaps, facilitating vascularisation and graftable neo-dermis formation. However, its efficacy in complex wounds remains unclear.

Purpose: The aim of this systematic review and meta-analysis was to evaluate the efficacy and limitations of BTM in complex wound management.

Methods: A systematic search of EMBASE, OVID, SCOPUS, and PubMed was conducted to identify human studies reporting BTM use in wounds with exposed bone (with or without periosteal stripping), exposed tendons (denuded or non-denuded paratenon), metal implants, fractures, or radiotherapy exposure. Two independent reviewers screened and selected studies. Data on patient demographics, wound characteristics, treatment outcomes, and complication rates were extracted and analyzed. Multivariate logistic regression was performed to assess factors influencing complications and treatment success.

Findings: A total of 34 studies comprising 208 patients met the inclusion criteria. The median age was 58.5 years, with trauma (28.4%), malignancy (19.7%), and burns (16.8%) being the most common wound etiology. The lower extremity was the most commonly reported anatomical site (49.0%).

Radiotherapy-exposed wounds had the highest complication rate (60.0%, $p = 0.022$). Exposed bone with periosteal stripping (33.3%) and exposed tendon with denuded

paratenon (38.9%) led to higher complication rates than exposed bone with intact periosteum (20.9%, $p = 0.295$) and exposed tendon with intact paratenon (18.6%, $p = 0.110$) respectively, though not statistically significant. Across all cases, wounds with exposed bone with periosteal stripping and exposed tendon with denuded paratenon had significantly higher complication rates than non-denuded cases (40.0% vs. 21.8%, $p = 0.011$).

Age was a significant risk factor for complications, with an odds ratio of 1.015 ($p = 0.039$), indicating that each additional year increased the likelihood of complications by 1.52%. Median BTM integration time was longer in complicated cases (45.0 days vs. 38.5 days, $p = 0.097$), suggesting a potential association between delayed integration and adverse outcomes.

Conclusions: Increased complication rates in wounds with exposed bone with periosteal stripping, exposed tendon with denuded paratenon and irradiated wounds highlight the need for careful patient selection and clinical judgment. While BTM generally achieves good success rates, increased patient age and wound complexity adversely influence outcomes.

The Role of Custom-Made 3D Silicone Implants in Breast Asymmetry Associated with Thoracic Deformities

Abstract Presenter: Giulia Tringale MD

Abstract Co-Author(s): Giuseppe Nisi MD, Roberto Cuomo, Luca Grimaldi MD, Flavio Facchini MD

Many young women seek consultation for breast asymmetry and request bilateral breast augmentation. However, during the examination, it is crucial to investigate the presence of any underlying thoracic deformity that may contribute to the asymmetry. In cases where breast asymmetry is associated with a thoracic defect, such as pectus excavatum, breast surgery alone may be insufficient or even ineffective (1).

This case report presents a woman with breast asymmetry and asymmetric pectus excavatum. At the age of 15, she initially underwent breast augmentation with mastopexy using implants of different sizes in an attempt to mask the underlying chest deformity. However, two years later, she underwent a Nuss procedure for pectus excavatum, which resulted in incomplete correction and persistent asymmetry.

By the age of 32, she remained dissatisfied with the outcome due to capsular contracture and persistent breast and chest asymmetry. To achieve a more effective correction, we decided to start over, first removing the contracted implants and prioritizing the correction of the thoracic deformity. This was accomplished using a custom-made silicone sternal implant designed with 3D technology. A chest CT scan allowed for the creation of a virtual replica of the patient's anatomy, enabling the design of a personalized silicone prosthesis with millimeter precision. The implant was positioned within the thoracic defect, placed under the pectoralis major muscle. Six months later, with a restored and more symmetric chest wall, we proceeded with breast augmentation surgery, achieving a more harmonious and natural result.

The use of custom-made 3D silicone implants appears to be a highly promising approach in reconstructive plastic surgery, offering essential support in cases of breast asymmetry associated with thoracic malformations.

(1) Chavoïn JP et al. Le sein et les malformations thoraciques: stratégie chirurgicale et implants [Breasts and congenital chest-wall deformities: Surgical strategy with 3D implants]. *Ann Chir Plast Esthet.* 2022;67(5-6):404-413. doi:10.1016/j.anplas.2022.07.010

The role of Plastic Surgery in managing HIV-associated lipodystrophy through the VIH (Visual Index of Health) score for outcome evaluation

Abstract Presenter: Giuseppe Guarro

INTRODUCTION: HIV-associated lipodystrophy is a complication of prolonged antiretroviral therapy, characterized by abnormal fat redistribution (1,2,3). This study evaluates the impact of plastic surgery interventions on health-related quality of life (QoL) in HIV-positive patients using the Visual Index of Health (VIH) protocol.

MATERIALS AND METHODS: A retrospective analysis was conducted on 264 HIV-positive patients presenting with lipohypertrophy who underwent surgical intervention from November 2016 to July 2024. Surgical interventions consisted of district-specific liposuction (UAL and SAL) and contextual lipofilling of areas requiring volumization. Liposuction was performed using ultrasonic-assisted techniques to precisely target fat deposits in the dorsocervical region, abdomen, and flanks. Harvested adipose tissue

was purified and immediately re-injected into areas of volume depletion, including the face, buttocks, and extremities, to restore symmetry and enhance aesthetic outcomes. Postoperative care included compression garments, routine follow-ups at 1, 3, and 6 months, and continuous monitoring of surgical outcomes. Demographic data, therapy details, and clinical outcomes were collected. The VIH protocol evaluated HRQoL across five macro areas: self-care, mobility and social life, usual life, discomfort, and anxiety/depression. Statistical analyses included subgroup comparisons by sex, age, and CD4 count. Scores ranged from 1 to 5, with higher scores indicating better function or less discomfort. Statistical analysis was performed using paired t- tests, with significance set at $p < 0.05$.

RESULTS: Of 264 patients, 65% were male, with a mean age of 42 years. All patients completed the 6-month follow-up. Significant improvements were observed across all domains. In the self-care domain, mean scores increased from 3.5 (± 0.6) pre-surgery to 4.2 (± 0.5) post-surgery, with a mean difference of +0.7 (± 0.2) ($p = 0.004$). Mobility and social life scores improved from 3.6 (± 0.5) to 4.4 (± 0.4), with a mean difference of +0.8 (± 0.3) ($p = 0.003$). Usual life activities scores increased from 3.4 (± 0.7) to 4.3 (± 0.6), with a mean difference of +0.9 (± 0.4) ($p = 0.002$). Discomfort scores improved from 3.2 (± 0.5) to 4.0 (± 0.4), with a mean difference of +0.8 (± 0.3) ($p = 0.004$). Anxiety/depression scores increased from 2.9 (± 0.6) to 3.8 (± 0.5), with a mean difference of +0.9 (± 0.3) ($p = 0.001$). No major complications were reported. The greatest improvements were seen in anxiety/depression and discomfort scores (mean change: 0.7 ± 0.2 ; $p < 0.005$). Female patients experienced greater HRQoL benefits compared to males. Patients with higher baseline CD4 counts showed more substantial improvements.

CONCLUSIONS: Plastic surgery significantly enhances the health-related quality of life of HIV-positive patients, as demonstrated by the VIH protocol. Integrating surgical interventions into holistic HIV care frameworks is vital for effectively addressing both physical and psychological dimensions (4,5).

REFERENCES

1. Guaraldi G, Murri R, Orlando G, et al. Lipodystrophy and quality of life of HIV-infected persons. *AIDS Rev.* 2008;10(3):152-61. PMID: 18820717.
2. Moyle GJ, Lysakova L, Brown S, et al. A randomized open-label study of immediate versus delayed polyactic acid injections for the cosmetic management of facial lipoatrophy in persons with HIV infection. *HIV Med.* 2004;5(2):82-7. doi:10.1111/j.1468-1293.2004.00200.x.

3. Guaraldi G, Baraboutis IG. Evolving perspectives on HIV-associated lipodystrophy syndrome: moving from lipodystrophy to non-infectious HIV co-morbidities. *J Antimicrob Chemother.* 2009;64(3):437-40. doi:10.1093/jac/dkp240.

4. Hultman CS, McPhail LE, Donaldson JH, Wohl DA. Surgical management of HIV-associated lipodystrophy: role of ultrasonic-assisted liposuction and suction-assisted lipectomy in the treatment of lipohypertrophy. *Ann Plast Surg.* 2007;58(3):255-263.

5. Duracinsky M, Leclercq P, Herrmann S, Christen MO, Dolivo M, Goujard C, Chassany O. Safety of poly-L-lactic acid (New-Fill®) in the treatment of facial lipoatrophy: a large observational study among HIV-positive patients. *BMC Infect Dis.* 2014 Sep 1;14:474. doi: 10.1186/1471-2334-14-474. PMID: 25178390; PMCID: PMC4160543.

Use of MatriDerm as an Adhesion Barrier after primary FDP repair in zone II of the human hand

Abstract Presenter: Zlatko Vlajcic MD, PhD

Abstract Co-Author: Rado Zic MD

Introduction: The prevention of peritendinous adhesions after tendon repair is a significant challenge in hand surgery. The search for the "holy grail" to reduce postoperative peritendinous adhesions is ongoing. Our study is a prospective, double-blind, randomized case-control study using MatriDerm as an adhesion barrier after primary repair of the flexor digitorum profundus (FDP) tendon of the human hand in zone II. To our best knowledge, MatriDerm sheets had never been clinically used for this purpose before.

Material and methods: Between September 2021 and April 2024, we evaluated 40 patients with isolated FDP injuries. All tendons were repaired using a core and circumferential suture. MatriDerm is a single-layer dermal matrix composed of collagen and elastin (Skin and Health Care AG, Billerbeck, Germany) that has been previously proven effective in similar cases. Randomization was double-blinded into two groups of 20 patients. In the first group the repaired site was wrapped in MatriDerm, while in the second, the site was repaired without MatriDerm. Clinical and functional results were

evaluated using the total active movement (TAM), ultrasound, and visual analog pain scale (VAS).

The MatriDerm group showed a mean TAM of 82.1%, whereas that of the control group was 66.11%. According to the Mann-Whitney- U test, the MatriDerm group showed significantly higher values than the control group with a medium effect size (exact $p=0.014$, $p<0.05$, Pearson's $r=0.36$). Adhesion formation on ultrasound and pain scores were similar between the control and MatriDerm groups.

Conclusion: Our prospective, double-blind, randomized clinical study showed significantly better TAM outcomes in repaired tendons wrapped in MatriDerm. The promising results of this novel MatriDerm application in zone II flexor tendon repair must withstand testing in wider, adequately powered clinical trials in the future.

Study Type: Prospective, Double-blind, Randomized, Clinical Study

Keywords: Adhesion Barrier, Adhesion Formation, MatriDerm, Tendon, Gliding

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When Everything Seems To Fail - A Case Report Of Intraoperative Skin Expansion For Head And Neck Salvage Reconstruction

Abstract Presenter: Eliane Jaconiano

Abstract Co-Author(s): Ricardo Horta, Nuno Falcão, Pedro Machado, Joana Costa MD, Margarida Mendes

INTRODUCTION: Reconstruction of complex head and neck defects after multiple failed flaps presents a significant challenge, particularly when dealing with radiation-induced tissue damage and limited recipient vessels. When in need for additional skin and no apparent suitable flap left to use, skin expansion may be a useful option. While traditional tissue expanders are well-established, they carry risks associated with prolonged implant placement (1,2). Intraoperative tissue expansion (ITE) offers a viable alternative (3).

METHODS: We present a case of a 68-year-old female with squamous cell carcinoma of the floor of mouth diagnosed in 2022. After initial segmental mandibulectomy, pelviglossectomy, bilateral neck dissection and immediate free fibular osteoseptocutaneous flap reconstruction, the patient developed necrotizing fasciitis. Salvage reconstruction with pectoral and supraclavicular flap enabled the patient to perform radiotherapy but one month later she developed exposure of the mandibular reconstruction plate. Following failed salvage procedures including a second free fibular flap, supraclavicular and pectoral flaps, the patient still presented with soft tissue retraction and insufficient soft tissue coverage for mandibular reconstruction. A staged approach using intraoperative tissue expansion with Foley catheter balloons was implemented.

RESULTS: A staged tissue expansion implant approach was deemed too risky given the patient's history of multiple infections. Instead, through sequential intraoperative tissue expansion procedures, we successfully achieved adequate soft tissue coverage for mandibular plate reconstruction placement and lower lip repositioning. No immediate or delayed complications were observed. The patient maintained stable soft tissue coverage at 3-month follow-up, with improved speech, oral competence and enabled tracheostomy decannulation.

CONCLUSION: Intraoperative tissue expansion may serve as a useful salvage technique in complex head and neck reconstruction. This approach provides immediate results with reduced complication rates compared to traditional expansion methods, making it an important addition to the reconstructive surgeon's armamentarium for challenging cases with very limited options.

References

1. NEUMANN CG. The expansion of an area of skin by progressive distention of a subcutaneous balloon; use of the method for securing skin for subtotal reconstruction of the ear. *Plast Reconstr Surg* (1946). 1957;19(2):124-130. doi:10.1097/00006534-195702000-00004
2. Radovan C. Tissue expansion in soft-tissue reconstruction. *Plast Reconstr Surg*. 1984;74(4):482-492. doi:10.1097/00006534-198410000-00005
3. Johnson TM, Brown MD, Sullivan MJ, Swanson NA. Immediate intraoperative tissue expansion. *J Am Acad Dermatol*. 1990;22(2 Pt 1):283-287. doi:10.1016/0190-9622(90)70038-j

WHEN RADIATION MEETS RECONSTRUCTION: CHALLENGES, COMPLICATIONS AND INNOVATIONS

Abstract Presenter: Mihai Iliescu-Glaja MD, PhD

Abstract Co-Author(s): Fabiana Simion, Zorin Crainiceanu MD, Daciana Grujic

INTRODUCTION: Oncoplastic breast surgery (OBS) and radiotherapy (RT) are essential in breast cancer management, yet their intersection poses significant challenges in breast reconstruction (BR). While RT enhances locoregional tumor control, it also increases the risk of complications, particularly capsular contracture (CC) in implant-based reconstruction (IBR). Expert panel consensus led by Nava et al. indicates that autologous flap reconstruction (AFR) remains the gold standard in irradiated patients, yet IBR remains widely used [1]. Preventative strategies and emerging pharmacological interventions for CC require further investigation.

MATERIAL AND METHODS: We comprehensively reviewed international literature and analyzed institutional data on reconstructive outcomes post-RT. Additionally, we initiated a prospective study exploring minimally invasive CC prevention methods, evaluating botulinum toxin type A, leukotriene receptor antagonists, and corticosteroids. The study includes at least 70 patients, split into prevention (40) and treatment (30) groups, with a minimum of 12 months of follow-up.

DISCUSSION: Literature and institutional data confirm that RT significantly increases CC risk, particularly in IBR patients lacking full prosthesis coverage [2]. Implant-assisted autologous techniques (e.g., LD flap + implant) show improved outcomes but remain suboptimal in irradiated fields. Future strategies include hybrid reconstruction, adipose-derived stem cell therapy, and genomic profiling for radiosensitivity, emphasizing the need of personalized approaches. [3,4]. Navigating breast reconstruction in irradiated patients requires a multidisciplinary, evidence-based approach. While autologous techniques remain the gold standard, proactive strategies are essential for IBR success. Our study highlights pharmacological adjuncts as a potential innovation in CC prevention. As research progresses, we anticipate further clarifying their role in optimizing reconstructive outcomes and patient satisfaction.

CONCLUSION: Although our prospective study is ongoing, early observations suggest promising potential for pharmacological interventions. Botulinum toxin type A may influence fibrotic capsule formation, while leukotriene antagonists appear to impact

chronic inflammation and biofilm-related contracture. Corticosteroids provide short-term benefits but raise concerns regarding long-term efficacy. While definitive conclusions remain pending, these findings indicate a direction worth exploring.

1. Nava MB, Benson JR, Audretsch W, Blondeel P, Catanuto G, Clemens MW, Cordeiro PG, De Vita R, Hammond DC, Jassem J, Lozza L, Orecchia R, Pusic AL, Rancati A, Rezai M, Scaperrotta G, Spano A, Winters ZE, Rocco N. International multidisciplinary expert panel consensus on breast reconstruction and radiotherapy. *Br J Surg*. 2019 Sep;106(10):1327-1340. doi: 10.1002/bjs.11256. Epub 2019 Jul 18. PMID: 31318456.
2. See MS, Farhadi J. Radiation Therapy and Immediate Breast Reconstruction: Novel Approaches and Evidence Base for Radiation Effects on the Reconstructed Breast. *Clin Plast Surg*. 2018 Jan;45(1):13-24. doi: 10.1016/j.cps.2017.08.001. Epub 2017 Oct 3. PMID: 29080655.
3. Rubini D, Gagliardi F, Menditti VS, D'Ambrosio L, Gallo P, D'Onofrio I, Pisani AR, Sardaro A, Rubini G, Cappabianca S, Nardone V, Reginelli A. Genetic profiling in radiotherapy: a comprehensive review. *Front Oncol*. 2024 Jul 26;14:1337815. doi: 10.3389/fonc.2024.1337815. PMID: 39132508; PMCID: PMC11310144.
4. Rigotti G, Marchi A, Galiè M, Baroni G, Benati D, Krampera M, Pasini A, Sbarbati A. Clinical treatment of radiotherapy tissue damage by lipoaspirate transplant: a healing process mediated by adipose-derived adult stem cells. *Plast Reconstr Surg*. 2007 Apr 15;119(5):1409-1422. doi: 10.1097/01.prs.0000256047.47909.71. PMID: 17415234.