2023 PSTM Global Partner E-Posters

USE OF MICROPERFORATING FLAPS IN THE MANAGEMENT OF ELECTRICAL BURNS

Abstract Presenting Author: Natalia Katherine Moreno Rozo

ELECTRICAL BURNS CAN HAVE DEVASTATING OUTCOMES THAT REQUIRE NOVELTY TECHNIQUES TO OBTAIN THE BEST RECONSTRUCTIVE RESULTS. FLAPS DESIGNED IN FREE STYLE ON RANDOM PEDICLES REPRESENT A USEFUL AND REPRODUCIBLE TOOL.

TWO CASES OF PEDIATRIC PATIENTS TREATED AT LA MISERICORDIA HOSPITAL (BOGOTÁ, COLOMBIA) WITH HIGH VOLTAGE ELECTRICAL BURNS, THEIR MANAGEMENT AND EVOLUTION AFTER RECONSTRUCTION WITH RANDOM MICROPERFORATING FLAPS, ARE PRESENTED.

The Alhujja technique for perfect symmetry in breast reduction surgery

Abstract Presenting Author: Almukhtar Alatbe MD

Breast surgery is a common surgery that aims to decrease the size of the breast and reshape according to measurements. There are different measurement techniques, such as a vertical scar, inverted T-scar and a horizontal scar. Unfortunately, many complications, like asymmetry, can happen due to using breast measurement alone. Precise marking and understanding of the shape of the breast is important to improve symmetry and decrease the tension on both the side legs and result in a fine scar, like a lollipop scar. This article aims to highlight how to improve the final surgical outcome using measurements that lead to symmetrical shape and size despite the different techniques. In addition, this article aims to outline techniques that help predict the desired size of the breast.

An Alternative Mechanical Technique for Isolation of Adipose-Derived Stem Cells – The Blade Method

Abstract Presenting Author: Chun Kai Yew MBBS

Additional Author(s): Amirul Ashraf Ahmad Shan Wani, Sadia Farhana, Siti Fatimah Noor Mat Johar, NurAzida Mohd Nasir

Since the discovery of adipose-derived stem cells (ADSC), adipose tissue has been described as an ideal stem cell source. Numerous methods were designed to isolate ADSC, divided into enzymatic and mechanical techniques. The enzymatic technique is expensive, time-consuming, risks altering cell phenotype and raises legislative issues. However, the mechanical technique was shown to have a relatively lower yield. This study describes the optimization of the mechanical technique for ADSC isolation followed by verification and quantification.

In this study, 28 samples from 19 patients were collected. Adipose tissue was sampled using tissue blocks or lipoaspirates. The samples were prepared using scalpel blades followed by centrifugation. The samples were evaluated for cell viability with trypan blue solution and quantified with a hemocytometer. The ADSC were cultured, and the surface antigens CD29, CD34, CD73, CD90, and CD105 were detected using a flow cytometer. The ADSC were then differentiated into adipocytes, chondrocytes and osteocytes, and their respective identities were verified with Oil Red O staining, Toluidin Blue staining, and Alizarin Red staining.

The mean weight of samples was 13.653g (range 1.752 to 40.587g, SD ±12.16g). The mean number of ADSC isolated was 1.187x10^5 (SD ±1.461x10^5). The mean number of ADSC per gram was calculated as 1.831x10^4 (SD ±3.401x10^4). The ADSC expressed high levels of CD29, CD73, CD90, and CD105, with low levels of CD34. Differentiation to adipogenic, chondrogenic and osteogenic lineages were successful.

Our mechanical technique for ADSC isolation provides a simple alternative method that can be tailored for future research or clinical application.

Principles of cleft palate repair

Abstract Presenting Author: Jiwoo Jang

Additional Author: Joseph Park MD

The primary goals of cleft palate repair are to restore normal speech function, close the cleft, and maintain normal facial growth by minimizing surgical trauma. While technical advancements have been made over the past century, the fundamentals have never changed. At our institution, we utilize the following algorithm in cleft palate repair: double-opposing Z-plasty for submucous and Veau I cleft palates, LITE palatoplasty (Baek, Ann Plast Surg, 2013, 10.1097/SAP.0b013e31829565d8) for Veau II, and two-flap palatoplasty for Veau III & IV cleft palate.

We retrospectively reviewed the medical records of consecutive patients who underwent primary palatoplasty by a single surgeon (Rong-Min Baek MD) at our institution between July 2003 to June 2022. Both syndromic and non-syndromic cleft palates were included. Patient demographics, operative details, and pre/postoperative speech evaluations were analyzed.

582 patients underwent primary palatoplasty, consisting of 36.4%, 17.5%, 15.6%, 3.6%, and 26.85% of Veau type I, II, III, IV, and submucous cleft palate, respectively. Competent velopharyngeal mechanism without hypernasality was achieved in 76.2%, and borderline mechanism with normal intelligibility was achieved in 16.5%; together achieving socially acceptable speech with no or minimal hypernasality in 94.7% of the patients. There were three (0.52%) incidences of fistula, all occurring at the soft-hard palate junction. Thirty-three patients (5.67%) required additional operation (either DOZ palatoplasty or posterior pharyngeal flap) due to persistent velopharyngeal insufficiency after the initial palatoplasty.

With our algorithm, cleft palate patients can be effectively managed with low complication rates and outstanding speech outcomes.

Intradermal pentoxifylline and thermal camera, allies for restoring NAC viability.

Abstract Presenting Author: Linda Rincon Rubio MD

Additional Author(s): Marisela Cemborain Valarino MD, Angelique Bookaman, Bernardette Gil, Katiana Gutierrez

Background: Nipple-areola complex (NAC) viability is one of the most fearsome concerns in breast surgery. It's very valuable to find strategies that could help to resolve NAC vascular compromise during surgery.

Methods: We present the case of a 51-year-old female, with no pathological background, with a breast tomosynthesis that reported dominant superior pedicles, who underwent a secondary mastopexy (superior pedicle) with 355 cc implants. To evaluate the NAC viability, we evaluated changes in NAC clinical characteristics and temperature, using a FLIR ONE smartphone thermal camera.

Procedure: During surgery, NAC temperature measures were performed in the pre, intra and immediate post operative stages and NAC clinical aspect was evaluated at the closure of the wounds. In this case, appearance of the left NAC was pale at the end of the procedure and a decrease of 4.1ºC in temperature was found between the initial (24.9°C) and the final measurement (20.8°C). 2 cc of intradermal pentoxifylline were applied in the areola, diluted with 1 cc of 1% cifarcain, a dose of 0.1 cc every half centimeter.

Results: Appearance and temperature of the left NAC were evaluated 10 minutes after intradermal pentoxifylline administration, finding an evident clinical improvement in color aspect and a rise in temperature (2°C), with evidence of bleeding. Patient outcome was

excellent as well as the result in a 3-month follow-up.

Conclusion: The use of the FLIR ONE smartphone thermal camera was an excellent tool for the intraoperative evaluation of the NAC temperature, and in this case injection of intradermal pentoxifylline was effective in the recovery of possible vascular compromise of the NAC during a mastopexy with implants surgery.

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Use of Matriderm® as an adhesion barrier after primary flexor repair on the human hand.

Abstract Presenting Author: Zlatko Vlajcic MD, PhD

Matriderm® 1mm, single layer dermal matrix, composed of collagen and elastin (Skin and Health Care AG, Billberbeck, Germany).
Matriderm® is a structurally intact matrix of bovine type I, III, V collagen with elastin utilized for dermal regeneration primary after full thickness or deep dermal burns and chronic wounds. The matrix serves as a support structure for the ingrowth of cells and vessels and after that resorbs. Its elastin component improves the stability and elasticity of the regenerating tissue. The matrix reduces wound contracture and histologically collagen bundles in the scar are more randomly orientated.

Tendon healing proceeds by a combination of intrinsic and extrinsic processes that occur simultaneously. Intrinsic healing occurs within the tendon as a result of the activity of tenocytes and appropriate nutrition to them. Extrinsic healing occurs through the chemotaxis of the specialized fibroblasts into the defect from the ends of the tendon sheath. Synovial fluid diffusion also contributes to intrinsic healing by providing an additional nutritional source.

Reconstruction of deep flexor tendons in the second zone (Zone II) of the hand without adhesion is of great importance.
The superficial and deep tendons in Zone II pass through a synovial canal made by

annular and cruciate pulleys from distal palm to middle phalanx.

Prevention of peritendinous adhesions following tendon repair represents a major challenge in hand surgery. Despite the improvements in surgical techniques and postoperative rehabilitation programs, the formation of fibrous adhesions between the healing tendon and the surrounding tissues is still the most common complication after tendon repair. Both tendon sheath damage and immobilization contribute to the adhesion formation. Post-operative mobilization decreases adhesion formation and improves function after flexor tendon repair, no doubt about it. But there is insufficient evidence from randomized, controlled trials to define the best mobilization strategy. The search for the "holy grail" of reduction the postoperative peritendinous adhesions are still in progress, mainly in two directions: 1.-using mechanical barriers (biological or synthetic) such as autogenous vein graft, chondritis sulphate coated polyhydroxyethyl metacrylate membrane, hydrogel sealant, seprafilm, polytetrafluorethylene surgical membranes, silicone rubber envelopes, chitosan membranes, amniotic membranes, silicone sheeting, stainless steel sheeting, sterispon wrapping, cellophane, polyethylene membranes, alumina sheaths, absorbable oxidized regenerated cellulose (Interceed) etc. 2.-using biochemical control of the size and quality of newly formed collagenous scar such as 5-fluorouracil, hyaluronic acid, indomethacin, antihistamine, aprotinin (proteinase inhibitor), collagen inhibitor, fibrin, dextran, cortisone etc.

Talking about mechanical barriers, the ideal one should be biocompatible, allow tendon movement, remain at the site of repair long enough to allow tendon healing, absorbable, cheap, easy to use and not too bulky.

Some synthetic materials failed because they stimulated a severe inflammatory response or allowed ingrowths of adhesions around the edges of the material. Other materials prevented nutrient diffusion to the healing tendon leading to tendon necrosis.

The most of the studies about this problem are experimental animal studies. Decrease in tendon adhesion formation demonstrated in an animal model could be disappointing in clinical trials. The animal studies can't be directly translatable to human clinical medicine, as their physical and anatomical features do not match the human anatomy.

A met-analysis search of PubMed, Medline, CINAHL and Embase databases using the keywords 'tendon adhesion prevention', 'tendon healing', 'adhesion prevention in tendons' and 'adjuvants for adhesion prevention' suggested that changes in surgical techniques and various proposed pharmacological and non-pharmacological modalities need to withstand the test of adequately powered human trials, before their justification for potential benefit in clinical practice.

The hypothesis is that the use of Matriderm® 1mm barrier will significantly reduce the extent of peritendinous adhesion formation after tendon repair or tenolysis and not generate a severe inflammatory response.

Prospective, double-blind, randomized, clinical study.

The COVID-19 pandemic impact on breast cancer treatment in Croatia - single center study

Abstract Presenting Author: Patricia Videc MD

Additional Author(s): Zlatko Vlajcic MD, PhD, Rado Zic MD

Background: The COVID-19 pandemic had an enormous impact on health care systems all over the world. In Croatia it resulted in hospital system reorganization which made Clinical Hospital Dubrava the main COVID-19 center in Croatia. For the plastic surgery department this consequently resulted in cancelling elective surgeries and operating on cancer patients only. The objective of this study was to analyse the impact of the COVID-19 pandemic on breast cancer treatment considering the need for neoadjuvant chemotherapy and radicality of surgical procedure.

Methods: A retrospective single center study was performed and included all newly diagnosed breast cancer patients presented by the multidisciplinary breast cancer team at Clinical Hospital Dubrava. They were divided into three groups depending on the time of presentation: from August 2019 to February 2020 (Pre COVID-19 group), from August 2021 to February 2022 (COVID-19 group) and from April 2022 to October 2022 (Post COVID-19 group). A comparison between treatment options was made: breast conserving surgery (lumpectomy), radical surgery (simple mastectomy, MRM, SSM, NSM) and administration of neoadjuvant chemotherapy. A statistical analysis was performed in SPSS 25 programme using the chi-square test.

Results: A total of 268 patients were included; Pre COVID-19 group (n=88), COVID-19 group (n=75) and Post COVID-19 group (n=105). Patients were compared in undergoing breast conservative treatment (38.6%, 38.7%, 34.3%), radical surgical treatment (33%, 29.3%, 25.7%) and neoadjuvant chemotherapy (23.9%, 26.7%, 33.3%). Analysis showed no statistical differences among the treatment options employed throughout the three designated time periods (Pre COVID-19, COVID-19 and Post COVID-19 groups) ($\chi 2=3.210$, df=6, p=0.782).

Conclusion: The aim of this study was to provide insights into the COVID-19 pandemic impact on breast cancer treatment focusing on the radicality of surgical procedures and neoadjuvant chemotherapy administration. Even though the focus during the pandemic was on COVID-19 patients, this study suggests that newly discovered breast cancer patients received adequate treatment but for definitive results we would have to wait for the long term follow up.

Breast Implant-Associated Anaplastic Large Cell Lymphoma (BIA-ALCL): A review of novel insights

Abstract Presenting Author: Srecko Budi

AIM: The aim was to summarize what is known about BIA-ALCL so far; in terms of etiology, diagnostics, clinical presentation and treatment.

MATERIALS AND METHODS: We conducted a review of the literature available in PubMed and Scopus databases and relevant websites (US Food and Drug Administration, etc.).

RESULTS: Anaplastic large cell lymphoma (ALCL) is a rare subtype of non-Hodgkin lymphoma, and it originates from mature T-lymphocytes. Its subtypes are primary cutaneous ALCL (PC-ALCL), systemic ALCL (ALK-positive and ALK-negative) and breast implant-associated anaplastic large cell lymphoma (BIA-ALCL) as a new pathological entity. BIA-ALCL is a distinct form of CD30-positive and ALK-negative ALCL that is proved to arise in association with breast implants, usually 8-10 years after implant placement. Etiopathogenesis of BIA-ALCL is likely to be multifactorial (chronic lymphocyte stimulation, biofilm formation, implant texture, patients' genetic predisposition and time). Breast implants with textured surfaces seem to be associated with nearly all cases of BIA-ALCL. The classical clinical presentation is late onset seroma around breast implant or tumor on the inner side of the capsule. In most cases, diagnosis is made by ultrasound imaging, magnetic resonance imaging, aspiration of periprosthetic fluid, cytologic and immunophenotypic analysis. Most of the patients present with localized disease, which generally confers an excellent prognosis. Complete en bloc resection has a key role in the treatment. Chemotherapy, radiotherapy, or both are indicated in more advanced cases.

CONCLUSIONS: Further research and international data collection is needed to better understand the causes of BIA-ALCL. Raising awareness among medical professionals and the patients is of utmost importance.

A Review of Novel Insights into Breast Implant-Associated Anaplastic Large Cell Lymphoma (BIA-ALCL)

Abstract Presenting Author: Marko Lagancic

Additional Author: Srecko Budi

A**IM:** The aim was to summarize what is known about BIA-ALCL so far; in terms of etiology, diagnostics, clinical presentation and treatment.

MATERIALS AND METHODS: We conducted a review of the literature available in PubMed and Scopus databases and relevant websites (US Food and Drug

Administration, etc.).

RESULTS: Anaplastic large cell lymphoma (ALCL) is a rare subtype of non-Hodgkin lymphoma, and it originates from mature T-lymphocytes. Its subtypes are primary cutaneous ALCL (PC-ALCL), systemic ALCL (ALK-positive and ALK-negative) and breast implant-associated anaplastic large cell lymphoma (BIA-ALCL) as a new pathological entity. BIA-ALCL is a distinct form of CD30-positive and ALK-negative ALCL that is proved to arise in association with breast implants, usually 8-10 years after implant placement. As of March 1, 2023, ASPS (American Society of Plastic Surgeons) now recognizes approximately 418 suspected or confirmed cases in the US and a total of 1355 worldwide. As of April 1, 2022, the Food and Drug Administration (FDA) has received a total of 1130 US and global medical device reports (MDRs) of BIA-ALCL, including 59 known deaths. Etiopathogenesis of BIA-ALCL is likely to be multifactorial (chronic lymphocyte stimulation, biofilm formation, implant texture, patients' genetic predisposition and time). Breast implants with textured surfaces seem to be associated with nearly all cases of BIA-ALCL. The classical clinical presentation is late onset seroma around breast implant or tumor on the inner side of the capsule. In most cases, diagnosis is made by ultrasound imaging, magnetic resonance imaging, aspiration of periprosthetic fluid, cytologic and immunophenotypic analysis. Most of the patients present with localized disease, which generally confers an excellent prognosis. Complete en bloc resection has a key role in the treatment. Chemotherapy, radiotherapy, or both are indicated in more advanced cases.

CONCLUSIONS: Further research and international data collection is needed to better understand the causes of BIA-ALCL. Raising awareness among medical professionals and the patients is of utmost importance.

A case series study of the utility of neoadjuvant BRAF or immunotherapy for resectable clinically staged III/IV melanoma in determining patient outcome.

Abstract Presenting Author: Alan O'Sullivan, MD
Alan O'Sullivan

Additional Author: Sean O'Sullivan

INTRODUCTION: Melanoma is a malignant tumor arising from melanocytes. It is the fifth most common invasive cancer in Ireland, with a rising incidence. Standard treatment is surgery for stage I/II and combined surgery and adjuvant systemic therapy for stage III/IV. These systemic therapies include immune checkpoint inhibitors (ICI) such as anti-cytotoxic T lymphocyte antigen-4 (CTLA-4) antibodies such as ipilimumab and anti-programmed death receptor-1 (PD-1) antibodies such as nivolumab. ICI act to up-regulate the host immune system and have been shown to improve recurrence-free survival in patients with high-risk melanoma by activating antitumor T cells at sites of micro-metastases. Other systemic therapies include BRAF/MEK inhibitors, such as

dabrafenib and vemurafenib. These have also been used in the adjuvant setting for the treatment of stage III and IV melanoma. They act by inhibiting the proto-oncogene by targeting the mitogen-activated protein kinase (MAPK)-pathway and have similarly been shown to improve survival.

Given the success of ICI in the adjuvant setting research into the viability of neoadjuvant ICI has been undertaken with initial results indicating an improved overall survival. Our study sought to assess the role of neoadjuvant ICI in the Irish setting and to identify early trends in the clinical setting.

AIMS AND OBJECTIVES: Neoadjuvant immunotherapy for melanoma is a rapidly developing field, employed in Ireland only since 2019. We have attempted to:
1. To assess the role of perioperative immunotherapy for clinically stage III and resectable stage IV melanoma in an Irish setting.
2. To identify broadly recurrent themes throughout cases and explore patient experience in order to generate hypotheses.
3. To indicate the viability of this novel approach in an Irish setting.
4. To highlight this emerging strategy to clinicians.

Objective: To characterise the patients who were suitable for neoadjuvant therapy and identify broadly recurrent themes throughout cases and to examine correlations between:
1. Pathological response of melanoma cells
2. CTCAE toxicity
3. Patient survival and progression free survival

METHODS: Design: Prospective case series
Setting: CUH, SIVUH, UHK
Participants: Twelve participants were deemed eligible according to the following criteria:
Inclusion:
1. Patients who were diagnosed with clinically stage III or IV resectable melanoma.
2. Patients who received at least one dose of neoadjuvant immunotherapy with immune checkpoint inhibitors or BRAF therapy with the intention of surgical resection of the melanoma.
3. Adults aged over 18 years old.
4. Patients attending CUH, SIVUH or UHK between 2018 to 2022 and who commenced neoadjuvant therapy before September 2022
Exclusion:
1. Children (<18 years old).
2. Patients unable to provide consent.
3. Patients with uveal melanoma.
4. Patients who will not have undergone surgery by November 2022.

Outcomes: Pathological response of melanoma cells, CTCAE toxicity, patient survival and overall survival

RESULTS: Twelve patients were recruited and followed up until January 2023. Of this cohort ten received immune checkpoint inhibitors and two received BRAF/MEK inhibitors. Three patients experienced complete or near-complete radiological responses to neoadjuvant systemic therapy and consequently did not undergo surgery. Nine patients did undergo surgery of which six achieved complete or near complete pathological responses and three had partial or poor pathological responses. Neoadjuvant regimen nor the profile of adverse events in the neoadjuvant setting appeared to correlate to pathological response. Adverse effects were more common and more severe in the neoadjuvant setting compared to the adjuvant setting with ten patients reporting neoadjuvant immune related adverse events. Disease recurrence was reported in all patients (three) who did not undergo surgery due to radiological response. No patient who was reported to have a complete or near complete pathological response (six) had a disease recurrence at the time of writing.

CONCLUSIONS: Neoadjuvant immunotherapy for melanoma is a new approach which may have far ranging implications for melanoma care in the future. In this series we illustrate how this novel approach is working in our unit. We found that pathological response correlates with short term patient survival however radiological response is an insufficient predictor of survival. Immune related adverse effects are commonly reported in the neoadjuvant setting and can necessitate alteration of treatment regimens and delay surgery.

Streamlining Skin Cancer Care: The Development of a See and Treat Service in a Tertiary Plastic Surgery Referral Centre for the Management of Non Melanomatous Skin Cancers

Abstract Presenting Author: Muireann Keating

Additional Author(s): Stephanie Bollard MD, Shirley Potter

Non-Melanoma Skin Cancer (NMSC) is the most common malignancy diagnosed in Ireland, with over 10,000 cases diagnosed nationally per year. The classic gold standard treatment for the management of these conditions is excision, usually under local anaesthetic. These procedures are usually performed by Plastic and Reconstructive surgeons. The Plastic & Reconstructive Surgery Department in our unit offer a NMSC service which receives referrals for over 4,000 suspected NMSCs per year, operates on approximately 2,200 new patients per year. The Plastic Surgery NMSC Service currently runs alongside the other emergency and elective reconstructive workloads of the Plastic Surgery Team, sharing theatre and outpatient

department (OPD) resources. It is essential we improve our NMSC pathway, to avoid future overburdening of our service as the incidence increases, which would impact our ability to deliver other specialist treatments. A 'See and Treat' model in NMSC offers a patient being reviewed by a consultant and operated on the same day if suitable. The introduction of a 'See and Treat' model in our unit has improved patient flow, by reducing wait times, improving patient satisfaction, and reducing overall staff cost.

Patients in 'See and Treat' pathway are referred directly by a GP to the general Plastic and Reconstructive service for workup of a suspected skin malignancy. The referral is triaged by a consultant Plastic and Reconstructive surgery and booked in to the 'See and Treat'. day surgery unit if deemed appropriate. This service by-passes an outpatient clinic review appointment prior to being listed for excision. In the day surgery unit, they are assessed by a consultant, and if appropriate undergo an immediate surgical procedure. Resources we have developed that are needed for a successful See and Treat service includes standardised GP referrals with photographs, appropriate patient information and consultant availability. Information leaflets and packs for our unit have been designed in conjunction with the National College of Art & Design Ireland, as funded by HSE Spark Innovation programme, to aid with this.

The model used in our department reduced the waiting times from referral to excision from 86 days to 46 days in total in 2022, with no adverse impact on excision rates. An audit of the service found 100% of patients to be very satisfied or satisfied with the See and Treat service. The unit has demonstrated an over 90% excision rate at time of review. Our 'See and Treat' model, reduces both administrative staff (94 minutes to 66 minutes) and doctor task time (103 minutes to 96 minutes) by reducing the number of appointments per patient and associated paperwork. A Time-derived Activity Based Costing Analysis was performed on the new See and Treat model, with the staff identified in the current NMSC pathway. It reduces both administrative staff (94 minutes to 66 minutes) and doctor task time (103 minutes to 96 minutes) by reducing the number of appointments per patient and associated paperwork. The See & Treat model implemented saves €11500 per 100 patients in staffing and administration costs. Applying this analysis to the Plastic Surgery waitlist figures from National Treatment Purchase Fund, we estimate a national healthcare savings of €1.7 million per year.

The implementation of 'See and Treat' model for the management of NMSC improves overall process flow. It also reduces waiting times, improves outpatient availability, and reduces all staff costs.

Validation of a Reusable Cephalous Tissue Analogue Simulator in Surgical Training

Abstract Presenting Author: Anjuli Mae Ilagan

Additional Author(s): Catherine Yap-Asedillo, Deogracias Alberto Reyes

Changes caused by the COVID19 pandemic call into question the breadth and scope of training of medical professions across all disciplines, including the surgical specialties. Studies have reported that trainees in procedural specialties may be at the greatest risk for experiencing deficiency.

The study proposes to validate a reusable cephalous tissue analogue simulator that will provide the opportunity to quantitatively improve the creation of a Z- plasty by medical practitioners. Benchtop validation using an objective structured assessment of technical skills (OSATS) in the performance of standardized two-flap Z-plasties in a randomized controlled trial.

This research answers a call made by the Philippine Council for Health Research and Development under the Department of Science and Technology for biomedical devices engineering for health involving simulation platforms/ tools for health and disease studies, specifically devices and tools for training of medical students/ professionals, such as medical dummies, surgery simulators.

The study will be carried out in two phases. Phase 1 of the study involves the development of the cephalous tissue analogue simulator using proprietary gelatin-like materials with a mesh base on a facial mold. Prior to the benchtop validation, the cephalous tissue analogue will undergo face and construct validation by identified plastic surgery experts using separate visual anaolgue scales (VAS) for each respective validation.

Phase 2 involves the benchtop validation of the tissue analog simulator using an objective structured assessment of technical skills (OSATS) in the performance of standardized two-flap Z-plasties in a randomized controlled trial.

As there is currently no established mandatory standardized simulation surgery training, the medical population is considered qualified to participate. Representatives from the novice, intermediate and advanced levels will be included in this study. Novice-level participants are considered not proficient in suturing i.e. medical interns with beginner-level exposure to suturing. They may have had one suturing and knot-tying activity and less than 10 cases of actual suturing. Intermediate-level participants are ones undergoing training who have been able to suture 50 surgical wounds. Advanced-level participants are professionals who are proficient in flap creation and suturing such as General Surgery consultants and its subspecialties such as Otorhinolaryngology, Obstetrics and Gynecology, Ophthalmology, Orthopedic Surgery, and Neurosurgery, except Plastic Surgery. These advanced-level participants have opened and closed at least 200 surgical wounds. Exclusion criteria are as follows: (1) Any individual (trainee, or evaluator) who has known allergies to any of the components used for the cephalous

tissue analogue, (2) Surgical trainees who are not able to attend the training sessions and ones who are not able to train repeatedly. Diplomates of the Philippine Association of Plastic Reconstructive and Aesthetic Surgeons (PAPRAS) will be assigned as evaluators for the benchtop validation phase.

Each subpopulation will be divided equally into the negative control and positive control group during the randomized controlled trial. The negative control group will attend an instructional video training and will undergo an assessment of skill using the OSATS tool. The positive control group participants will attend the video training and be allowed repetitive practice of 3-5 attempts within 3 days prior to the OSATS tool assessment. Discriminative validity will be performed for both positive and negative control groups. Face and construct validity through the VAS will also be assessed by the participants. The study population will total 102 participants, and the benchtop trials will be performed at the Center for Advanced Surgical Skills Training Institute (CASSTI), The Medical City Hospital, Philippines. The study duration will be 18 months. A limitation of the study is that the evaluator and participant cannot be double-blinded as far as their identities are concerned.

Parameters that will be measured include face and construct validity using the VAS scores on Phases 1 and 2. Factor analysis, Kaiser-Meyer-Olkin test & Bartlett test will be used in support of this. Data on the standardization and reusability of the simulator will be reported. T-test will be used for discriminative validity with compared OSATS scores per group. A Scree Plot will be used to graphically plot the eigenvalues and each item of the assessment tools.

Measuring the parameters of face, construct and discriminative validity will provide evidence that the simulator use is valid for the acquisition of skill in the creation of the Z-plasty. Recommendations on the adoption of simulation-based modules in surgical training will be made to improve the quality of formative and summative surgical skills training.

Adopting the use of Indocyanine Green Fluorescence Technique for Locating Sentinel Lymph Nodes

Abstract Presenting Author: Adeline Foo

Additional Author(s): Jack Kelly MB MD FRCS(Plast), Shane Cullen MD

Introduction: Melanoma is the fifth most common invasive cancer in Ireland, with the fastest increase in incidence per year in Europe. Sentinel lymph node biopsy is offered to patients with disease Stage 1B or II in order to accurately provide staging and provide prognostic information. Node positive patients are escalated to Stage 3, where

guidelines recommend considering adjuvant immunotherapy treatment. Since 2020, the Health Service Executive in Ireland has agreed to reimburse Pembrolizumab and Nivolumab for treatment of Stage 3 melanoma.

Therefore, sentinel node status has become more important. The current standard for locating a sentinel lymph node in patients with melanoma is to use dual-modalities, most commonly, blue dye in conjunction with a radioisotope, technetium 99m.

The radiotracer enables preoperative imaging with a lymphoscintigram or SPECT-CT, aiding in a rapid SLN identification with intraoperative detection using a gamma probe.

Blue dye is added to visualize and confirm the lymphatic architecture during surgery.

However, blue dye has been associated with anaphylaxis and the disadvantage of technetium 99m is that it is radioactive.

Indocyanine green (ICG) has emerged over the past decade as a new tracer for SLN detection in various cancers e.g. cervical, breast. ICG is visualized intraoperatively with fluorescence imaging, providing real-time visual navigation-with a better tissue penetration than blue dye. It is also known to have a better side effect profile.

This study aims to show that ICG is a safe and effective alternative to Blue Dye for isolating sentinel node biopsies in conjunction with Technetium99.

Methods: This is a retrospective study assessing all sentinel lymph node biopsies for melanoma in two centres from February 2022 to May 2023. Data collected include patient demographics, melanoma and sentinel lymph node characteristics, modalities used, and the outcome and treatment. Patients were excluded if the operation note did not comment on modality used, if only technetium 99m was used, or if there was incomplete data. Fisher's exact test was used to compare both groups.

Results: A total of 73 patients were included in the study. There were 35 patients who received ICG and 38 patients who received blue dye. There were 41 Male and 32 Female patients. The median age of the ICG group was 71, which was significantly higher than the median age of the blue dye group which was 64.

In terms of melanoma characteristics, the most common subtypes are superficial spreading (50% ICG, 84% blue dye) and nodular (33% ICG, 16% blue dye). There were significantly more superficial spreading melanoma subtypes compared to the ICG group ($p<0.05$). In terms of location, there were significantly more melanomas in the head and neck region in the ICG group (28% vs 5%, $p<0.05$). There was no difference in median Breslow thickness for both groups (1.6mm ICG vs 1.35mm blue dye). In terms of lymph node characteristics, the axilla was the most common area biopsied (54% ICG, 50%

blue dye). There was significantly more sentinel lymph nodes that were located in the groin in the blue dye group compared to the ICG group (42% blue dye vs 17% ICG, $p<0.05$).

Lymph node positivity was positive in 11% in the ICG group and 8% in the blue dye group. Twenty percent of patients in the ICG group went on to get immunotherapy, compared to 3% in the blue dye group. There were no major differences in complications between both groups.

In terms of which modality was better, the ICG was successful 86% of the time, blue dye 82% and Technetium 99m 89%. There was no statistical significance between the groups.

Conclusion: In conclusion, picking a tracer is important for locating a sentinel lymph node as it is needed to stage and prognosticate patients. The information gathered can dictate whether a patient is offered adjuvant immunotherapy or not. This study has shown that using indocyanine green fluorescence in sentinel lymph node biopsy is not inferior to established modalities including blue dye or technetium 99. It is a useful alternative during periods of shortage of T99 and at locations where it is not obvious where the sentinel lymph node will track, for example, midback. It is useful for head and neck lesions in centres that may not be able to perform SPECT CT.

Optimal Solution of Mastectomy And Reconstruction In The Breast Cancer Patients With Augmented breasts

Abstract Presenting Author: Tae Hyun Kim MD

Additional Author(s): Seongheum Jeong MD, Chung Hun Kim MD, PhD**,** Euna Hwang MD, PhD

Introduction: Breast cancer presents unique challenges for patients who previously underwent breast augmentation. As the popularity of breast augmentation continues to rise, the intersection between cosmetic surgery and oncologic treatments becomes an increasingly important area of focus. So, our study is dedicated to exploring the optimal solutions for mastectomy and reconstruction in breast cancer patients with augmented breasts and providing practical guidelines to optimize patient care.

Methods: We reviewed mastectomy and breast reconstruction methods for breast cancer patients with augmented breasts.
Case 1. The patient had small breasts and underwent augmentation mammoplasty. Cancer in the left breast including the implant was completely removed, and a two-stage breast reconstruction was performed. A tissue expander was inserted, followed by a

breast implant change in both breasts.
Case 2. In the case of medium-to-large breasts, the previous implant was removed on both sides and breast-conserving surgery (BCS) was performed in right breast. Subsequently, mastopexy was conducted in left breast. Right breast underwent post-mastectomy radiation therapy (PMRT).
Case 3. In the case of medium-to-large breasts, after performing nipple-sparing mastectomy (NSM) on the right breast with breast cancer, breast reconstruction was carried out using tissue expander (TE) and implant change. The opposite side did not undergo any surgery.
Case 4. In the case of medium-to-large breasts, after performing total mastectomy (TM) on the left breast with breast cancer, reconstruction was done using a latissimus dorsi (LD) myocutaneous flap and an implant. The opposite side did not undergo any surgery.

Result: On the basis of our review, we could categorize breast mastectomy and reconstruction methods according to breast parenchymal size (small vs. medium-to-large). We recommend that prior implants of cancer site should be removed. And, for small breasts, total or nipple-sparing mastectomies are more acceptable than BCS because of PMRT. In medium-to-large breasts, BCS is able to be performed under bilateral mastopexy including removal of both implants and subsequently, PMRT is conducted on cancer site.

Conclusion:Understanding the implications of augmented breasts in the breast cancer patients is an evolving landscape in breast oncology. This study aims to provide practical guidelines to optimize patient care and facilitate effective communication during pre-treatment consultations with the breast cancer patients with augmented breasts. By identifying optimal solutions, we hope to improve the prognosis, quality of life, and psychosocial wellbeing of patients.

Photoacoustic tomography visualizing midline-crossing arteries in abdominal flaps for breast reconstruction

Abstract Presenting Author: Itaru Tsuge

Additional Author(s): Susumu Saito, Maria Chiara Munisso, Ayako Takaya, Chang Liu, Goshiro Yamamoto, Naoki Morimoto

Purpose: Photoacoustic tomography is a noninvasive, label-free imaging modality that uses near-infrared pulsed laser light and ultrasound to visualize vessels. We previously demonstrated the utility of photoacoustic tomography for anterolateral thigh flap surgery involving body-attachable vascular mapping sheets [1,2]; however, it was not possible to obtain clearly separate images of arteries and veins. In 2018, we published for the first time a study using the S-factor, a value that represents the approximate hemoglobin

oxygen saturation and is calculated using two wavelengths of light (756 and 797 nm) [3]. That study showed that the S-factor made it possible to distinguish between veins and arteries in the hands of healthy volunteers. In this study, we tried to visualize subcutaneous arteries that cross the midline of the abdomen, since these arteries are known to be important for obtaining large perfusion areas in transverse abdominal flaps.

Methods: Four patients scheduled to undergo breast reconstruction with abdominal flaps were examined. Photoacoustic tomography was performed preoperatively. The tentative arteries and veins were traced according to the S-factor, an approximate hemoglobin oxygen saturation parameter calculated using two laser excitation wavelengths (756 and 797 nm). Intraoperatively, arterial-phase indocyanine green angiography was performed after abdominal flap elevation. Images of vessels speculated to be arteries by preoperative photoacoustic tomography were merged with those of intraoperative indocyanine green angiography and analyzed in an 8×4-cm2 area below the umbilical region.

Results: The S-factor was used to visualize the midline-crossing subcutaneous arteries in all four patients. A matching analysis compared preoperative tentative arteries according to photoacoustic tomography with indocyanine green angiography results in the 8×4-cm2 area below the umbilical region and indicated a 71.3–82.1% match (average: 76.9%). S-factor gradation visualized the tentative arteries, which crossed the midline in all four patients. The midline-crossing artery was located 1–3 cm (average 1.9 cm) caudal to the lower edge of the umbilicus.

Conclusions: The S-factor mode can be used to successfully visualize subcutaneous arteries. Arterial prediction using the S-factor in photoacoustic tomography was consistent with the results of intraoperative indocyanine green angiography. This is the first study to perform comprehensive preoperative visualization of midline-crossing arteries in clinical patients. The positions of midline-crossing arteries relative to the lower caudal edge of the umbilicus differed between individuals, which indicates the importance of preoperative PAT imaging surveys. Preoperative selection of a perforator that connects to a midline-crossing artery will make the abdominal flap surgery both safer and simpler.

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venules through high-resolution and large-area photoacoustic imaging. Sci Rep. 2018; 8: 14930.

Correlation of pathological findings on lymphatic vessels with photoacoustic imaging.

Abstract Presenting Author: Yushi Suzuki MD

Additional Author(s): Hiroki Kajita MD, Shiho Watanabe, Keisuke Okabe, Kazuo Kishi MD, PhD

Purpose: Lymphatic vessels are known to undergo histological degeneration as lymphedema progresses, from normal to dilated, wall-thickened, and eventually sclerotic.[1] During this process, the lymphatic vessels gradually lose their transport capacity. Therefore, it is recommended to select functional and dilated lymphatic vessels for lymphaticovenular anastomosis (LVA), a surgical treatment for lymphedema, in order to bypass the congested lymphatics into the veins.
On the other hand, photoacoustic imaging (PAI) is a new diagnostic imaging device that can visualize lymphatic vessels with a resolution of 0.2 mm and is considered very useful for preoperative planning of LVA because it can not only visualize lymphatic vessels but also veins simultaneously[2, 3]. However, the relationship between imaging findings in PAL and the actual histological findings of the lymphatic vessels has not been clarified.
The aim of this study was to compare these findings.

Methods: Thirteen secondary lymphedema patients who underwent LVA from April 2022 to November 2022 in our hospital and who were able to have their lymphatic vessels delineated by PAI were included in the study. The obtained images of collective lymphatic vessels were classified into two types: "Straight pattern" (lymphatics run straight proximally) and "Winding pattern" (lymphatics run winding proximally). The actual lymphatic vessels were classified into four types: Normal type, Ectasia type, Contracture type, and Sclerosis type based on the appearance on the surgical field and histological morphology observed by microscope.

Results: Two male and eleven female patients were recruited, with a mean age of 61.2 years. 34 lymphatic vessels were evaluated, 18 with Straight pattern and 16 with Winding pattern. 14 (88%) of the lymphatic vessels with Winding pattern were Ectasia type. The number of lymphatic vessels with Straight patterns was 3 (Normal Type), 7 (Ectasia Type), and 8 (Contracture Type).

Discussion: PAI can observe individual lymphatic vessels in more detail than near-infrared fluorescence (NIRF) lymphography, which is commonly used in the diagnosis of lymphedema. Therefore, when multiple lymphatic vessels are visualized, it is possible to evaluate in advance which lymphatic vessel should be approached.

However, the Straight pattern, which is often observed in healthy individuals, suggests that it is difficult to distinguish the degree of degeneration of lymphatic vessels using photoacoustic imaging alone. This is because lymphatic vessels can be visualized by PAI if they are capable of taking up ICG.

On the other hand, the Winding pattern is relatively rare in healthy individuals and thought to reflect the meandering of lymphatic vessels due to congestion and increased pressure. Thus, in cases where the Winding pattern can be confirmed by PAI, it may be easier to select the dilated functional lymphatic vessels as optimal lymphatic vessels for LVA. However, further research is needed to evaluate the effectiveness of Winding pattern lymphatics in relieving lymphedema symptoms.

Conclusion: PAI confirmation of the Winding pattern increases the likelihood of identifying dilated lymphatic vessels.

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Impact of young and aged adipose-derived stem cells in murine model of cell-assisted lipotransfer

Abstract Presenting Author: Jaewoo Kim MD

Additional Author(s): Ki Yong Hong, Hak Chang MD, PhD

Background: The aging population has been increasing their desire for facial contouring and rejuvenation using fat grafting; however, its efficacy relatively depends on the age. The purpose of the study is to examine the age factor on aging fat grafting

based on the cell-assisted lipotransfer (CAL) model with two types of different transgenic reporter mice.

Methods: Twelve-to-Eighteen-month-old wild type mice were employed as recipients while fat donors were harvested from Twelve-to-Eighteen-month-old green fluorescent protein (GFP) mice. Eight-week-old and Twelve-to-Eighteen-month-old DsRed mice were used to isolate young and aged ASCs, respectively. Recipients received 150μl of fragmented GFP fat mixed with either 50μl of phosphate-buffered saline (PBS), 3×105 aged or young DsRed ASCs in 50μl of PBS for the control, aged ASCs, and young ASCs, respectively (n = 6 per group). The graft retention was measured using micro-computed tomography and weight measurement at 8 weeks.

Results: ASCs derived from aged mice showed enlarged and flat morphology, with higher expressions of p16/INKA and senescence β-galactosidase activities. Young ASCs supplement showed significant better graft retention than that of aged ASCs ($p<0.05$) because young ASCs showed higher the proliferative ratio and angiogenesis, compared to those of aged ASCs ($p<0.05$).

Conclusion: The study highlights young ASCs show better effects on fat graft retention due to higher proliferation rates and angiogenesis. In clinical practice, physicians should take into consideration when conducting fat grafting on the elderly due to poor quality of aged stem cells.

EVALUATION OF HEALING WITH THE USE OF CELLULOSE SUBSTITUTE (EPICITE) COMPARED TO CONVENTIONAL CURE

Abstract Presenting Author: Enrique Chau Ramos MD

Additional Author: Guillermo Wiegering Cecchi MD, MSc, PH.D, FACS

Objective: A study comparing healing between regenerated cellulose skin substitutes (EPICITE) and xenograft was performed in patients with second-degree burns.

Materials and Methods: The report of 120 cases evaluated in a hospital in Peru was presented; between January 2018 and December 2022 in patients between 1 and 60 years of age, without comorbidities, where the evaluation of healing in patients with second-degree burns with hot liquid is recorded. It is a comparative, intervention, analytical, prospective, and longitudinal study. Where the two skin substitutes were used at the same time in all patients, this study has the authorization of each patient through informed consent.

Results: At 90 days an evaluation was made, resulting in better healing with the synthetic cellulose skin substitute (EPICITE) compared to xenograft; having evaluated the healing results with the Vancouver scale (vascularity, pigmentation, flexibility, and height); being the results with synthetic dermal cellulose substitute less redness, greater elasticity that is the most prevalent indicators.
Conclusions: The study showed that the synthetic cellulose skin substitute is an important alternative that favors the quality of healing in burn areas; being more efficient than the xenograft, when being evaluated and compared in its four parameters with the Vancouver International Healing Scale. The result shows that (EPICITE) is an efficient alternative in the treatment of second-degree burns; favoring a better healing process.

keywords: biological dressings, tissue donors, burns.

FUNCTIONALITY OF THE LOWER LIMB WITH BONE EXPOSURE WITH THE USE OF THERAPY WITH NEGATIVE PRESSURE VAC® VS. MEDIAL GULF FLAP

Abstract Presenting Author: Enrique Chau Ramos MD

Additional Author: Guillermo Wiegering Cecchi MD, MSc, PH. D, FACS.

Objective: It was to compare two reconstructive surgery techniques for lower limb injuries with bone exposure and, through it, to differentiate that the VAC® technique (Vacuum Assisted Closure, assisted closure with negative pressure) is an alternative with potential recovery benefit without Significant alterations that could lead to functional compromise.

Materials and methods: Analytical study with a prospective, quantitative, and longitudinal cohort, the therapy was developed in all patients with traumatic injuries of the lower limb with bone exposure of the middle third of the tibia, using the VAC® system and the medial twin flap. used in patients treated at the Stella Maris Clinic during the 2019 period.

Results: It was evidenced that the functional measurement with the FAC (Functional Ambulation Categories) scale was better in patients with the VAC® technique (since 50% have grade V) compared to the flap technique (50% in grade IV)., the differences being statistically significant (p 0.05). It was appreciated that the time of Closure was greater in the VAC® technique, this is due to the process of progressive regeneration until the entire area of the lesion is filled or covered by the VAC system, the intensity of postoperative pain was evidenced between the two techniques, with the presence of moderate pain too intense with the flap technique and mild pain prevailed with the VAC® technique.

Conclusions: The VAC® aspiration system is efficient for bone coverage in traumatic defects of the anterior middle third of the tibia, with effective effects giving better functional results and fewer complications as it is an alternative with potential recovery benefits without alteration of anatomical structures, being an option. useful that acts safely by stimulating the closure of the wound and minimizing the need for surgical treatment.

The Role of Plastic Surgery In The Management Of Combat Injuries Of The Russian-Ukraine war

Abstract Presenting Author: Valentin Yuste Dr.

Introduction: Injuries secondary to combat trauma are a challenge for the Orthopedic Surgeon and Plastic Surgeon due to their high energy, contamination, and involvement of multiple tissues (1). Since May 2022, the Hospital General de la Defensa of Zaragoza has received wounded Ukrainian soldiers with highly complex injuries for medical-surgical care. Due to the nature of these injuries, many of these patients required close collaboration between the Orthopedic Surgery Unit of the Hospital General de la Defensa and the Plastic Surgery Unit of the Hospital Universitario Miguel Servet. In this presentation we want to describe the outcomes in the management of these patients.

Patients and Methods: From the month of May 2022 to the present date, the Hospital General de la Defensa has treated a total of 58 Ukrainian soldiers. Collaboration with plastic surgery was requested for those patients who required soft tissue coverage, reconstruction of bone defects, distal nerve injuries or treatment of neurological pain.

Results: Of the 53 patients treated, 15 required the collaboration of our Plastic Surgery Unit. In addition to minor procedures (skin grafts and pressure sores surgery), by anatomical region, the following procedures were performed:
- 8 lower extremity reconstructions, consisting of 2 free ALT flaps, 2 free LD flaps, 1 fee fibula flap, 1 pedicled ALT flap and 2 Targeted Muscle Reinnervations (TMR).
- 6 upper extremity reconstructions, consisting of 1 free fibula flap, 2 catastrophic hand surgeries, 1 pedicled LD flap, 1 tendon transfer and 1 functional LD flap for biceps reconstruction .
- 1 Facial reconstruction.

Complete survival of all flaps was achieved. Despite this, surgical wound infection was the main complication.

Conclusions: High-energy injuries secondary to war trauma require a high proportion of collaboration with plastic surgery, as well as more complex reconstructive techniques than other types of trauma.

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Complications of Breast Enhancement with Injectable Fillers: A Case Series

Abstract Presenting Author: ILYASAK HUSSIN

Objectives: To create awareness and highlight the complications of injectable fillers to the breast from untrained and unlicensed personnel in breast enhancement and rejuvenation treatment procedures.

Methods: A retrospective review of patients who presented with complications from breast injectable fillers between 2019 and 2021 was conducted at our center. Parameters and variables that were analysed included patients' demographic, details of injectable fillers, radiological findings, operative details, complications, and outcomes.

Results: Six female patients were identified, with a median age of 36 (range 26-46). Five women (83.3%) claimed to have received hyaluronic acid (HA) and another (16.7%) claimed to have received polyacrylamide gel (PAAG) as the filler substance. Two of six patients (33.3%) presented with septic shock, four patients (66.7%) were complicated with Pseudomonas aeruginosa infection and five patients (83.3%) required surgical intervention. Postoperatively, aesthetic improvements were achieved in five out of six patients (83.3%). Twelve months after initial presentation, using Global Aesthetic Improvement Scale (GAIS), four patients (66.7%) rated themselves as improved, one patient (16.7%) rated as very much improved, and one patient (16.7%) experienced no change. Imaging studies of all patients revealed distortion of breast parenchyma with thickening and retraction of overlying skin and diffuse filler granulomas and fibrosis.

Conclusion: A noticeable increasing trend among Malaysian women to receive injectable breast fillers by untrained and unlicensed non-medical personnel have been observed. This growing trend is very concerning as the complications can lead to significant morbidity and even mortality. Complications that have been observed were not only physical but also psychological.

Juvenile Breast Hypertrophy in a 14-year-old Girl: A Case Report.

Abstract Presenting Author: ILYASAK HUSSIN

Objectives: To share our experience in managing a case of juvenile breast hypertrophy in an adolescent. Juvenile breast hypertrophy, also known as virginal hypertrophy is a rare condition affecting young women in early pubertal period. It affects these young adult women both physically and their psychosocial health.

Methods: We report a case of a 14-year-old girl with bilateral breast hypertrophy which has affected her physically and psychologically and proceeded with surgical intervention to alleviate her symptoms. Bilateral reduction mammoplasty was carried out for her. Her condition's progression was observed and monitored preoperatively and 12 months postoperatively.

Result: Our patient underwent bilateral reduction mammoplasty and did not encounter any complications during the intraoperative and postoperative period. Her symptoms both physical and psychological were alleviated significantly after the surgery with very high satisfaction.

Conclusion: Juvenile breast hypertrophy is a rare condition but has significant physical and psychosocial impact. Approaching this condition is a dilemma between symptomatic relief and weighing long term effect of possible subsequent surgeries, breastfeeding and nipple cessation and quality of life as a whole. Multiple consultations regarding indications, goals, risks and possible complications is required with both parents and the patient to achieve optimal outcome. In our case, we believe to have achieved those goals even though a longer period of follow up is still required.

The nipple-tip preserved twin island flaps for the Grade 3 inverted nipple correction.

Abstract Presenting Author: Kento Homma MD

Additional Author(s): Kenichi Homma MD, Yosuke Niimi, Hajime Matsumine MD, PhD, Hiroyuki Sakurai MD, PhD

Background: Surgical treatment of severe inverted and retracted nipples, such as a grade three inverted nipple, is challenging for a plastic surgeon. In addition, it is difficult to pull out the hidden nipple without sacrificing the duct system. Due to the remarkable fibrosis beneath the nipple, retracting forces cause the recurrence of the inversion.

Patients and Operative Technique: Retrospectively, we reviewed 175 patients with 331 Grade 3 inverted nipples from January 2018 to February 2023. The patients ranged in age from 17 to 48 years, with an average age of 25.7 years. 156 of the 175 patients had bilateral inverted nipples. The operations were performed under local anesthesia by a single plastic surgeon Ken-ichi Homma at Sapporo Aesthetic Plastic Surgery. We use fine iris scissors without a stay suture or skin hook to pull out the inverted nipple. Through the stab incision at the edge of the hole of the hidden nipple, the tip of the fine iris scissors elevated the hidden nipple. Careful dissection of the entire circumference of the nipple neck and wide dissection under the subdermal plane of the areola is the key to this surgical technique. We also dissect vertically deep into the mammary gland through the same incision when the elevation of the nipple is insufficient. The two-stab incisions of the hidden nipple at 6 o'clock to 12 o'clock create a tunnel under the top of the nipple, causing less interference with the blood and nerve supply to the nipple. The twin island flaps of Grade 3 inverted nipple were made at both sides of the tunnel, and two stay sutures between 6 o'clock to 12 o'clock holes were performed to elevate the nipple. The newly created nipple was sutured to the donut-shaped nipple protector. For many years, protectors for the nipple have been used to prevent a postoperative recurrence. For example, the injection syringe was commonly used to maintain the postoperative projection; however, the syringe was firm and uncomfortable for the patients. We have been using piping materials made of Styrofoam, commercially available to cover piping. We cut the Styrofoam pipe 10mm thick and gas-sterilized. A donut-shaped Styrofoam is fixed to the nipple with 6-0 nylon thread, and the stitches are removed after two weeks. After removing the stitches, we continued to use the nipple protector for at least three months after the surgery.

Results: No sensory damage and no partial or full necrosis of the nipple occurred. Only two patients out of 175 required reoperations due to the recurrence of the inversion. The nipples were well-shaped, and the patients were satisfied with the results. The protector we developed could be worn without the discomfort seen with syringe protectors and was well adhered.

Conclusion: Our new method of nipple-tip preserved twin island flaps for the Grade 3 inverted nipple correction nipple protector is sufficient and effective. And donut-shaped Styrofoam nipple protectors are cost-effective and well-adhered to the patients.

Botulinum Toxin A Therapy for Glabellar Lines Improves Emotional States: Evaluation of 47 Cases of Asian Subjects Without Mental Disorders

Abstract Presenting Author: HIROMI Hanayama

Purpose: The treatment of facial wrinkle using Botulinum toxin A (BT-A) is very popular cosmetic procedure. Especially, some patients treated glabellar lines with this procedure feel more positive mood. There are some evidences that the improvement of emotional states caused by not only their appearances but also afferent effects derived from proprioception of related muscles. We studied the change of Asian's emotional states without mental disorders before and after this treatment.

Method: Forty-seven Asian participants (42 females and 5males) reported Brief, Momentary Mood Checklist (BMMC) translated Japanese language (J-BMC) before and after 2-3weeks receiving the treatment for glabellar lines with BT-A injections.

Results: The results of the scores of J-BMC reported showed that emotional states of participants were statistically improved after treatment, particularly in the reduce of negative emotions.

Conclusion: While it is clear that our emotions make our facial expressions, the opposite phenomenon that
our facial expressions influence our emotions may be felt strange. However, this idea has been suggested for more than 100 years known as facial feedback hypothesis today. Many studies have showed the evidence that this hypothesis is not invalid, but important concerning the experience of emotions and perceptions. There is increasing evidence that denervation of frown muscles changes the mental state of treated patients, especially with depression. On the other hand, few researches for the subjects without mental problems has clearly showed the change of emotional states. Published studies evaluated the emotional effect of the treatment using with the Beck Depression Inventory (BDI), Rosenberg Self -Esteem Scale (RSES), the Irritability-Depression-Anxiety Scale (IDAS). These measures evaluate much higher dimensions of emotional states and complicated thinking such as esteem, disappointed, empathy, loneliness and so on. In contrast, BMMC evaluates more primitively such as positive valence (happy, joyful, pleased, enjoyment/fun) and negative valence (depressed/blue, unhappy, frustrated, angry/hostile, worried). Some investigations have proposed the hypothesis that the influence of facial expression to the experience of emotion is caused by the afferent signals from proprioception of the frown muscles. A link of corrugator muscle activity and activation of amygdala has been reported with f-MRI images. Additionally, amygdala has been known to be rigorously related to the experience of negative emotions. In view of these results, it may be not controversial that the participants feel more positive (less negative) mood after decreased their frown muscle activity. If the emotional states are attributed to amygdala activity in this experimental environment, the change should be expressed on the primitive emotions such as valence not but on the conformational emotions.

It might be the reason that our results revealed more clearly the reduction of negative emotions in comparison to the research before.

Analysis on the Difference between the Practical Brassiere Size and Real Breast Volume in General Women Population

Abstract Presenting Author: Nara Lee

Additional Author(s): Seok Joon Lee MD, Woo Yeon Han MD, Jin Sup Eom MD, PhD, Eun Key Kim MD, Hyun Ho Han MD, PhD

Background: Brassiere cup size is defined as the difference in chest circumference between the infra-mammary fold and the fullest part of the breast. However, several women are not aware of the correct definition and are prone to wearing incorrectly sized brassieres. In this report, the authors compared the cup size of worn brassieres and the actual measurement.

Methods: This study was a retrospective review of patients who had undergone breast reconstruction operation between May 2020 to June 2021. All patients who visited the plastic surgery clinic for breast reconstruction were enquired about their cup size, and their breast circumferences were measured. The patient's demographic information, ptosis grade, mastectomy specimen weight, measured breast circumference, and known cup size was analyzed.

Results: Overall, 163 women were included. Notably, 92/163 patients (56.4%) were wearing a correctly sized brassiere. Patients were more likely to wear a correctly-sized brassiere as the cup size became smaller. Moreover, patients with A cup breasts tended to wear larger brassieres, while patients with B and C cup breasts tended to wear smaller brassieres than their actual breast cup size.

Conclusion: Approximately one in two women do not know their correct brassiere cup size. Women tend to wear a brassiere of the wrong size as their cup size becomes larger. It is important for surgeons to be aware of their patient's brassiere wearing habit and their perception when a surgery, such as augmentation or reconstruction, is planned.

Characterization of vasospasm in femoral arteries of arteriosclerotic model rats: Induction of vasospasm and negative effect of the vasodilator treatment on the spasm releasing

Abstract Presenting Author: Yuki Matsuoka

Additional Author(s): Michika Fukui MD, Toshihito Mitsui, Masakatsu Hihara, Ryo Karakawa MD, Natsuko Kakudo,

Background: Microsurgery, an important part of plastic surgery, enables the replantation of amputated tissue and the transfer of well-vascularized tissue to defects by vascular anastomosis, resulting in an improved quality of life. Despite advances the techniques and knowledge, vascular anastomosis is often challenging and high risk in cases of arteriosclerosis due to smoking, hypertension, diabetes and renal failure [1,2]. Vasospasm characterized by abnormal vasoconstriction is one of the difficult problems and remains a direct cause of flap loss, but the relationship between vasospasm and arteriosclerosis has not been known. The objective of this study was to establish an animal model of arteriosclerosis for assessing vasospasm, and to clarify the relationship between arteriosclerosis and vasospasm.

Methods: Twelve-week-old male Sprague-Dawley rats were fed a diet supplemented with adenine and vitamin D (adenine/vitD). Body weight was measured weekly. Blood samples and femoral artery histopathology were assessed at 2, 4, and 6 weeks. Structural changes in the femoral artery were also examined by transmission electron microscopy (TEM). Vasospasm was induced by extravascular treatment of epinephrine on the femoral artery and released by the treatment with lidocaine as a vasodilator. During this period, the blood flow was measured with a high-resolution ultrasonic transit-time flowmeter and extravascular diameter was measured with recorded movies.

Results: The rats in adenine/vitD group showed a loss of appetite, hair roughness and a gradual decrease in body weight. In adenine/vitD group, serum levels of blood urea nitrogen and creatinine increased with time, indicating with renal dysfunction and uremia. The adenine/vitD rats also developed hyperphosphatemia and serum ALP levels, which play a crucial role in osteogenesis and calcification, were higher. Histological analyses of the femoral arteries in the treated rats revealed the degeneration of elastic fibers and extensive calcification of the tunica media and intima. TEM analyses revealed that vascular smooth muscle cells were degenerated and osteoblasts developed in many parts of the intima and especially in the tunica media and bone tissue was formed around the osteoblasts, resulting in calcified arteriosclerosis. Blood flow decreased rapidly after epinephrine administration, whereas lidocaine did not change it in adenine/vitD rats. The external diameter decreased slightly after epinephrine administration, whereas lidocaine did not change it in adenine/vitD rats. In short, vasoconstriction was induced in arteriosclerotic arteries, but vasodilatation with an associated increase in blood flow was not observed.

Conclusions: We found that the conventional vasodilator did not release the vasospasm occurred in the femoral arteries of the arteriosclerotic rats. A novel model of rat femoral artery arteriosclerosis by the administration of adenine/vit D diets was established, which can be further applied as a model of arteriosclerotic vasospasm.

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Patient satisfaction with the Scarless Donor Site for Breast Reconstruction by Endoscopy-assisted Extended Latissimus Dorsi Flap plus Lipofilling

Abstract Presenting Author: Shinsuke Akita MD, PhD

Additional Author: Nobuyuki Mitsukawa MD, PhD

Background: Breast reconstruction using endoscopy-assisted latissimus dorsi (LD) flap leaves no scar on the back; however, the small amount of tissue obtained makes this procedure less practical1－4. We proposed a new technique of endoscopy-assisted extended LD (eeLD) flap plus lipofilling, which can secure a large breast volume. In this study, patient satisfaction after eeLD flap was compared with that after conventional LD flap.

Methods: The lateral chest adipose tissue supplied by the septocutaneous perforators, and the serratus anterior branch of thoracodorsal artery was elevated as one unit along with the LD flap with the goal of obtaining maximum volume only through the mastectomy scar and two small holes for the trocar port of the endoscopic surgery. We injected abdominal fat into the eeLD flap, mastectomy flap, and pectoralis major muscle with the aim of achieving a similar shape that was approximately 20% larger than that of the healthy side. When the reconstructed breast's volume reduction plateaued and the volume of this breast was insufficient, additional lipofilling was planned at the patient's desired. After >6 months following the final operation, we conducted a patient-oriented evaluation using the BREAST-Q reconstruction module version 2.0

Results: Overall, 15 breasts of 14 patients who underwent breast reconstruction using an eeLD flap exhibited no serious complications. On average, 281.9 ± 32.4 g of flap and 74.7 ± 19.4 ml of lipofilling were used. At 8 weeks postoperatively, the volume of reconstructed breasts measured using Vectra decreased to 69.5% ± 7.5% and then reached a plateau, assuming that the volume at 1 week postoperatively was 100%. Seven patients needed a subsequent session of lipofilling to acquire adequate breast volume and projection. The transformed score for the BREAST-Q item "Satisfaction with breast" after a series of eeLD flap plus lipofilling procedures was 74.6 ± 12.5. The

BREAST-Q scores on the donor site of patients who underwent eeLD flap (study group) were compared with those of the 10 breasts in the control group who underwent the conventional LD musculocutaneous flap. Compared with the control group, the study group had significantly higher scores for the items "Satisfaction with breast" (82.8 ± 9.2 vs. 62.6 ± 6.3, P < 0.0001) and "Physical well-being: back and shoulder" (85.3 ± 8.6 vs. 62.3 ± 6.3, P < 0.0001).

Conclusion: According to the results of the retrospective comparison of the BREAST-Q scores in our case series, compared with the conventional LD musculocutaneous flap, eeLD flap contributed to the increase in donor site satisfaction of the patients.

The External Pudendal Artery Perforator Flap for Vulvovaginal and Penile Reconstruction: Inguinal Extension for Thinner Flap

Abstract Presenting Author: Hyung Min Hahn

Additional Author(s): Myong chul Park, Il Jae Lee, Hyoseob Lim

Objective: Reconstruction of vulvovaginal and penile defects following cancer ablation is a surgical challenge. Recovering the shape, volume, and function without complication is the essential part of the reconstruction of the area. Vulvovaginal and penile reconstruction with a newly designed fasciocutaneous flap based on the superficial external pudendal artery perforators was evaluated.

Methods: A retrospective chart review identified 39 flaps in 27 patients who underwent vulvovaginal and penile reconstruction using external pudendal artery perforator flaps after oncologic surgery. Their mean age was 62 ± 16 years (Range: 19-86). The average body mass index was 23.1 ± 3.7 (Range: 16.8-27.0). Fifteen of the 27 patients underwent unilateral flap reconstruction, and 12 of them underwent bilateral reconstructions. The flap was designed based on the location of superficial external pudendal artery perforators. The design was extended along the inguinal crease. Clinical data including patient demographics, risk factors, details of microsurgical procedures, and flap outcomes were collected.

Results: All flaps survived with a 100% success rate. All the flap donor sites were closed primarily. The mean width of the pedicled flaps was 5.5 cm, and the mean length was 11.1 cm. The flap thickness estimated on inguinal region was 0.8 ± 0.6 cm. Four patients developed small wounds that required debridement and flap revision after the reconstruction. Partial distal flap necrosis occurred in three flaps in two patients, which was healed spontaneously. All of the patients were satisfied with the cosmetic and functional results.

Conclusions: In addition to its reliable perforators, newly designed superficial external pudendal artery perforator flap extending to inguinal crease could be a reasonable surgical option with thin flap and a better orientated scar for vulvovaginal reconstruction.

Use of Diced Acellular Dermal Matrix (ADM) combined with Sheet-ADM for Oncoplastic Breast-Conserving Surgery: A Novel Technique to Achieve a Natural Breast Contour

Abstract Presenting Author: Byeongseok Kim MD

Additional Author: Yoonsoo Kim MD

Purpose: Oncoplastic breast-conserving surgery (BCS) is an effective approach for the treatment of small breast cancer. However, achieving a natural breast contour can be challenging in Asian women, who tend to have smaller breast volume but relatively larger tumors [1]. There have been studies that tried volume replacement using only diced acellular dermal matrix (ADM) [2]. In our experience, pieces of diced-ADM were sometimes touched elsewhere, so we tried sealing the defect with a sheet-ADM so that the diced-ADM stays in place. It is possible to implement a natural breast contour without bulging or depression deformity. The aim of this study is to compare aesthetic outcomes and complications between diced-ADM alone and the additional use of a sheet-ADM.

Methods: We performed a retrospective analysis of patients who underwent oncoplastic BCS from June 2020 to June 2022. Diced-MegaDerm® (L&C Bio, Seoul, Korea) and 1.8 mm thick and 3x4 cm2 in size BellaCell-HD® (Hans Biomed, Seoul, Korea) were used to fill the defect. First, the resected breast tissue was weighed, and the required volume of ADM was determined. The Jackson–Pratt drain was inserted and diced-ADM was filled to the defect. It was covered with a sheet-ADM, and the remaining glandular tissue and a sheet-ADM were sutured. The patient's baseline characteristics and operative data were analyzed. Satisfaction and aesthetic outcomes were assessed using the BREAST-Q survey and Validated Breast Aesthetic Scale.

Results: A total of 168 patients were enrolled in this study. 53 in the diced-ADM and a sheet-ADM group and 115 in the diced-ADM only group. The mean weight of resected breast tissue was 18.1 g with sheet-ADM and 17.3 g without, and the mean volume of used diced-ADM was 18.6 g with sheet-ADM and 17.7 g without. None of the complications were statistically significant in either group: seroma was 9.4% with sheet-ADM and 9.7% without, red breast syndrome was 1.9% and 4.3%, hematoma was not observed in either group, and infection was 0% and 2.7%. Among the aesthetic problems, depression deformity was 1.9% in sheet-ADM and 5.2% without, and bulging deformity was 0% and 2.7%, respectively, which were not statistically significant. However, the hardness sensation was not observed with sheet-ADM but was identified

8.7% in the without group, which was statistically significant (p=0.032). In aesthetic outcomes, mean BREAST-Q scores were higher in sheet-ADM, 85.7 and 82.4 in the two groups respectively, which was statistically significant (p=0.031). The Validated Breast Aesthetic Scale was also higher in sheet-ADM, but not statistically significant.

Conclusion: The combination of diced and sheet ADM avoids the disadvantages of using diced ADM alone, such as uneven surface texture and small ADM pieces falling into the space between the glandular flap and the pectoralis major muscle [2, 3]. The aesthetic results of using both diced and sheet ADM were statistically better than using diced ADM alone, while the incidence of complications was similar between the two groups. Our results suggest that this technique may be a useful tool for plastic surgeons to achieve excellent aesthetic results in oncoplastic BCS.

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Collagen Type I/III Ratio as a Predictor of Scar Formation Undergoing Immediate Reconstruction with the Round Block Technique after Breast-Conserving Surgery: A Quantitative Analysis

Abstract Presenting Author: Byeongseok Kim MD

Additional Author: Yoonsoo Kim MD

Purpose: Scarring is a common concern among patients undergoing breast-conserving surgery, as it can significantly affect their quality of life and self-esteem [1,2]. The purpose of this study was to investigate the correlation between collagen type I/III ratio and scarring in patients who underwent immediate reconstruction with the round block technique (RBT) after breast-conserving surgery. The aim was to gain insight into the underlying mechanisms that contribute to scarring and to identify potential interventions to improve scar appearance.

Methods: Seventy-eight patients who underwent breast-conserving surgery and immediate reconstruction with the RBT technique were included in this study. The collagen type I/III ratio was measured by a quantitative method using digital scanning and image analysis [3,4]. Scarring was evaluated by two independent plastic surgeons using the Vancouver Scar Scale (VSS). Pearson's correlation analysis and multiple linear regression analysis were performed to identify factors influencing scar formation.

Results: The mean age of the patients was 48.77±9.40 years, and the mean BMI was 23.76±3.92 kg/m2. The mean weight of resected breast tissue was 25.79±11.98 g. Ductal carcinoma in situ (DCIS) was the most common type of cancer found in 40 patients (51.3%). The collagen type I content was 31.63±18.22 μg/g, the collagen type III content was 11.41±6.27 μg/g, and the collagen type I/III ratio was 3.85±3.72. The mean VSS scores were 1.92±2.01 and 1.79±1.89, respectively, as evaluated by two independent plastic surgeons. Pearson's correlation analysis showed that collagen type I/III ratio had a significant positive correlation with collagen type I content and a significant negative correlation with collagen type III content. VSS showed a significant positive correlation with collagen type I content and collagen type I/III ratio, and a significant negative correlation with collagen type III content. Multiple linear regression analysis showed that collagen type I/III ratio had a significant positive effect on VSS, whereas collagen type I and collagen type III had no significant effect.

Conclusion: This study suggests that the collagen type I/III ratio is related to the degree of scarring in patients undergoing breast-conserving surgery and immediate reconstruction with the RBT technique. The lower the collagen type I/III ratio, the better the cosmetic outcome of the scar. The use of multiple linear regression analysis allowed a better understanding of the complex relationships between different variables affecting scar formation. These findings may have implications for the development of interventions that can improve the appearance of scars in patients and may lead to the development of patient-specific scar prediction models based on genetic testing. Further research is needed to validate these findings and to determine the long-term effects of collagen type I/III ratio on scar formation. In conclusion, this study provides valuable insights into the relationship between collagen type I/III ratio and scar formation, which may help clinicians to predict the degree of scarring and improve patient outcomes after breast-conserving surgery and immediate reconstruction using the RBT technique.

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Usefulness of transconjuntival approach with paracanthal extension to the inferior orbital wall fracture combined with infraorbital rim.

Abstract Presenting Author: Seokoo Lee

Additional Author(s): Eunsoo Park MD, Young jin Kim, Han Gyu Cha

Background: Transconjuntival approach, which is common approach of inferior orbital wall fracture, has been used for both cosmetic and reconstructive purpose. But it has limitation with reduced exposure of all underlying anatomic structures compared with subciliary approach and risk of injury of lacrimal duct. So, we used transconjuntival incision with paracanthal extension. This can be used for patient with inferior orbital wall fracture combined infraorbital rim fracture.

Material and Method: Between May of 2019 and May of 2023, a total 24 restoration of orbital wall with paracanthal extension in 5 patients. Patient demographics, indications and complications were reviewed retrospectively.
Before operation, Patient have an ophthalmologic exam. Under general anesthesia, we design lower transconjunctival incision. And design additional about 1cm sized paracanthal extension incision line on the lateral lower eyelid. Then, exposure inferior orbital wall and infraorbital rim. Direct reduction of infraorbital rim and restoration of continuity of inferior orbital wall with plate is done.

Result: After followed up for 3 months, reduction and fixation of fracture is well done. Patients have no symptoms of lacrimal duct injury. Furthermore, no significant external skin incision scar. There's no major complication that further surgery is needed

Conclusion: This approach has an advantage of wide surgical field due to paracanthal incision, which provide relief of tension on lower canthus. This relief makes possible to surgeon to lift eyelid vertical more, the visual fields get wider, also makes doesn't have to track eyelid to medial side, which potentially induce injury of lacrimal duct. The lateral paracanthal incision scars were inconspicuous, and none of the patients complained about the relatively well-hidden incision scar.

A novel approach for wound treatment using dried cultured epidermal allograft: basic research to clinical trial

Abstract Presenting Author: **Michiharu Sakamoto MD**

Additional Author(s): **Takashi Nakano, Itaru Tsuge, Hiroki Yamanaka, Eiichi Sawaragi, Naoki Morimoto**

Background: Autologous cultured epidermis (CE) is successfully used in burn care, but it requires a manufacturing time of three weeks and is very expensive owing to its custommade nature of treatment. In contrast, dried allogeneic CE can be stored for long period at room temperature and immediately used when needed. Therefore, it is supposed to be a promising modality for burn wound treatment. We performed basic research and a prospective clinical trial to elucidate its safety and efficacy.

Methods: Dried CE was manufactured using donor keratinocytes obtained from excess surgical skin. We investigated its morphological and physical properties and wound-healing effects using a murine skin defect model and a swine donor site model and compared them with those of cryopreserved CE. In the clinical trial, dried CEs were applied to skin defects that were at least 3 cm in length and less than 10 % of the body surface area of the patients. The patients were observed for 14 days after CE application. The primary endpoint was the incidence of adverse events, and the secondary endpoint was the percentage of wound healed since baseline, on days 7 and 14. Furthermore, as a stratified analysis, the percentage of wound healed, specified as deep dermal burns, was calculated.

Results: Hematoxylin–eosin staining, immunostaining for basement membrane, and electron microscopy revealed that the morphologies and mechanical properties such as the breaking strength, modulus of elasticity, and water permeability of dried CE and cryopreserved CE were comparable. Furthermore, the levels of various active cytokines and chemokines in dried CE were comparable with those in cryopreserved CE. Dried CE applied to skin defect in diabetic mice and donor site in miniature pig significantly accelerated the epithelialization, similar to that observed for cryopreserved CE. In clinical study, six patients (five burns and one skin ulcer after necrotizing fasciitis) enrolled in the study. As a serious adverse event, a local infection was observed in one patient, which resolved by debridement and conventional skin grafting. Other adverse events that were potentially related to this treatment included two cases of skin erosion, and one case of systemic fever. No unresolved adverse events remained at the end of the study period. The percentage of wound healed was 73.4 ± 19.2 % on Day 7, and 92.2 ± 11.8 % on Day 14. When the targeted disease was restricted to deep dermal burns, the percentage of wound healed was 69.9 ± 28.9 % on Day 7 and 90.5 ± 13.2 % on Day 14.

Conclusion: Dried CE had similar morphological and physical properties and wound-healing effects compared with those of cryopreserved CE and can be a physiological and versatile wound-dressing. Treatment with dried CE was safely performed without any unresolved severe adverse effects. Dried CE is a new and promising modality for skin defect treatment, such as burns and ulcers, and is expected to compensate for the disadvantages of autologous CE.

A Retrospective Review of Primary Cutaneous Angiosarcoma of the Head and Neck

Abstract Presenting Author: Eve Kaar

Additional Author(s): Dr. Eve Gumbrielle Kaar, Mr. Barry O'Sullivan, Mr. Fiachra Martin, Mr. Jamie Smith, Dr. Izlinda Abdul Jalil

Background: Primary Cutaneous Angiosarcoma (PCAS) is a highly aggressive malignancy that arises from vascular and/ or lymphatic endothelial cells. Accounting for less than 2% of soft tissue sarcomas, it is an extremely rare disease with an unfavourable prognosis. There is no consensus on the standard of treatment for this patient cohort: while surgical resection remains the preferred initial treatment, it is often found that patients with a large degree of multifocality are not amenable to surgical resection. Whilst there is a lot of guidance and advice regarding ideal margins in other forms of sarcoma there are neither specific European (1) nor United States (2) guidelines surrounding surgical margins for this disease. Radiotherapy, Chemotherapy and Immunotherapy in a primary or adjuvant capacity also represent treatment modalities utilised for these patients.

Methods: This is a retrospective analysis of all patients diagnosed with PCAS of the head and neck (PCASHN) in an academic teaching hospital skin cancer centre over 12 years (2011-2022). Data was collected from patient medical records and the electronic histopathology system. Data on demographics, treatment modalities, histopathology and survival were analysed. This data set continues to grow as data from other Irish centres is aggregated and included, with the end goal being to provide a comprehensive and accurate picture of this condition in Ireland.

Results: A total of nine patients were identified, in a single centre, over the 12-year period. The majority were male (89%) and elderly (median age 77) with the scalp being the most common location at presentation (67%). Four patients (45%) presented with localized disease, three (33%) with multifocal disease (involving the parotid and regional lymph nodes) and two (22%) with extensive metastases. There was a heterogeneity in management of these patients. Eight (89%) patients underwent primary wide local excision (WLE). Two patients went on to have further WLE's for locally recurrent

disease at 24 and 36 weeks post primary surgery respectively, despite clear margins on primary surgery. One patient had extensive disease which was not amenable to primary surgical resection. Only five patients (56%) had adjuvant radiation treatment. In this small cohort of patients, there was variability in the surgical margin utilized (ranges from 2 to 5cm, median 3cm). Survival was poor with a range, to date, of 2-28 months and an average of 18.8 months. One patient, with multi-recurrent disease, received multimodal treatment including surgery and chemotherapy and remained in remission at 28 months follow up.

Conclusion: PCASHN is an aggressive tumour with a poor prognosis. To date I have found that, even with curative-intent multimodality treatment, patient survival is limited. The literature suggests there is an advancing of the logarithm utilised in managing these patients and an ever increasing role for Medical-Oncology and systemic treatment. Whilst we do have a national sarcoma centre in Ireland, unfortunately not all patients with Angiosarcoma are treated within this centre for a myriad of reasons (eg. personal, geographical, practical). Admittedly, our data to date is limited due to rare nature of disease and our resulting small sample size. Nevertheless, it suggests that a multidisciplinary team approach and the formation of a localised national treatment centre, specialising in the care of patients with this rare malignancy, will be important to improve survival. Undeniably, further research on tumour biology and continued efforts to develop effective treatment are needed moving forwards.

Refinement of the Wing Base with Personal Technique

Abstract Presenting Author: Jose Duran MD

Summary: The following work presents a technique for refining the wing base using punch, a procedure that I have been carrying out since 2018 and which was published in Advances in Plastic & Reconstructive Surgery [1]. This technique is performed on its own or as a complement to a rhinoplasty procedure or a rhino-modulation procedure with thread [2].

Introduction: Regarding the narrowing of the alar base, there are different techniques that can be used in specific cases. Some of these techniques are described in chapter 9 of "Rhinoplasty" by Ortiz Monasterio [3].

Indications: Wide wing base

Material and Method: -- Punch 3, 3.5, 4 or 5 mm
-- PDS 4-0
-- Local anesthesia with 2% xylocaine with epinephrine

Surgical Technique: Local anesthesia consisting of 2% xylocaine with epinephrine is used in all cases. Using a 30g needle, the anesthesia is inserted into the periphery of the area where the wing tissue will be resected along with the punch. Depending on the punch used (3, 3.5, 4 or 5mm), it is possible to obtain a compact 8mm deep tissue cylinder of variable diameter without touching the nasal vestibule or the skin of the alar margin. This prevents wound dehiscence and ensures minimal scarring and symmetrical alar margins (Figure 1).

Once the dermo-fat cylinders, which can be used to augment the previously de-epidermalised radix, are extracted, closure of the wound is performed. Closure can be done with a single stitch with 5–0 nylon, which can be removed after 72 hours. Alternatively, on a transfixing point of the alar base with PDS 3-0 or 4-0, you can make two punctate incisions with blade No. 11 in the wing margin. Next, using a straight needle loaded with PDS, a transfixing stitch is made by closing the spaces caused created by the punch. If necessary, additional individual stitches can be made on each wing edge, without tension, using 5-0 nylon.

This technique can be performed as a unique look, or a complement to a rhinoplasty procedure, or with a rhino-modulation procedure with thread. When the alar rim conceals the columella, the resection with punch of the alar base can be combined with elliptical resection of the alar rim, as suggested by Millard [4].

Conclusion: - Symmetric resection of the alar base
- Prevention of dehiscence
- Minimal scarring
- Simple technique with a low learning curve

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Success rate of buccal fat pad removal in previously injection lipolysis patients

Abstract Presenting Author: Pornthep Sirimahachaiyakul MD

Additional Author(s): Amarit Tansawet, Saran Wannachamras

Background: Buccal fat pad removal is an effective and established operation to reduce chubbiness of cheek and slimming lower face. Actually it's almost 100% to remove the buccal fat pad. However, it's sometimes difficult to remove the buccal fat pad because of fibrosis in some patients who have had history of previously injection lipolysis of cheeks as off-label drug use from other practitioners. This study aimed to study the success rate of buccal fat pad removal in previously injection lipolysis patients.

Methods: From September 2016 to February 2020, at a private clinic, 103 patients were enrolled but 3 patients were excluded. So the total were 100 patients. The patients were divided into 2 groups; 1) the group of previously injection lipolysis of cheeks and 2) the control group (no history of injection lipolysis). The primary outcome was the success rate of buccal fat pad removal in previously injection lipolysis patients. The secondary outcome was the rate of complications of buccal fat pad removal.

Results: Fourteen men and 86 women were enrolled. The mean age was 27.49 ± 6.26 years. In the group of previously injection lipolysis, there were 61 patients dividing into 9 men and 52 women. In the control group, there were 39 patients dividing into 5 men and 34 women. Time to follow-up was 7.41 months. The average weight of buccal fat pad was 2.63 ± 1.01 and 2.67 ± 0.81 grams in the group of previously injection lipolysis and the control group respectively ($p = 0.761$). Only in the group of previously injection lipolysis, there were 5 patients whose the buccal fat pad could not be removed successfully (3 for totally and 2 for partially removal). The success rate of buccal fat pad removal in the group of previously injection lipolysis and control group were 91.8% and 100% respectively ($p = 0.153$). The complications such as hematoma, prolonged cheek swelling, sagging cheek, and wound dehiscence just occurred in 8 cheeks from 122 cheeks only in the group of previously injection lipolysis (6.6%), but did not occur in 78 cheeks of the control group ($p = 0.007$).

Conclusions: Buccal fat pad removal as an aesthetic improvement of lower face has been established. The success rate of buccal fat pad removal was decreased and the rate of complications was increased significantly in the patients of previously injection lipolysis of cheeks. This operation should be proceeded with caution in this group of patients.

A Tale of the Frail' A Longitudinal Study of Hand Fractures, Frailty and the F.I.T. Intervention.

Abstract Presenting Author: Julie Duggan

Additional Author: Roisin Dolan MD

Introduction: Frailty is a clinically recognisable state of increased vulnerability and decline across multiple physiological systems that increases the risk of adverse health outcomes in the elderly population. The primary aim of this study was to assess the prevalence of frailty in patients over sixty-five years presenting for management of closed hand fractures. Our secondary aims were to assess factors associated with higher clinical frailty scores and whether clinical frailty scores were predictive of future fragility fractures. To our knowledge, this is the first study to assess if hand fractures in pre-frail and frail older adults signify a risk for future fragility fractures and the development of degenerative bone disease.

Methods: This longitudinal cohort study included consecutively referred patients over the age of 65 years with closed metacarpal or phalangeal hand fractures. Patients who presented to the Plastic & Reconstructive Surgery Department at St. Vincent's University Hospital (SVUH) Dublin between January 2019 and May 2022, were included. Data was collected from medical notes, radiographic images and hand therapy notes. Clinical Frailty Scores (CFS) were calculated for each patient at the time of their fracture using the Rockwood Clinical Frailty Score (Rockwood et al 2005). All patients were followed up at a second timepoint, at least 1 year post injury, to assess for evidence of further fragility fractures and of degenerative bone disease. All descriptive statistics were analysed using 2-tail T-test using SPSS. Logistic regression analysis was used to identify factors predictive of frailty and future fragility fractures.

Results: Seventy-two patients met the inclusion criteria. The mean age was 76.11 (SD 7.81). Thirty-one (43%) were considered frail at the time of their first fracture (CFS ≥4). Follow-up times ranged from 12 to 51 months from the primary hand fracture. During the study timeframe, 25% (n=18) of patients went on to have future fractures, such as rib, hip and osteoporotic compression vertebral fractures. Of those who had further fractures, 89% (n=16) were considered frail or pre-frail at the time of the first fracture. C.F.S. classes were assessed as predictors of recurrent fracture, with Non-Frail as the reference group. The Frail class were 4 times more likely to have further fractures than the non-frail group. ($p = 0.033$). Regarding mechanism of injury, 71.4% of the primary hand fractures were caused by low velocity falls. 54% of fractures from low velocity falls were in frail or vulnerable cohort ($p=0.0051$). Low velocity falls were able to predict frailty in our cohort with a sensitivity of 87% (95%CI 70.17% - 96.37%). Frailty score was also impacted by cardiovascular disease ($p = 0.0244$) and diabetes ($p = 0.0244$) in our cohort.

Conclusions: To our knowledge, this is the first study to identify closed hand fractures as primary fractures in a frail cohort, that are predictive of progression of clinical frailty and future fractures. These low velocity falls causing hand fractures justify a frailty

assessment and these hand fractures represent a significant opportunity to intervene in those who are considered pre-frail or frail clinically. Thus, we have proposed the F.I.T. Intervention Protocol (The Frailty Intervention in Trauma). This protocol allows early, dual hospital and community input, allowing the initiation of an intervention to delay or even reverse frailty, avoid future fractures, avoid significant disability and improve quality of life in this at-risk cohort of patients. Overall, this intervention will reduce cost for the H.S.E. and align with national frameworks of frailty.

Perforator-Based Flaps for the Microvascular Reconstruction in Electrical Burn Injuries

Abstract Presenting Author: Pedro Ciuda

Additional Author(s): Guillermo Wiegering Cecchi MD, MSc, PH. D, FACS, Juan Ludeña

Background: High-voltage electrical injuries usually cause extensive and devastating damages. With advances in perforator flaps microsurgery techniques, a large skin island can survive on a single vascular pedicle. The aim of this study is to evaluate the aesthetic and functional outcomes following reconstruction in electrical burn injuries using perforator-based flaps.

Methods: From 2018 to 2021, 32 patients with high-voltage electrical injuries who required microvascular reconstruction were recruited. Patients' demographic data, defect location, hospital stay, flap used, defect and flap size, timing of reconstruction, and complications, were analyzed.

Results: After primary or secondary debridement, reconstruction was performed using free anterolateral thigh (15), thoracodorsal artery perforator (7), SCIP (3) and PAP (7) flaps on hand, head and neck and the upper-lower limb regions.

Conclusions: Reconstruction with perforator flaps were an effective and reliable opction for the management of severe high-voltage electrical injuries. Patients were satisfied with the cosmetic appearance

Comparison Between Cross Leg Pedicle Flap, Cross Leg Free Flap and Cross Leg Vascular Cable Bridge Flap for Lower Extremity Limb Salvage

Abstract Presenting Author: Pedro Ciudad MD

Additional Author(s): Guillermo Wiegering Cecchi MD, MSc, PH.D, FACS, Juan Ludeña

Background: When no suitable ipsilateral limb recipient vessels are available, the use of cross leg flaps can be a good option for limb salvage. In these cases, the contralateral leg can be the source of recipient vessels to help reconstruct the injured limb. 1,2 The goal of our study is to describe our experience and compare these different types of flaps during lower limb salvage.

Methods: All patients that underwent lower extremity reconstruction using the pedicle cross leg (PCL), free cross leg (FCL) and the free cable bridge (FCB) flaps were analyzed. Demographics, etiology of the injury, flap used, donor site vessels, defect size, operating room time, time of pedicle division, time of cross leg fixation and complications were compared and analyzed.

Results: A total of 60 patients were included. Etiology of the defect were trauma (78%), cancer resection (20%), other (2%). The number of PCL, FCL and FCB flaps was (15, 37, 8 respectively). The most common donor site vessel was the posterior tibial artery and vein. The average size of the defects covered was (22 cm). The complications encountered during this period were hematoma (2), prolonged pain (21), total flap loss (2), return to the operating room (4) and infection (8).

Conclusions: The concept of contralateral flaps for lower limb salvage reconstruction, allows transfer of large flaps to cover complex defects when ipsilateral extremity vessels are not available. The use of free cable flaps allows covering more extensive and complex defects as compared with pedicle cross leg flaps.

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Pelvic-perineal reconstruction with the Bipedicle combined transverse upper gracilis and profound artery perforator (TUG-PAP) flap

Abstract Presenting Author: Pedro Ciudad MD

Additional Author: Guillermo Wiegering Cecchi MD, MSc, PH. D, FACS.

INTRODUCTION: The transverse upper gracilis (TUG) and the profunda artery perforator (PAP) flaps have been described for breast and perineal reconstruction. 1The

abdomen is considered one of the primary donor sites to reconstruct these areas. However, when abdominal tissue is not available, other donor sites such as the thighs should be considered. The aim of this study is to describe our experience using the combined TUGPAP flap, for pelvic-perineal reconstruction.

METHODS: All patients who required pelvic-perineum reconstruction using the TUGPAP were recorded. All TUGPAP flaps were based on two pedicles: the ascending branch of the medial circumflex femoral artery (TUG) component, and the profunda artery perforator itself for the (PAP) component. Demographics, etiology of reconstruction, flap harvest time and complications were analyzed.

RESULTS: A total of 8 combined pedicle flaps were performed for perineum reconstruction. The mean size of the harvested skin paddle was 28.6x8cm2. The average pedicle length for the TUG flap was 7 cm and for the PAP flap was 9 cm. The flap survival rate was 100% and no partial flap loss was reported. No major complications were seen. There was one case of persistent donor site seroma, which was managed conservatively.
CONCLUSION: When abdominal tissue is not available, the TUGPAP flap is an alternative flap for extensive pelvic-perineal defects. The good pedicle length, large skin paddle and the versatility of design, makes this flap a good alternative.

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Current Practice of Patient Selection for Sentinel Lymph Node Biopsy in Melanoma; Are We Doing Too Much?

Abstract Presenting Author: Shane Cullen MD

Introduction: Melanoma is the fifth most common invasive cancer in Ireland. The majority of cases are treated in early stages with surgical excision remaining the mainstay of treatment.1 Sentinel Lymph Node Biopsy (SLNB) is critical in accurately staging melanoma according to the AJCC 8th edition.2 All though it is minimally invasive, this procedure has significant complications, including seroma and wound infections3

Many current practices rely on Breslow thickness or Ulceration to determine whether a

sentinel node biopsy is indicated. The NCCN guidelines state that if the risk of SLNB positivity is between 5% and 10% then the risks and benefits should be discussed with the patient. If the risk is >10% then SLNB should be offered to each patient.4

There are many predictor tools available to calculate a patient's individual risk of positivity based on patient demographics and melanoma characteristics.5 This study aims to critically analyse current practice of patient selection for sentinel node biopsies by retrospectively analysing their risk of positivity using current prediction tools.

Methods: All melanoma patients who underwent SLNB between August 1st 2022 – February 28th 2023 were identified. Each patient was discussed at the Melanoma MDT meeting and SLNB was recommended. Data regarding their melanoma characteristics, sentinel node characteristics and treatment details were collected.

The melanoma characteristics of each patient were entered into The Melanoma Institute of Australia's Sentinel Node Metastasis Risk Prediction Tool. By using this tool, the predicted chance of having a positive SLNB was obtained.

Surgical details, including complications and further interventions was collected, along with details of adjuvant treatment, investigations and surveillance. Outcomes such as recurrence and mortality rates were all calculated.

Results: 109 patients with a diagnosis of melanoma underwent sentinel lymph node biopsy during this time frame. The average age was 63 years old. The average Breslow thickness was 2.16mm. 76% of cases were superficial spreading and ulceration was present in 19%. Mitoses ranged from 0–18/mm2 and six cases showed lymphovascular invasion.

The predicted tool showed that there was <10% risk of positivity in 48% of cases and <5% risk in 17% of cases, with a predictive range of 3% - 76%. The average prediction risk for sentinel node positivity was 14.1%. The actual rate of positive sentinel nodes was 14.8%. There were no positive cases in those with a less than 10% risk according to the prediction tool.

The overall complication rate for sentinel node biopsy was 27%. The main complications included seroma (13%), wound infections (8%) and wound dehiscence (4%). There was one haematoma and one abscess, both patients showed <10% risk of positivity.

Conclusion: This study highlights a controversial issue in current melanoma management. The current practice from the Melanoma MDT mainly relies on Breslow thickness and ulceration in the decision to recommend SLNB. Approximately half of all SLNB cases currently being performed have less than 10% chance of positivity

according to the risk prediction tools. This study highlights the risks associated with SLNB and the associated complications t.hat affect all groups of patients.

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Initial Experiences with NovoSorb® Biodegradable Temporising Matrix in Scalp Reconstruction and Radiotherapy

Abstract Presenting Author: Stephen Keelan

Additional Author(s): Ciaran Hurley MD Eamon Beausang Claragh Healy MD

Introduction: Recurrent scalp skin cancers remain a challenging reconstructive paradigm. Conventional reconstructive options include a combination of skin grafts, local flaps, and eventually free flaps. Reconstruction becomes even more challenging in the setting of scalp radiotherapy. NovoSorb® Biodegradable Temporizing Matrix (BTM) is a fully synthetic dermal matrix designed using biodegradable polyurethane foam. It has been piloted in various etiologies, including burns, necrotizing fasciitis, trauma, and pressure sores. Early results demonstrate its ability to cover exposed bone and periosteum with promising results, low rates of infection, and pliable wound coverage. Although using BTM is effective in scalp reconstruction, radiotherapy may impact the integration of the BTM and subsequent skin graft take. We describe our initial experiences and results of using BTM in scalp reconstruction.

Methods: A retrospective review of all scalp reconstructions was performed in a single teaching hospital in Dublin, Ireland, between 2020 and 2023. Patient demographics, defect etiology, size, wound bed, the timing of BTM to skin grafting, BTM integration, radiotherapy, and complications were recorded.

Results: A total of 8 scalps were reconstructed over the study period for skin malignancy. Most were defects secondary to cutaneous melanoma (n=3) and squamous cell carcinoma (n=3). The mean size of the defect was 86mm in length (range = 26-140), (range = 4-113), and 59mm in width. In total, 63% (n=5) of wound beds were on exposed bone, and 27% (n=3) were pericranium. The mean time from BTM inset to SSG was 68 days (range=38-85). The mean SSG take at one month was 96%. There was no evidence of graft loss or infection. Two scalps with BTM received postoperative radiotherapy, which was well tolerated.

Conclusion: This is the largest case series of scalp reconstruction using BTM published to date. It is the first to demonstrate consecutive safe, effective, and durable results after radiotherapy. BTM was found to provide a suitable scaffold for the growth of new tissue, allowing for the eventual integration of the graft with the surrounding scalp tissue. BTM may be an essential adjunct in scalp reconstruction. In our experience, it is most useful in those individuals for whom we anticipate multiple surgeries; clinically, this tends to be the middle age to older gentlemen with male pattern baldness, Fitzpatrick skin type 1, and significantly sun-damaged scalp.

Prophylactic treatment of adipose tissue-derived products to prevent irradiated skin disorder.

Abstract Presenting Author: Yoshihiro Sowa MD, PhD

Additional Author: Kotaro Yoshimura MD

Introduction: Radiation therapy is now a mainstay treatment for malignancies, but it can induce deterministic adverse effects in surrounding healthy tissues, including atrophy, fibrosis, ischemia, and impaired wound healing. In this exploratory study, we aimed to investigate whether a prophylactic administration of products containing adipose tissue-derived stem cells immediately after radiotherapy could prevent the development of long-term functional disorders in irradiated tissues.

Methods: A total irradiation dose of 40 Gy (10 Gy, four times weekly) was delivered to the dorsal skin of nude mice. Subsequently, a prophylactic treatment with vehicle, fat tissue, stromal vascular fraction (SVF), or micronized cellular adipose matrix (MCAM) was subcutaneously injected into the irradiated area. Six months after these prophylactic treatments, a cutaneous punch wound was created to evaluate histological

changes and wound healing.

Results: Histological assessments demonstrated dermal thickening, atrophy, and increased collagen deposits in the subcutaneous fatty layer 6 months after radiotherapy. In addition, wound healing was significantly delayed. The prophylactic treatments with three different types of human adipose tissue-derived products significantly prevented the radiation-induced histological changes and accelerated wound healing compared with the vehicle-treated irradiated group.

Discussion: Our results showed that fat injection early after radiotherapy, as well as treatments with SVF or MCAM, improved wound healing at 6 months, indicating that adipose tissue-derived products containing ASCs are potential prophylactic treatments to prevent deterministic chronic radiation disorders. In addition, histological analyses indicated that such treatments prevented atrophy of and fibrous deposition in the subcutaneous adipose layer, while the prophylactic effects of SVF and MCAM seemed to be superior to those of fat grafting, suggesting that these effects resulted from the action of ASCs. Although the exact number of ASCs in the MCAM remains unknown, the number of ASCs in the SVF obtained via collagenase digestion is less than one-half of those contained in original lipoaspirates. The use of cultured ASCs or freshly isolated SVF requires biological processes with time and cost, and is commonly regulated by governments as a cellular product. The MCAM, which is not a regulated product, exhibits preventive effects comparable to those of SVF, which may facilitate surgeons to perform the treatment with a non-regulated tool prepared through minimal manipulation in the same operating room.

Conclusion: This is the first study to demonstrate a potential of the prophylactic treatments after radiotherapy, which could prevent the progression of chronic radiation disorders. The results could have a substantial impact on current anticancer radiotherapies; a next-generation radiation therapy may need to be always combined with a stem cell therapy. Such prophylactic treatments have the potential to improve wound healing of irradiated tissue and clinical outcomes of reconstructive surgery required after cancer radiotherapy.

What Are the Factors That Induce Paradoxical Hypertrichosis After Laser Hair Removal?

Abstract Presenting Author: Hiroshi Nishioka MD, PhD

Additional Author(s): Yoshikazu Inoue MD, PhD, Takayuki Okumoto MD, PhD, Masato Kimura MD

Background: Laser hair removal (LHR) is one of the most commonly requested cosmetic procedures in the world and is routinely performed. Although it is said to be a

very safe treatment, a rare but possible side effect is the appearance of excess hair around previously treated areas, which is known as paradoxical hypertrichosis. Although the cause of this side effect is yet unclear, since there are many reported cases occurred in individuals of Fitzpatrick skin types III–V, darker skin types are at higher risk for developing paradoxical hypertrichosis. (1, 2) Also, in addition to skin types, there are also reports on other factors that may be involved. (1-3) In this study, we aimed to retrospectively examine the triggering factors of this paradoxical effect with reference to previous reports.

Methods: This study included all patients who underwent LHR at our center between November 2018 and November 2020 (all women; age median (IQR): 25 (23-28) years) using long pulsed Alexandrite laser (GentleLase Pro, Candela, Wayland, MA: Hair Removal (HR)) or Diode laser (Soprano Titanium, Soprano Ice PLATINUM, Alma Lasers, Mumbai, Maharashtra: Super Hair Removal (SHR)) randomly. The ratio of the number of Alexandrite laser devices to Diode laser devices during this period was 7 to 3. Basically, laser system parameters (fluence, spot size, or pulse width) were set according to the treatment area. The following clinical features and daily habit between patients with and without post-laser hypertrichosis were statistically compared: age, Fitzpatrick skin types, forearm hair texture, amount of forearm hair, hormonal imbalance, hormonal medications, UV care, skin moisturizing, acne vulgaris, atopic dermatitis, skin infections.

Results: Of the 7381 patients who received LHR, 25 patients (0.34%) demonstrated an increase in hair growth compared to baseline. Of the 25 patients, 24 patients were treated with Alexandrite laser. The most common site was the upper arm, followed by the periareolar, cheek, and mandible. Single-factor analysis showed significant difference in UV care (P=0.041). The combination of Fitzpatrick skin type and UV care included in the binary logistic regression analysis showed that daily UV care significantly lowers the risk of post-laser hypertrichosis regardless of Fitzpatrick skin types (OR=0.41, 95% CI [0.185-0.907], P=0.0278)

Conclusion: Although it is often reported that paradoxical hypertrichosis occurs more frequently in skin types Ⅲ or higher (which is more common in Japanese), the incidence in our study was not higher than in previous reports. (1, 4, 5) Also, there was no difference in incidence by skin types. Furthermore, the results suggest that daily UV care and LHR with SHR may reduce the incidence of hypertrichosis. In addition to the previously reported common sites, our results show that periareolar area is also one of the high-risk areas. (1, 3) In the future, we will reflect the results of this study and examine whether the incidence rate can be reduced.

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A Novel Procedure: Pelvic Augmentation for Ideal Hourglass Body for Female Attractiveness: A Short-Term Preliminary report

Abstract Presenting Author: Sang Kyu Choi

Additional Author: YOUGUN WON

Introduction: Ideal pelvic line (hourglass body) was thought be the main factor of female attractiveness. Many procedures including a liposuction, fat graft, implant insertion and filler are introduced to get better body contouring. However, an attempt for ideal pelvic line was insufficient. Because, up to this study, there were no genuine skeletal approaches to achieve the fundamental pelvic bone alteration for the achievement of ideal pelvic line.

Materials and methods: A volumetric CT scanning was performed on pelvic bones, and accurate size and dimension were measured. Using a minimally invasive plate augmentation technique, minimizing soft tissue injury and scars, the Titanium plate and silicone implant were inserted through the iliac crest and the incision size varied to the implant size.

Results: From 2020~2023, we had 9 male and 41 female case. We measured PTR(pelvic thigh ratio) on Pelvic AP view of X-ray. Average pre-operative and post-operative PTR was 0.93 and 1.05 retrospectively. We could obtain ideal PTR by increasing the pelvic width as much as we designed. The neurovascular complication was not reported.
Conclusion: Pelvic osteoplasty with Titanium plate idealizing waist-hip ratio is promising.

Liposuctions in the ambulatory setting - An evidence-based patient safety advisory

Abstract Presenting Author: Asım Gueven MD, MBA

Background: Liposuctions are among the most performed surgeries in plastic surgery in Germany and worldwide. Still, there are ambiguities about safe lipoaspirate volumes and other clinical parameters for patient safety when performing liposuctions in an ambulatory setting.

Material and Methods: A systematic literature review was carried out with the help of the MEDLINE data base of the U.S. National Library of Medicine (NLM) and the bibliographic search engine Google Scholar of Google LLC. After screening almost 800 scientific papers, 197 items in total were identified for further analysis.

Results: The analysis of the international and German literature yielded a systematic overview of recommendations: 1) Volumes of 3,000 ml for lipoaspirate or 5,000 ml for total aspirate should be considered as maximum. 2) General anesthesia should be preferred with increasing liposuction volume 3) Local anesthetic dose per kg body weight must be observed (maximum doses postulated in the literature: lidocaine 55 mg/kg, prilocaine 35 mg/kg, articaine 38.2 mg/kg). 4) Infiltration of tumescence solution should be used with regard to total fluid volumes introduced (maximum ratio 1:1 tumescence infiltration to lipoaspirate - "wet technique") and, in the case of tumescent local anesthesia, total local anesthetic doses. 5) Documentation of the patient history, the intraoperative parameters with medications and fluid quantities used, as well as the postoperative clinical parameters, especially the cardiopulmonary and neurological functional systems is mandatory. 6) In case of clinical abnormalities, inpatient monitoring with further laboratory tests and diagnostics in a fully equipped hospital setting should be available. If using tumescent local anesthesia, lipid solution and methylene blue should be available as antidotes.

Conclusions: Tumescence anesthesia in an ambulatory setting has various advantages and avoids the risk profile of general anesthesia. But limitations in regard to patient safety, especially with higher lipoaspirate volumes, are evident. In the authors view, tumescent anesthesia should be reserved for small volume and localized liposuctions in an outpatient setting. Liposuction in general anesthesia offers more advantages, especially with increasing lipoaspirate volumes.

A case report of tibial adamantinoma with wide excision and a series of two free flaps

Abstract Presenting Author: Alma-Andreea Corpodean MD

Additional Author: Alexandru Georgescu MD., PhD

Introduction: Adamantinoma is a slow-growing malignant bone tumor with low incidence. Usually, it develops in long tubular bones, its most common location is in the tibia (80-85%) with or without the involvement of fibula. Most often it develops between the age of 20 and 50 years and most often in men. The tumor has two subtypes that can be classic or differentiated as described by Czerniak B et al. For the evaluation of the tumor, imagistic findings are mandatory. Magnetic resonance imaging (MRI) it's the most appropriate examination because it can be used to make the differential diagnosis with the aspect of other skeletal lesions as it is specialized for soft tissue lesions. Moreover, it is a useful tool for the decision making of the strategy for reconstructive surgery. Regarding the treatment there are no definitive guidelines for adamantinoma. The initial step in diagnosis of an adamantinoma tumor is of course an attentive biopsy that has to be performed without curettage. The treatment of choice used to be amputation but with the progress of medicine, "en bloc resection" with wide operative margins of the lesion followed by limb reconstruction is preferred.

Case report: A 40-year-old female presented a pathological fracture to the 1/3 shaft of the left tibia for which she was admitted in the Orthopedics Clinic in Cluj-Napoca. A radiography was performed, and multiple bone masses were identified at the left tibia middle shaft. After the initial radiography examination an MRI was performed and confirmed multiple intraosseous tumors. An open biopsy was performed by the orthopedics team and histopathology examination revealed an adamantinoma tumor. After thorough discussion with the patient about the options of treatment that included even the option of amputation of the lower left limb, a partial tibia wide resection and reconstruction with a tibia custom-made prothesis and latissimus dorsi free flap was selected. After 2 weeks the patient presented late vascular thrombosis of the latissimus dorsi flap and another surgery with a free latissimus dorsi flap was performed. The surgery had a multidisciplinary team including orthopedics and plastic surgery members.

Discussions: Adamatinoma tumor is most frequent found at the level of tibia, but other cases described locations such as humerus, ulna, radius, femur, fibula alone and rarely in the spine, ribs, carpal or metatarsal bones or calcaneum. In classic adamantinoma the age is about 40 years old while for the differentiated adamantinoma patient mean age is up to 20 years old. The two adamantinoma subtypes have distinct histological and radiographic differences. There is no consensus for the treatment of choice. There are a few cases in literature that describe wide excision of the tumor with reconstruction using prothesis or vascularized bone flap and various free flaps for soft tissue coverage, depending on the site of the tumor.

Conclusions: Adamantinoma is a rare bone tumor for which the definitive diagnosis is established only after histopathological examination of the tumor because on MRI and other imagistic findings it may resemble to various types of tumors. There is no standard

treatment and nowadays it is preferred wide excision of the tumor with limb salvage reconstructions. It usually requires a multidisciplinary team.

Is there still a role of gracilis free flap in the era of perforator and fascial free flaps?

Abstract Presenting Author: Dragos Zamfirescu MD

The gracilis muscle flap has been a reliable option for soft tissue reconstruction for several decades. However, with the development of newer techniques such as perforator and fascial free flaps, the indications for free gracilis flap have become more limited.
We will present some of the indications where the free gracilis flap may still be preferred over other options.

While perforator and fascial free flaps are becoming increasingly popular, the free gracilis flap still has a role in certain reconstructive surgeries. The decision to use a free gracilis flap should be made on a case-by-case basis and should always be individualized based on the specific needs of the patient, surgical factors, and the experience of the surgical team. A thorough assessment of the defect, the surrounding tissue, and the patient's overall health is essential in determining the best reconstructive option.

What are the medical and ethical limits of performing reconstructive microsurgery in patients with serious medical problems?

Abstract Presenting Author: Dragos Zamfirescu MD

Free flap surgery is a complex and advanced surgical technique. While free flap surgery has been very successful in many cases, there are some limitations to this type of surgery.
There are "classical" contraindications in performing long and difficult surgeries in patients with serious medical problems.

The decision to perform free flap reconstruction in patients with serious medical problems should be made on a case-by-case basis, considering the individual patient's medical history, current health status, and the risks and benefits of the procedure. Close monitoring and management of the patient's medical conditions during the perioperative period is essential to minimize the risks of complications.

In conclusion, free flap surgery is a powerful tool in the field of reconstructive surgery, but it is not without limitations. Patients and surgeons must carefully consider the risks and benefits of free flap surgery, as well as other options, before planning the best course of treatment.

The levels of “happiness” hormones during and after performing microsurgery

Abstract Presenting Author: Dragos Zamfirescu, MD

Endorphins, also known as the "hormones of happiness," play a role in the overall experience of surgeons performing microsurgery. Microsurgery is a highly specialized form of surgery that requires precision and skill and can be physically and mentally demanding, requiring a high level of focus and concentration from the surgeon.

We studied the levels of dopamine, serotonin, adrenaline, and noradrenaline in the blood of 2 surgeons during and after performing microsurgery.

The release of endorphins in the surgeon can have several potential benefits during microsurgery. For example, endorphins can help to improve concentration, which is critical for the success of the procedure. Additionally, endorphins can promote a sense of calm and reduce stress, which can help to improve the surgeon's performance and decision-making abilities. Furthermore, endorphins can contribute to the overall satisfaction and well-being of the surgeon, which can have a positive impact on the quality of care provided to patients. Surgeons who experience high levels of stress or burnout are more likely to make errors or experience complications during surgery. Therefore, the release of endorphins can help to reduce stress and promote a more positive work environment for the surgeon.

Microsurgical hepatic artery anastomosis during liver transplantation from living donor and pancreatic cancer resection

Abstract Presenting Author: Alexandru Stoian

Additional Author: Dragos Zamfirescu MD

Objective: Hepatic artery reconstruction is a critical aspect of liver transplantation from living donor (LDLT) and hepatic artery injury in pancreatic cancer resection. The reported incidence of hepatic artery thrombosis (HAT) was between 14% and 25%. By involvement of plastic surgeons with competence in microsurgery in hepatic and pancreatic surgeries team, the HAT incidence was reduced up to 1.7%. The aim of the

study was to present our experience regarding hepatic artery reconstruction.

Materials and methods: We conducted a retrospective analyzes, between 2012 and 2023, of postoperative outcomes after LDLT and pancreatic cancer resection where reconstructive microsurgeons were involved in hepatic artery anastomosis. The arteriorrhaphy was performed under surgical microscope or high magnification loupes and the surgeries took place in Clinical Institute Fundeni, Republican Hospital from Chisinau. Grigore Alexandrescu Childs Hospital and one private hospital.

Results: Our study identified 127 patients, with age between 2- and 64-year-old, the microsurgical team performed 130 hepatic artery anastomosis, 2 arteries were reconstructed in 3 patients. The overall HAT rate was 2.36% (3 cases) and no immediate need of retransplantation.

Conclusion: The introduction of microsurgeon and microsurgery techniques in LDLT and after pancreatic cancer resection team can decrease the rates of HAT and improve the overall success of hepatic and pancreatic surgery.

Eight years of experience in obstetrical brachial plexus paralysis treatment

Abstract Presenting Author: Alexandru Stoian

Additional Author: Dragos Zamfirescu MD

Objectives: Obstetrical brachial plexus paralysis (OBPP) treatment is both challenging and rewarding, especially in total upper limb paralysis. The aim of this paper is to bring into attention our experience regarding OBP surgical management.

Materials and Methods: The study describes a single surgeon experience between 2014 and 2022, all surgeries were performed in both public and private hospitals, the data has been retrieved from written and video medical records.

Results: We enrolled 14 patients with ages between 5-22 months (median 7,5) at first surgical intervention, the median follow-up was 2 years and 8 months (6 months – 7 years and 7 months). All patients benefit from microsurgical procedures, most prevalent techniques were nerve transfers (spinal accessory nerve to suprascapular nerve, intercostals to musculocutaneous nerve), nerve grafts (sural nerve or medial brachial cutaneous nerve grafts between C5-C6 roots and distal stumps, or between contralateral C7 root and injured limb). Also, a number of 4 patients needed multiple surgeries, including tendon transfers, especially for reanimation of hand and fingers extension. All of our patients improved at least 90 degrees of shoulder abduction, full

elbow flexion and different degrees of hand and finger flexion, extension.

Conclusion: As we mentioned before, OBPP is a technically demanding but rewarding pathology in terms of functional outcomes. Most of the times a multimodal approach, meaning microsurgical procedures and tendon transfers, lengthening during early childhood are needed to fulfill the upper limb function.

Microsurgery in oncologic terminal patients – our experience and literature review

Abstract Presenting Author: Alexandru Stoian

Additional Author: Dragos Zamfirescu MD

Objective: Terminally ill oncology patients frequently deal with ulcerated and bleeding tumors, pain, extensive dressings, odor, decreased quality of life, and disturbance of body image. Plastic surgeons can be involved in covering defects after resecting the tumoral masses. Microsurgery plays an important part in this process, allowing the patient to participate in social life for the remaining time. This paper presents our experience with palliative surgeries in oncology patients using microsurgical techniques and provides a literature review.

Materials and Methods: Our study is a case series representing the experience of a single surgeon. The surgeries were performed in both public and private hospitals. The main source for the literature review was the PubMed database.

Results: We identified four patients with end-stage cancer disease; three presented with head and neck cancers, and the flap of choice was the anterolateral thigh free flap. The fourth patient had a lower limb sarcoma metastasized in the lungs and bones, and the defect was covered with a radial forearm free flap.

Conclusion: Microsurgery in terminally ill oncology patients can be a valuable choice of treatment, bringing dignity to their last months of life. Nevertheless, it is importat to weight between size of the surgery and patient benefit.

Prospective and single-group clinical trial of wound healing efficacy of piscine acellular dermal matrix for acute traumatic full thickness wound

Abstract Presenting Author: Young Hun Kang

Additional Author(s): Eunsoo Park MD, Joon Suk Bae

Introduction: The piscine acellular dermal matrix (Kerecis Omage3 wound matrix) is a decellularized skin matrix derived from fish skin and represents an innovative concept to achieve wound healing. It has been reported that this piscine ADM has antimicrobial and anti-inflammatory functions so useful for wounds such as chronic wounds and diabetic wounds. In addition, several studies have already proven the efficacy of fish-derived skin products in chronic and complex wounds. In the future, the fish Omega3 wound substrate is, as a product that strengthens antibacterial and anti-inflammatory functions on acellular dermal substrate, expected to be applied to acute wound of full thickness damage to achieve effective infection prevention and wound healing.
The purpose of this study is to see if the effect of rapid epithelialization can be achieved by pADM as a concept of regenerative surgery on the skin & soft tissue defect caused by total skin damage, or by performing a second skin transplant after reconstructing the wound floor.

Methods: The subjects of the study were patients who visited the outpatient or emergency room of plastic surgery due to acute wound. The study period is from April 2021 to February 10, 2021. Criteria for selecting research subjects was ; Adults aged 19 to under 80 years, the wound that is larger than 1cm2 within 14 days of injury, making it impossible for primary repair, wound that skin flap or graft should be considered for total healing. The end point of the study is when epithelialization is completed. The wound was evaluated at the first point of treatment, and dressing was performed using pADM. Clinical picture of the wound was taken every week, to measure the size of the wound. NRS was evaluated, and VSS (Vancouver scar scale) was checked 1, 3, 6 months after total epithelization.

Results: A total of 18 patients were included in the study. It consisted of 11 men and 7 women, and the average age was 47.7 years.
During the treatment process, the average NRS score was 2.7. The average area of the wound of the study subjects was 6.6 square centimeters. It took 20.2 days on average to complete epithelialization.

Conclusion: The pADM resulted complete wound healing in acute wounds requiring surgical procedure such as flap of skin graft. Thus, it should be considered as a treatment option for acute wounds with are not capable for primary closure or included in indications for surgical treatment.

Pectoral implant to solve donor site morbidity after pectoralis major musculocutaneous flap harvesting for laryngotracheal reconstruction.

Abstract Presenting Author: Jose Vinas MD

Additional Author(s): René Palacios Huatuco, Byron Pizarro Feijoo, xHoracio Mayer MD, FACS

Background: The pectoralis major musculocutaneous flap has been considered for decades the workhorse in head and neck reconstruction. However, the disadvantages of pectoralis flap include the morbidity of the donor site in terms of cosmetic and functional results, since the conventional extraction technique involves the detachment of the entire muscle and leaves the patient with a depression of the skin and an extensive scar in the thorax.

Case presentation: A 33-year-old man with a history of cervical tracheoesophageal fistula after blunt neck trauma during a motorcycle accident. The cervical fistula was persistent and during his treatment required direct closure of the tracheal and esophageal defect with primary suture and interposition of a left pectoralis major flap. The patient consulted our Plastic Surgery Department for an aesthetic defect of the pectoralis major flap donor site. The use of an anatomical pectoral implant associated with lipofilling was planned with the aim of aesthetic reshaping of the male chest.

Discussion: Pectoral implants have evolved as successful alternatives to correct chest wall deformities and are frequently used in men seeking to increase a muscle-deficient or underdeveloped chest. However, its greatest use has been in a variety of congenital and acquired deformities, such as pectus excavatum, Poland syndrome, and tears in the pectoralis muscle.

Conclusion: To the best of our knowledge this is the first case to describe the use of the pectoral implant to solve donor site morbidity after pectoralis flap harvesting for any reconstructive purpose.

Breast reconstruction after blunt breast trauma: Systematic review and case report using the Ribeiro technique.

Abstract Presenting Author: Jose Vinas MD

Additional Author(s): Mariano Ramirez, MD, René Palacios Huatuco, Ignacio Piedra Buena MD, Horacio Mayer MD, FACS

Background: Blunt breast trauma occurs in 2% of blunt chest injuries. Traumatic breast injuries range from bruising to avulsion, caused by compression of the breast between the bony rib cage and the seat belt. This systematic review of the literature aimed to evaluate the evidence on breast reconstruction after blunt trauma associated with the use of a seat belt, and we describe the first case of breast reconstruction using the

Ribeiro technique.

Methods and Materials: A systematic search of Google Scholar, MEDLINE, and EMBASE databases was conducted in November 2022. The literature was screened independently by two reviewers, and the data was extracted. Our search terms included breast, mammoplasty, blunt injury and seat belts. In addition, we present the case of a woman with a left breast deformity associated with the use of a seat belt and her breast reconstruction using the inferior Ribeiro flap technique.

Results: Initially, 120 articles were identified, but only six articles were included in the final review. All included studies were published between 2010 and 2021. The included studies recruited seven patients. According to the Teo and Song classification, seven class 2b cases were reported. In five cases a breast reduction was performed in the deformed breast with different types of pedicles (3 superomedial flaps, 1 lower flap, 1 superior flap). One case presented complications.

Conclusion: Until now, there has been no consensus on reconstructive treatment due to the low incidence of this entity. Additionally, we present the first case to describe breast reconstruction after blunt chest trauma using the Ribeiro technique.

Surgical management of skin and soft tissue infections by Mycobacterium abscesses following mesotherapy: first case series reported in Argentina and systematic review of the literature.

Abstract Presenting Author: Jose Vinas MD

Additional Author(s): Diego Giaccone MD, Alejandro Coloccini, René Palacios Huatuco, Horacio Mayer MD, FACS

Background: Skin infections due to nontuberculous mycobacteria after cosmetic procedures have been increasingly reported in the last years. Late diagnosis and paucity of data published about surgical treatment are related to poor outcomes. The aim of this study is to present the first case series of patients with Mycobacterium abscesses skin infection after mesotherapy treated with surgical debridement and primary wound closure, and to systematically review the published evidence on the surgical treatment of these complications.

Methods: All patients who consulted at our department for skin lesions at injection sites after mesotherapy were included in this retrospective review. Time of evolution, age, sex, and type of treatment were evaluated in this study. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) reporting guideline was used for the

medical literature review.

Results: Three cases were included in this study. The mean age of the patients was 38.6 years (rank: 30-48). Two of the three patients were women. The mean incubation time was 9.6 days (rank: 7-15). All the lesions appeared in the sites of injection of phosphatidylcholine after mesotherapy for abdominal fat reduction. Antibiotic treatment was performed with imipenem 1g and linezolid 600 mg twice daily for 1 month, followed by moxifloxacin 400 mg daily and trimethoprim/sulfamethoxazole 160/800 mg twice daily for 5 months. We performed complete resection of the lesions and primary closure of the lesions in all the three cases. The patients evolved favorably, with a satisfactory aesthetic result. Along the literature and regarding surgical treatment, debridement of the lesions without primary wound closure predominated (62.7%) with poor scarring results reported.

Conclusions: This is the first study reporting successful surgical management of post-mesotherapy skin infectious lesions due to Mycobacterium abscesses. Following our promising results, we recommend surgical debridement and primary wound closure of post-mesotherapy skin infection lesions whenever possible to allow complete eradication of infection and better aesthetic result.

Reconstruction of massive abdominal wall necrosis after abdominoplasty in a patient with multimorbidity

Abstract Presenting Author: Jose Vinas MD

Additional Author(s): René Palacios Huatuco, Tatiana Ruffa, Horacio Mayer MD, FACS

Background: Abdominal wall defects encompass a broad spectrum of musculo-fasciocutaneous abnormalities. Reconstruction of large abdominal wall defects that are not amenable to primary closure remains a challenging problem.

Case presentation: A 42-year-old woman with a history of multimorbidity (hypertension, type 2 diabetes, asthma) and obesity. The patient presented to our Plastic Surgery Department due to a 35 × 30 cm defect in the abdominal wall after repair of an incisional ventral hernia and abdominoplasty with two simultaneous incisions performed by a general surgeon from another institution. The abdominal wall reconstruction was performed in two stages. Three tissue expanders (TE) were used to develop skin flaps and definitive correction of the abdominal defect was subsequently performed. After two years, the patient did not show signs of recurrence and the functional and aesthetic results were satisfactory.

Discussion: Various techniques for abdominal wall reconstruction have been proposed. TE are commonly used by plastic surgeons for various types of reconstruction. However, its utility in the repair of complex abdominal wall defects remains limited.

Conclusion: In our experience, the use of TE could be considered a feasible and safe technique in the reconstruction of large abdominal wall defects due to massive soft tissue necrosis in patients with multimorbidity.

A Comparative Evaluation of 2D and 3D-based templates for Orbital Wall Fracture Reconstruction

Abstract Presenting Author: Yoshitaka Kubota MD

Additional Author(s): Shinsuke Akita MD, PhD, Nobuyuki Mitsukawa MD, PhD

Introduction: Orbital wall fractures often require complex surgical interventions to reconstruct the orbital wall. Preoperatively made templates are beneficial in facilitating these procedures. Traditionally, two-dimensional computed tomography (2D CT) based templates have been utilized. However, with the advent and wide availability of 3D printing technology, there has been a gradual shift towards using three-dimensional (3D) model-based templates. Despite their increasing use, a comprehensive discussion regarding these two methods' efficiency and time cost needs to be included in the current literature. This study aims to bridge this gap by directly comparing the two methods.

Objective: Our pioneering study aims to directly compare the efficacy and application of two-dimensional computed tomography (2D-based template) and three-dimensional model-based templates (3D-based template) in the surgical management of orbital wall fractures.

Methods: A hospital-based prospective study was conducted to compare 2D and 3D-based templates. The 2D-based templates were created with graph paper based on measurements from coronal section CT scans with a 2 mm slice thickness. The 3D-based templates were crafted from an aluminum sheet, utilizing 3D-printed resin models processed by Proplan CMF ver. 3.0, Materialise (Leuven, Belgium) and 3D printer Form 2, Formlabs (MA, USA). Both the 2D and 3D-based templates were created by separate teams without mutual consultation. The templates were then analyzed quantitatively using ImageJ software to assess and compare their accuracy.

Results: Six patients were included in the study, all of whom had orbital wall fractures; three had inferior orbital wall fractures, and the other three had combined medial and inferior orbital wall fractures. Creating the 2D-based template was significantly quicker,

ranging from 10-15 minutes, while the 3D-based template took 450-500 minutes, including 3D printing time. The area match rates between the 2D-based and 3D-based templates were 83 ± 8%, indicating a high level of congruency. Postoperative CT scans confirmed the proper insertion of templates. The postoperative follow-up period spanned from 6 to 36 months, during which the course was uneventful for all patients.

Conclusion: Both 2D and 3D-based templates are reliable in reconstructing orbital wall fractures. Although the 2D-based templates provide time efficiency, the 3D-based templates offer the surgeon a three-dimensional model to aid intuitive understanding. Case complexity, available resources, and surgeon preference can influence the choice between these two methods. This research provides valuable insights that may guide surgical decisions for managing orbital wall fractures.

The anatomical study of main nerve supply to the nipple of the male breast in comparison to the female

Abstract Presenting Author: Pimthawan Vachirodom

Additional Author: Ngamcherd Sitpahul

Introduction & Objectives: Transgender people have changed our world. Reassignment surgery, especially breast augmentation is one of the popular procedures for Trans. The common complication after the operation in females is numbness of the breast or nipple was found up to 15% that contrast to a Trans, which has a low incidence of numbness. We lacked detail for the innerve of the male breast because most of the cadaver studies were done in female cadavers.

Objectives: The author would like to explore the pattern of the lateral cutaneous branch of the intercostal nerve innervating to the male breast in comparison to the female in cadavers, confirmed by the pathological report and the anatomical landmark of this nerve.

Material & Methods: The innervation of male breasts was studied compared with female breasts in 14 cadaver breast dissections and one respectively with a clinical case of transgender breast augmentation surgery in Ramathibodi hospital, from July 2020 to June 2022. An inclusion criteria e.g., Thai nationality, male, aged over 18 years. Cadavers who have prior trauma or deformity at the chest wall, breast cancer, and pathology not identified nerve were excluded from the study. An anatomical cadaver study collected information e.g., Pattern innervation of male compared with female breast, confirmed by histopathology

Results: The anatomical landmark of the 4th lateral cutaneous branch of the intercostal nerve in the male breast can be approximately from the upper two-thirds of the distance between the sternal notch to the xiphoid then perpendicular with the anterior axillary line or measured 7 cm. from the nipple in supine position with the arm abducted. We found 6 from 22 breasts that had a different distribution and pattern of innervation of male compared to the female breast, by deep branch of the anterior division of lateral cutaneous nerve travel along the 4th rib beneath the pectoralis major muscle then piercing muscle for supply the sensation of the nipple that contrast to the female breast.

Conclusion: There is a variation of distribution and pattern innervation of the 4th lateral cutaneous branch of the intercostal nerve of male compared with female breasts by deep branch of the anterior division of lateral cutaneous nerve run beneath the pectoralis major muscle, confirmed by histopathology

Reconstructing Complex Peripatellar Defects using the Descending Genicular Artery Perforator Flaps

Abstract Presenting Author: Doran Kalmin

Background: Large complex peri-patella defects are commonly reconstructed by free flaps or pedicled muscle flaps, whereas pedicled fasciocutaneous perforator flaps are commonly overlooked. The descending genicular artery perforator (DGAP) flap is a versatile flap that offers thin and pliable tissue that provides ideal "like with Like" peri-patella soft tissue defect reconstruction. This paper aims to demonstrate the safe use of a pedicled fasciocutaneous DGAP flap for extensive traumatic peri-patella defect reconstructions and to exhibit the surgical pearls via a case series.

Methods: This is a retrospective study of consecutive complex peri-patella reconstructions with DGAP flaps from January 2011 and December 2018. Patient demographics, medical comorbidities, aetiology/size/and location of the defects were reviewed. Flap, donor site, and overall surgical outcomes were clinically assessed and documented. Descriptive statistics were conducted and analysed by IBM SPSS Statistics 23.

Results: 5 consecutive cases with complex peri-patella defects (5x8 to 8x10 cm) were recruited. Two were males, and 3 were females, with a mean age of 38.4 years. Four were trauma, and 1 was an oncological case. DGA perforators and DGA terminal branches were consistent. One patient needed a split-thickness skin graft to reconstruct the secondary defects. All the flaps survived with an average follow-up of 24 months.

Conclusions: DGAP flap provides a reliable alternative to free flap for large complex peri-patella defects. With the inclusion of the proximal long saphenous vein and judicious selection of DGA perforators and its terminal branches, the DGAP flap can be harvested and used safely in the high velocity impacted knee.

Health-related Quality of Life Outcomes of Abdominoplasty for Post-partum Rectus Diastasis: Preliminary Results.

Abstract Presenting Author: Siobhan Fitzpatrick MD, MS

Additional Author(s): David Watson, Tamara Crittenden, Nicola Dean MBChB, PhD

Background: Post-partum rectus diastasis is reported to be associated with decreased health-related quality of life. Correction of rectus diastasis with abdominoplasty (with muscle plication) has been shown to improve quality of life in patient reported outcome measures (PROMs) research. However, the extent and duration of this improvement has not been previously demonstrated.

Aims: We aimed to quantify the health-benefits of abdominoplasty for women with post-partum rectus diastasis using PROMs.

Methods: We are conducting an Australia-wide cohort study on women with rectus diastasis undergoing abdominoplasty (surgical group) and women not having surgery for at least 12-months (controls). Inter-rectus distance of >30mm is confirmed on ultrasound. Health-related quality of life outcomes are assessed via the SF-36. Online questionnaires are administered via REDcap at baseline (pre-operatively), and then 3, 6, 9, and 12 months (post-operatively). Ethical approval is granted by the Southern Adelaide Clinical Human Research Ethics Committee.

Results: 213 women are enrolled (108 surgical, 105 controls). Recruitment and data collection is ongoing. SF-36 data for baseline and 3-month follow-up is available for 77 women (35 surgical, 42 controls). Women in the surgical group demonstrated significant improvements in all health-related quality of life sub-scales and weighted composite scores for physical ($p=0.03$) and mental health ($p<0.001$). The control group demonstrated no improvements across all sub-scales and no significant difference in physical and mental health composite scores.

Conclusions: These early results from our Australia-wide cohort study demonstrate promising improvements post-operatively for women undergoing abdominoplasty for post-partum rectus diastasis.

Complex Abdominal Wall Reconstruction in Adult Prune Belly Syndrome

Abstract Presenting Author: Isobel Mei-Ying Yeap MD

Additional Author(s): Jeremy Bishay MD, Phaethon Karagiannis MD, Bish Soliman MD

Purpose: Prune Belly Syndrome is a rare congenital condition characterized by a partial or complete absence of abdominal wall muscles, resulting in functional issues such as increased respiratory effort and issues with urinary stream.

Methodology: We present the first case report in the literature of Prune Belly Syndrome abdominal wall reconstruction reinforced with mesh followed by a literature review on abdominal wall reconstruction in Prune Belly Syndrome.

Results: A 22 year old male with prune belly syndrome presented with long-standing discomfort from his large abdominal wall hernia, reduced urinary stream and cosmetic concerns. His reconstruction involved a midline laparotomy incision down to fascia, wide undermining of the skin flaps and onlay mesh reconstruction. Excess skin was left intact due to concerns regarding vascularity of the skin flap and later revised without issue. It was healed at 3 weeks.

Abdominal wall reconstruction with mesh for Prune Belly Syndrome has never been described in the literature before. The described techniques for reconstruction all involve double breasting of the fascia. Reconstruction with bilateral rectus femoris transpositions has also been described.1

Conclusion: Abdominal wall repair with mesh offers a sturdy reconstruction for adult Prune Belly Syndrome patients who want a more active lifestyle. Its advantage is a stronger, longer lasting repair. However, skin vascularity can be compromised. Skin excision should be conservative and staged.

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1. Fearon JA, Varkarakis G. Dynamic abdominoplasty for the treatment of prune belly syndrome. Plast Reconstr Surg. 2012;130(3):648-657. doi:10.1097/PRS.0b013e31825dc170

Pre-pectoral Direct-To-Implant Reconstruction with ADMs: safety and outcomes in "thin patients"

Abstract Presenting Author: Anna Scarabosio MD

Background: Prepectoral direct-to-implant reconstruction with ADM represents a safe, fast and successful option in breast reconstruction in a selected cohort of patients. Nowadays, this procedure is considered challenging in low BMI patients. Meanwhile, this cohort have not been accurately analyzed yet.

Material and Methods: A single institution retrospective cohort study was performed between January 2019 and March 2023 in all women who underwent mastectomy. Post-operative complications represented the main topic: these were classified into early and late ones based on onset time. At least 12-months follow-up was required. All the patients were asked to complete BREAST-Q questionnaire at the last follow-up check. A comparison with ideal BMI population was performed.

Results: Fifty-nine patients were included in our study. Twenty-three (39%) patients had early complications. The most common was wound dehiscence which occurred in 9 patients.
Late complications occurred in 30 patients (51%). Rippling, the most common late complication, was seen in 26 patients (44.8 %). Between these, 11 underwent fat grafting procedure to correct the defect and 15 refused corrective surgery because already satisfied with the outcome. No significant differences were detected compared to standard BMI population.

Conclusions: Pre-pectoral reconstruction with ADM in thin patients may be considered as safe as in standard BMI patients. Rippling may be more frequent, but, whenever needed, easy to correct with few session of lipo-grafts.

Pretreatment Color Doppler Ultrasound as an Early Predictor to Patient's Response to Oral Propranolol.

Abstract Presenting Author: Shahad Alabdulmuhsen

Additional Author(s): Hussain Alhendal, Ahmad ALSultan, Hisham Burezq BSc, MD, FRCSC, FAAP

Objective: Infantile hemangioma (IH) is the most common vascular neoplasm in infancy. Propranolol, a nonselective B-blocker, is considered the first line of treatment. Color doppler ultrasound (CDU) is often used as diagnosis method in cases of infantile hemangioma. Our aim is to establish whether parameters found in color Doppler ultrasound could act as an early predictor to patient's response to oral propranolol before starting the treatment.

Methods: A prospective cohort study involving 23 patients with confirmed diagnosis of

Infantile hemangioma underwent color Doppler ultrasound before intervention. CDU included measuring peak systolic velocity (PSV), end diastolic velocity (EDV) and resistive index (RI). Systematic oral propranolol was started reaching to 1.7mg/kg twice daily. Clinical evaluation was done to assess patient's response after starting the treatment.

Results: The study included 19 female patients (82.6%) and 4 male patients (17.4%). Majority of patients started systemic propranolol early, 45.5% started between 1 to 3 months of age, 31.8% between 4 to 6 months and 22.7% were older than 6 months. Good response was noticed with patients who started treatment within 4 to 6 months of age reaching to 85.7%. Thirty eight percent of patients had intermediate flow and 62% had high flow hemangiomas. Seventy five percent of patients with Intermediate flow hemangiomas had a good response to treatment, whereas only 58.3% of patients with high flow did. During the course of propranolol treatment, 63.6% of our study group noticed good color improvement and 36.4% noticed poor color improvement. By using Spearman correlation coefficient, patients' improvement was found not to be related to pretreatment values of PSV, EDV and RI in CDU (p-value > 0.05).

Conclusion: In our study, no correlation was found between pretreatment ultrasound doppler measurements (PSV, EDV & RI) and patients' clinical response after treatment initiation. Further studies with larger group of patients are advocated to support our result.

PREDICTIVE VALUE OF THERMAL IMAGING DEVICES IN POST-ONCOLOGICAL BREAST SURGERY

Abstract Presenting Author: Andrea Lisa MD

Additional Author(s): VALERIO LORENZANO, Francesca DE LORENZI

Background: Impaired perfusion of the remaining skin flap after Skin Reducing Mastectomy (SRM) can lead to wound-healing disorders and subsequent necrosis. The use of a thermal imaging device like FLIR ONE during the surgical procedure may aid in assessing the flap and identifying areas at risk for postoperative complications.

Methods: Eighteen female patients undergoing Skin Reducing Mastectomy with immediate breast reconstruction (4 patients) or two-stage prosthetic reconstruction (14 patients) were enrolled. Pre- and postoperative thermal images were obtained using FLIR ONE thermal imaging device. Potential patient- and surgery-related risk factors were collected and correlated with the occurrence of postoperative complications.

Results: Ischemic complications were observed in 28% of cases, with 60% attributed to surgical wound dehiscence, 20% to delayed healing and 20% to partial necrosis of the nipple-areola complex (NAC). Patients who developed ischemic complications had lower mean body temperature at the start and at the end of the mastectomy compared to uncomplicated patients.

Conclusion: Impaired skin flap perfusion may be influenced by multiple patient- and surgery-related factors. Preoperative screening for risk factors and intraoperative perfusion assessment may help predict the occurrence of postoperative complications.

Measuring Outcomes of Facial Skin Cancer Surgery Using the FACE-Q Skin Cancer Module

Abstract Presenting Author: Mary Lengo

Additional Author(s): Samuel Handshin, Tamara Crittenden, Phillipa van Essen, Andrea Smallman, Nicola Dean MBChB, PhD

Purpose: Facial skin cancer surgery affects quality of life and psychosocial well-being. The FACE-Q skin cancer module assesses these factors.

Methods: A prospective cohort study of patients undergoing facial skin cancer surgery at Southern Adelaide Local Health Network was conducted between November 2021 and June 2023 to assess impact on facial skin cancer surgery. Participants completed FACE-Q questionnaires pre-operatively and at one, three, six, and 12 months post-operatively. Mean Rasch-transformed scores (0-100) from the five scales and raw scores of two checklists were compared.

Results: 110 participants were recruited and completed questionnaires before and after surgery. Statistically significant improvements were demonstrated in Cancer Worry, Appearance-Related Distress, Satisfaction with Facial Appearance and Appraisal of Scars over 6-months post-operatively. A statistically significant increase in Sun Protection Behaviours and decrease in the impact of Adverse Effects was observed post-operatively. Mean Satisfaction with Information scale scores remained stable post-operatively. Women and younger participants (< 60 years) and those surgically treated with reconstructive closure had lower outcomes in appearance-related scales and higher Appearance-Related Distress post-operatively. Participants with melanoma experienced increased Cancer Worry and Appearance-Related Distress over 12 months.

Conclusion: Appearance-related and quality of life scales improved post-operatively and findings demonstrated that women, younger patients, those with melanoma and those undergoing reconstructive surgical closure may benefit from targeted additional

pre-operative counselling and post-operative support to improve outcomes following facial skin cancer surgery.

Migraine Surgery: Our Experience.

Abstract Presenting Author: Edoardo Raposio MD, Phd

Today, Migraine Surgery has been widely accepted as an effective surgical solution for chronic headaches refractory to medical treatment. Indeed, in the past two decades, extra-cranial trigger deactivation for migraine headaches has been used more and more routinely in surgical practice. There is an abundance of compelling physiological, experimental, pharmacological, and clinical evidence to indicate that in many migraine sufferers their pain originates in the dilated extracranial terminal branches of the external carotid artery. We have 13 years of specific clinical experience, with more than six hundreds of operated patients, that is the largest and most extensive operating casuistry in Europe. Surgical techniques and pitfalls will be detailed. We routinely find a dilated, ectasic or frankly aneurismatic vessel crossing or intertwining with the nerves. We coagulate the vessels and perform a complete neurolysis of the nerves. The overall results were satisfactory, with a minimal rate of minor complications, such as transient numbness or hypoesthesia of the operated sites. We operated on 612 patients, with the following success rates: Occipital surgery: remarkable improvement in 95% of patients (86% complete recovery); Temporal surgery: remarkable improvement in 88% of patients (50% complete recovery). Frontal surgery: remarkable improvement in 77% of patients (46% complete recovery). One unanswered question is: Migraine attacks are triggered by mechanical irritation of the nerves by the near-by pulsating vessels or nociceptive stimula from vasa nervorum of the dilated vessels? Further studies are needed to better clarify this point.

Outcomes Of Abdominoplasty in Tumescent Local Anesthesia Combined With Subdural Anesthesia

Abstract Presenting Author: Matilde Tettamanzi

Additional Author(s): Emilio Trignano MD, Corrado RUBINO

Background: Abdominoplasty is a common surgical procedure performed under general anesthesia, and although the use of TLA combined with subdural anesthesia has never been reported in abdominoplasty, it offers several benefits such as safe and effective local anesthesia and vasoconstriction. We outline our experience with the TLA technique for primary abdominoplasty over the last 7 years.

Methods: From 2014 to 2021, TLA and subdural anesthesia have been used in primary abdominoplasty surgeries for 70 patients. The TLA solution consisted of 25mL of 2% lidocaine, 8mEq of sodium bicarbonate, and 1mL of epinephrine (1mg/1mL) diluted in 1000mL of 0.9% saline solution. The solution was then injected with a 2mm cannula into the subcutaneous adipose tissue in the suprafascial plane. The subdural anesthesia was performed at intervertebral level L1-L2 using Ropivacain 15/18 mg in 4 ml.

Results: Patients aged from 32 to 75 years. The amount of tumescent solution infiltrated ranged between 500 and 1000 mL. Mean surgery time was 70 minutes, and recovery room time averaged at 240 minutes. Major complications related to the surgery were observed in 7% of patients, including 3 hematomas and 2 seromas. Two patients experienced wound dehiscence and no dystrophic scar formation was observed. Eventually, there was no need for a conversion to general anesthesia.

Conclusions: Tumescent Local Anesthesia combined with subdural anesthesia is a highly effective and safe method for performing abdominoplasty. This technique has proven to be an excellent choice for primary abdominoplasty, providing significant benefits to patients and surgeons alike due to its safe administration, precise pain management during and after surgery, and minimal postoperative side effects.

Report on a Surge of Invasive Group A Streptococcal (iGAS) Infections; Clinical findings, Antimicrobial Therapy and Outcomes

Abstract Presenting Author: Mehreen Ahmad MBBS, MRCS

Additional Author(s): Fiachra Sheil MD, Jemima Dorairaj MD

Introduction: The epidemiology of invasive group A streptococcal infections varies according to the emergence of new GAS clones which may express determinants of virulence that aid infection and avert host immunity 1 . We have observed an increase in presentations to our acute plastic surgery service with significant iGAS related infections and aimed to highlight the range of clinical presentations, surgical and antimicrobial therapy, and sequelae of such infections.

Methods: A retrospective cohort study is presented. Data pertaining to all patients presenting to our service with confirmed iGAS infections between January and April 2023 was collected. Variables included demographics, presenting clinical findings, operative treatment, antimicrobial therapy and surgical outcomes. DNA genomic sequencing was completed for all cases.

Results: Fourteen patients were treated for iGAS infections between January and April

with a mean age of 48. All patients presented with evidence of skin / soft infection, 50% has skin necrosis and 50% had systemic signs of sepsis. Only 2 of the cohort has evidence of preceding streptococcal pharyngitis. Two patients presented with necrotising fasciitis and required extensive debridement, both on lower limbs. All patients required surgical debridement /irrigation and the average number of theatre episodes per patient was 2.3. Four cases required soft tissue reconstruction, 2 with BTM, 1 with a cross-finger flap and 1 with a split skin graft. Five patients required ionotropic support and 3 were admitted to intensive care for invasive monitoring / intubation. All GAS isolates cultured in the laboratory were found to be sensitive to penicillin and required a range of 2 to 6 weeks of antibiotic therapy. Six patients had secondary infections and the most common organism was staphylococcus aureus. DNA genomic sequencing is also recorded (pending).

Conclusion: This study represents the recent surge in invasive group A streptococcal infections presenting to plastic surgery services. Clinicians should be aware of the risk of sepsis with need for ionotropic support, skin necrosis requiring secondary reconstruction and the need prolonged antimicrobial therapy in such cases.

Reference:

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Neoadjuvant Immunotherapy and De-Escalation of Surgery in Locally Advanced Breast Implant-Associated Anaplastic Large Cell Lymphoma (BIA-ALCL)
Presented During:

Abstract Presenting Author: Giulio Tarantino Dr.

Additional Author: Marzia Salgarello MD

Breast implant-associated anaplastic large cell lymphoma (BIA-ALCL) is a rare form of non-Hodgkin T cell lymphoma diagnosed in patients with a history of textured breast implants. Most patients develop a periprosthetic effusion at early stages of the disease while less common presentations include a palpable mass, severe capsular contracture, lymphadenopathy, or cutaneous erythema. Due to the complex nature of this disease, a multidisciplinary approach is necessary for optimal management, particularly in case of locally advanced disease or inoperable patients. We present two clinical cases reporting the successful use of neoadjuvant therapeutic protocols in locally advanced BIA-ALCL. The first case reports a 52-year-old patient with a left breast mass-like stage III disease who underwent combined targeted immunotherapy and chemotherapy (BV-CHP).

Following a complete radiological and metabolic response, the patient underwent bilateral implant removal, right total capsulectomy, left radical en bloc capsulectomy and skin resection from the left inframammary fold in continuity with the capsule. The second case reports a 65-year-old patient with a right breast swelling and mass-like stage IIA disease who received targeted immunotherapy with Brentuximab vedotin (BV). Following a complete metabolic response and significant reduction in mass size, she underwent bilateral implant removal and total en bloc capsulectomy. A literature review and our reported cases suggest the effectiveness of targeted immunotherapy with BV as monotherapy or in combination with chemotherapy in locally advanced BIA-ALCL in downstaging of the disease, de-escalation of surgery, reduction of significant post-operative complications and an acceptable tolerance profile. Although surgery is an essential part of treatment, the timing and type of intervention should be carefully planned and warrants a multidisciplinary team discussion, especially when primary, radical resection is uncertain.

Buccal Fat Pad Removal and Fat Grafting

Abstract Presenting Author: Gisella Nele MD

Objective: In recent times, the number of buccal fat pad removal procedures has increased. Knowing the correct anatomy, buccal fat pad removal can be performed safely and fat removed can be used as facial fat grafting
Methods: Between 2019 and 2021, 25 females aged between 40 and 55 years (mean age 46) underwent this procedure. The mean volume of fat removed was 4 cc. (range 3-5 cc).

Descriptions and Results: No complications such as infection, fat necrosis, skin necrosis were reported. However, one patient did present monolateral hematoma due to buccal fat pad removal at 1-day postoperative follow-up. At 1-year follow- up, patients were evaluated according to: 1) FACE –Q satisfaction with cheeks; 2) FACE-Q satisfaction with skin; 3) FACE- Q satisfaction with lips; 4) FACE- Q satisfaction without comes. Scores recorded (EQUIVALENT RASCH TRANSFORMED SCORE): 1) 91-100 for FACE-Q satisfaction with cheeks; 2) 88-100 for FACE-Q satisfaction with skin; 3) 89-100 for FACE-Q satisfaction with lips; 4) 87-100 FACE-Q satisfaction without comes. These results testify a high satisfaction rate among patients.

Conclusions: Bichat's fat pad removal is indicated for improving facial contour in selected patients. In many cases, though, these patients may also need facial fat grafting in other regions, e.g., (zygomatic region and lips). Bichat's fat pad is a viable option for surgeons who would like to perform fat grafting simultaneously.

Wireless implantable myoelectric sensors (IMES) enable multifunctional and simultaneous prosthetic hand control through minimal access ultrasound guided surgery.

Abstract Presenting Author: Aidan Roche

Additional Author(s): Daire McGuinness, Thor FRIDRIKSSON, Rannveig Guðmundsdóttir, Alan Macfarlane, Asgeir Alexandersson, Andrew Hart

Restoring meaningful hand function in transradial amputees remains a significant challenge, despite voluntary control of remnant muscles persisting years after injury. Existing systems cannot reliably provide smooth myoelectric prosthetic hand control due to the technological limitations in discerning multiple electromyography (EMG) signals using surface sensors. Sweat and prosthetic interface movements also negatively affect surface sensors making existing control unreliable.[1] By contrast, wireless implantable myoelectric sensors (IMES) directly record individual muscle contractions from both superficial and deep muscles, thereby facilitating intuitive, simultaneous and multifunctional control of hand prostheses.[2] We report on the first clinical trial participant using a new IMES system implanted via ultrasound guided technique – a 46-year-old male, 16 years after traumatic left transradial amputation, who is a former surface myoelectric user.

In February 2023, during general anaesthetic day case surgery at Glasgow Royal Infirmary in Scotland, eleven IMES were implanted into residual forearm muscles, under intraoperative ultrasound guidance through two short (3-5cm) incisions. Volitional control of target muscles was confirmed by pre-operative ultrasound. Sensor placement was confirmed using intraoperative C-arm X-ray and all sensors passed a wireless communication test. Mild neuropathic pain was experienced post-operatively which resolved with a short course of gabapentin, and no other complications were observed. A multi-articulated, powered hand prosthesis (including wrist rotation) was fitted, and training began 4 weeks after surgery.

On Day 1 of training, all IMES provided EMG signals enabling the participant to simultaneously and intuitively control an initial setup of 3 degrees of freedom (DOF): hand open/close, wrist rotation (pronation/supination) and thumb rotation. The system had capacity for a further 2 degrees of freedom in the study participant but were not utilised in the initial setup. A number of outcome measures were administered during this initial training to assess isolated and combined functions of the IMES system, in comparison to a standard surface sensor controlled multi-articulating myoelectric hand (without wrist movement) used at baseline. Complex function was assessed using the Assessment of Capacity for Myoelectric Control (ACMC), which showed an improvement from 58.2/100 using the baseline device to 93.0 at Day 3 of training with the IMES system. Repeat measures will be administered after training and during home

use of the device over a period of 24 weeks.

Initial outcome data presented here builds on previous studies, [3,4] and shows that IMES implantation using a minimally invasive, ultrasound guided technique is feasible. Results indicate that the new version of the IMES system has the potential to offer amputees smooth and intuitive prosthetic hand control, with increased degrees of freedom, soon after minimally invasive, day case, surgical implantation.

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Wearable Technology to determine short- and long-term functional outcomes after abdominal wall surgery: The AbTech trial.

Abstract Presenting Author: Emmanuel Giannas

Additional Author(s): Richard Kwasnicki MD, PhD, Chiara Rizk, Garikai Kungwengwe, Simon Wood MB, BS, Jonathan Dunne, Christopher Abela

Aims: This study aimed to (1) provide objective data to outline the recovery curve post abdominal wall surgery and (2) determine the patient and surgical factors that are main predictors of outcome using Wearable Activity Monitors (WAMs).

Methods: A multi-centre, prospective, observational study was designed. Consecutive patients undergoing elective abdominal wall surgery were considered for participation. Eligible patients were asked to wear a WAM (AX3, Axivity, UK) from 48 hours pre-operatively to 2 weeks post-op, and again for 48 hours at 1-year post-op. Quality of life surveys (EQ-5D) were conducted at similar time intervals. Physical activity levels per postoperative day were calculated as a percentage of each patient's preoperative value.

Results: Seventeen patients were recruited in this study, with a mean age of 47.76 years. Post-op, the percentage PA dropped to a mean of 37.60% (17.14) and gradually increased to 75.62% (29.35) of the preoperative value on day 14. Activity at 1 year postop was 22.6% higher than baseline levels (p=0.046). Further analysis demonstrated that moderate PA at week 2 postop was significantly lower for obese patients (83.1% vs 26.6%, p = 0.015).

Conclusion: This study begins to describe measurable trends in recovery after abdominal wall surgery. Of interest, patients show increased long-term activity after surgery. Furthermore, there appears to be a divide in outcomes in which obese patients' recover much more slowly than those with a healthy weight. Expanding the sample size will provide more data to identify more patient and surgical factors that are predictors of functional outcome.

Does Hearing Improve Following Primary Cleft Palate Repair?

Abstract Presenting Author: Theodoros Stylianou

Additional Author(s): Jing Qin Tay, Nefer Fallico

Objective: To establish the effect of cleft palate repair on hearing outcomes in children with glue ear and hearing loss undergoing elective primary palatoplasty.

Methods: A retrospective analysis of pre and postoperative audiograms in all children undergoing cleft palate surgery between 2020 and 2022 at a single institution was undertaken. Statistical analysis was performed on pre- and postoperative audiology data and outcomes assessed by cleft palate subtype.

Results: This study confirmed that glue ear and conductive hearing loss is extremely common in children with cleft lip and palate; 86% of the 42 children in our patient's cohort had hearing loss identified preoperatively. Mean age at palatoplasty was 15.2 months (range: 8-33, median: 14, mode: 13). Seven children were syndromic, four of whom had Pierre Robin Sequence (PRS). After cleft palate repair hearing improved in 50% of children, whereas 40% had similar hearing postoperatively and 10% experienced further deterioration in their hearing. When stratified by cleft type (25 CPO, 9 BCLP and 8 UCLP) no difference was noted in audiology outcomes ($p<0.05$). Four patients required hearing aids postoperatively, one had grommets at the time of their cleft surgery.

Conclusions: This study confirms that primary cleft palate repair can have a positive impact on audiology outcomes in cleft patients. These findings suggest that primary cleft palate repair may improve hearing at an early stage, possibly by contributing proactively to restoring Eustachian tube function and normalizing middle ear ventilation before glue ear and associated hearing loss improve with patient maturity.

Nodular Hidradenoma In The Scalp, A Case Report And Review Of Literature

Abstract Presenting Author: Noor Salem

Additional Author(s): Khaled Altarrah MBchb, MRCS, Phd, FRCS(Plast), Hisham Burezq BSc MD FRCSC FAAP

Introduction: Hidradenoma is a rare adnexal tumor arising from either eccrine or apocrine sweat glands (1). It is mostly reported in Females in their 4th to 8th decade of life, occurring mostly in the scalp and anterior trunk (2). The lesions are usually firm dermal nodules, 5-30 mm in size, with associated thickness, ulceration, or serous discharge. We present a case of a large scalp lesion measuring around 6 centimeters in a female that remained a diagnostic dilemma until excision biopsy was carried out and a histopathological report confirmed that it was a benign Nodular hidradenoma.

Case presentation: We present a case of nodular hidradenoma in a 67-year-old woman who presented with a painful, ulcerated, and oozing solitary nodule on the occipital region for 3 years. On examination, there was a 3x5x5 cm ulcerated bleeding lesion on the occiput, with no associated lymphadenopathy. Investigations revealed a vascular lesion on U/S, and CT head showed that the lesion was not involving the bone. imaging with contrast was not possible as the patient had diabetic nephropathy, and MRI was not possible due to the high BMI (47). Fine needle aspiration was not done due to the vascular nature of the lesion increasing the risk of bleeding. With the increasing difficulty of attaining a diagnosis, we proceeded with a wide local excision of the tumor, which resulted in a 6x6 cm specimen that was sent to histopathology. The histopathology result showed a nodular hidradenoma with negative margins. Once malignancy was ruled out, we reconstructed the wound with a hatchet flap.

Discussion: By presenting this case and review of literature we illustrate the challenge of diagnosing and managing nodular hidradenoma. the tumor has a high recurrence rate for up to 10%, and in some cases could transform into malignancy (3). As such, complete excision of the tumor and close follow up for 12 months is highly recommend.

Recovery After Breast Surgery Predicts Long Term Functional Outcomes

Abstract Presenting Author: Tanusree Dutta

Additional Author(s): Richard Kwasnicki MD, PhD, Nur Amalina Che Bakri, Emmanuel Giannas, Simon Wood MB, BS, Jonathan Dunne, Daniel Leff

Background: Wearable activity monitors (WAMs) have been validated as a sensitive and objective measure of upper limb dysfunction following breast and axillary surgery. This study aimed to use WAMS to characterise short and long-term recovery trends and identify predictors of patient outcomes.

Method: A prospective, observational study was conducted between April 2019 and May 2023. Patients undergoing breast or axillary surgery wore WAMs on both wrists pre-operatively, 2 weeks post-op, and for 72 hours 6 months post-op. Demographic and quality-of-life (EQ-5D-5L/DASH) data were also collected at the same intervals. Recovery trends measured by physical activity (PA) were analysed to investigate differences between procedures. PA in the post-operative period was calculated as a percentage of pre-operative value. Statistical analyses were preformed to identify longitudinal trends and multivariate regression analysis was used to identify predictors of long-term recovery.

Results: In a sample of 38 patients, PA was significantly reduced at both 1 and 2 weeks post-op (mean PA, 58.3% and 70.2% $p<0.001$), however at greater than 6 months patients had on average returned to their baseline (mean PA, 106%, $p>0.05$). On multivariate regression analysis the extent of recovery at 2 weeks predicted long-term functional outcomes ($\beta= 0.752$, $p<0.001$), and quality of life was significantly correlated with physical recovery ($R=0.364$, $p<0.05$).

Conclusion: Recovery in the first 2 weeks after surgery appears to be a strong predictor of long-term outcomes. This information could identify patients needing more support and provides a starting point to investigate the effect of physical activity interventions.

The use of natural language processing to enhance quality assurance in plastic surgery – the largest global study of basal cell carcinoma incomplete excision rates in 34,955 lesions

Abstract Presenting Author: Stephen Ali

Additional Authors: Thomas D Dobbs, Matthew Jovic, Huw Strafford, Beata Fonferko-Shadrach, Arron S Lacey, Namor Williams, William Owen Pickrell, Hayley A Hutchings, Iain S Whitaker

Aim: Using natural language processing (NLP) to extract surgical outcomes from electronic health records is accelerating across disciplines and clinical outcomes research. However, no studies describe its use for determining incomplete excision rates in plastic surgery at scale. The primary aim of this study was to use state of the art NLP techniques to extract margin status from basal cell carcinoma (BCC) histopathology reports at scale with the most common human cancer as a use case. The secondary aim was to use NLP-derived data and undertake a multivariate analysis with updated reporting standards, and provide a contemporary update on the excision margins required to achieve histological clearance.

Methods: We used a novel and validated NLP information extraction model to undertake a rapid multi-centre, pan-speciality, consecutive retrospective analysis of patients with a diagnosis of BCC over a 17-year period (2004-2021) managed with surgical excision at Swansea Bay University Health Board, UK.

Results: It took our model 22 minutes to extract 2,184,309 items of information from 34,955 lesions (15,657 patients) and transform this into a structured format for automated analysis. High agreement rates (98.6%, 93.8%, 99.6%) with strong Cohen's kappa values (0.743, 0.794, 0.732) and significant p-values (<0.001) were observed for completeness of excision, risk status, and specialty of the operating surgeon, respectively. Binary logistic regression (risk status as covariate) demonstrated that plastic surgeons were more likely to get a clear margin when compared to all other specialities. Whether a BCC was high or low-risk was not influential in determining if the peripheral margin was clear ($p = 0.670$). A clinical peripheral margin of 6mm was suitable to achieve a 95% histological clearance rate (95% CI, 0.93-0.98). Depth level 2 had the greatest probability of achieving deep margin histological clearance (97%) at all tumour thickness.

Conclusion: This novel big data approach to automated, rapid and large-scale health data interrogation has a significant role to play in improving patient outcomes and maintaining quality assurance in plastic surgery. This is a scalable and transferrable method that can be deployed across a range of tumour types for benchmarking outcomes in surgical practise.

A qualitative study of patients' lived experiences of free tissue transfer for diabetic foot ulceration

Abstract Presenting Author: Richard Goodall

Background: Free tissue transfer (FTT) for reconstruction of diabetic foot disease (DFD) is an emerging surgical practice that might reduce the incidence of amputation within this patient group. However, FTT is resource-intensive and potentially high-risk, and evidence to support its use in DFD is currently limited. The design of future

quantitative research and clinical services in this area must consider the needs, expectations and concerns of patients. We aim to explore these in this study.

Methods: This qualitative study used semi-structured interviews and an interpretative thematic analysis to explore patients' lived experiences of FTT for DFD and the decision-making process around undergoing treatment. A purposive sampling strategy identified six patients who underwent FTT for recalcitrant DFD between September 2019 and December 2021 in a single centre in the United Kingdom.

Results: Three experiential themes emerged from the analysis. The first theme "negative lived experiences of living with DFD" was identified by patients' consistent recollections of frustration and helplessness with the chronic management of their non-healing ulcers. All patients expressed their fears regarding major limb amputation. The second theme "surgery related concerns" was derived from comments describing fears of peri-operative flap loss and resultant amputation, as well as longer-term issues of post-operative foot cosmesis and donor-site morbidity. The final theme "positive lived experiences following reconstruction" dominated the interviews with patients describing the positive impact the reconstruction had on both their overall life and their diabetic control. All patients expressed that they would go through the process again to obtain their current results.

Conclusion: This qualitative study provides first-hand insight into the lived experience of FFT for DFU, suggesting that FTT for DFU can be positively life changing for affected individuals. Patients' reasons for this experience are explored. These findings can be used to inform future quantitative research investigating the effects on quality-of-life and cost-effectiveness.

Litigation cases after post-bariatric surgery: learn from the past

Abstract Presenting Author: Vincenzo Vindigni MD, PhD

Introduction: Due to the increased frequency of obesity and the number of massive weight loss patients, the demand for body contouring procedures is rapidly growing. Plastic surgery plays a determinant role in improving patients' quality of life, helping them to maintain their weight and shape the high demand of post-bariatric surgeries has led to a significant growth of the number of litigation cases. Even if the surgical mistake still represents one of the main causes of medico-legal issues, many disputes depend on what happens in the postoperative course. We establish the number, the causes, and the impact of medico–legal disputes after 788 post-bariatric surgeries performed in our Plastic Surgery Department between 2015 and 2019.

Materials and Methods: The medical records of 788 post-bariatric surgeries, postoperative complications, and the related litigations cases from January 2015 to December 2019 were collected, analyzed and compared. Any surgical mistake has been evaluated according to patient's complaints.

Results: We performed 380 abdominoplasties, 28 torsoplasties, 65 breast reductions, 99 mastopexies, 94 brachioplasties, 52 thighplasties, 65 liposuctions and five facelifts between 2015 and 2019. Although each patient received an accurate informed consent with the description of all surgical complications, eight patients complained of medical issues and claimed for litigation. The medico-legal claim of all of them was based on an aesthetic outcome instead of a surgical mistake.

Conclusions: Even without an objective aesthetic damage, post-bariatric patients often expect too much from surgery and base the litigation on the aesthetic outcomes. Patients should be clearly informed about the complexity of body-contouring procedures after massive weight loss which should never be compared to aesthetic procedures, underlying the functional role of post-bariatric plastic surgery. Surgeons should always improve the communication with their patients to build a strong and trustworthy relationship. This to deal easily with complications and, in the worst situations, with medico-legal litigations. Finally, we aim to prevent the increase in medico-legal disputes in the future, communicating the achievable surgical results to patients with their original clinical condition always in mind.

ALGORITHM FOR THE TREATMENT OF LOWER EXTREMITY TRAUMA: A MULTIDISCIPLINARY APPROACH FOR LEG SAVAGE

Abstract Presenting Author: Caterina Marra

Additional Author(s): Alessandra Ceccaroni MD, Paola Pentangelo MD, Carmine Alfano MD, PhD

Introduction: This study aims to propose a multidisciplinary approach algorithm. The key concept is combining the reconstruction of soft tissues with the advantages provided by pre and/or post- operative hyperbaric oxygen therapy in addition to any orthopedic and vascular reconstructive treatment.

Materials and Methods: The series of major lower limb traumas was reviewed from 2011 to 2021. Only traumas with involvement of the limb distal to the knee, unilaterally or bilaterally, were selected. The clinical records were acquired and retrospectively analyzed, the epidemiological data and information regarding the trauma modality, type and extent of the defect, the therapeutic approach used, post-operative outcomes and any complications were extrapolated. All patients underwent a sequential therapeutic procedure: debridement; any vascular/orthopaedic treatment; hyperbaric therapy and

reconstructive surgery.

Results: In our retrospective study 36 patients were included; mean age was 38 years. Eighty-nine percent of patients required at least one orthopedic treatment; debridement was performed in all cases and subsequently multiple cycles of hyperbaric oxygen therapy, with an average of 35 sessions. All patients underwent reconstruction with single or multiple autologous skin grafts, in 24 cases other reconstructive techniques were performed. Seventy-four percent of the patients had at least one complication, they were all minor complications, and were treated in an outpatient setting. The average time elapsed between the trauma and the reconstructive surgery was 47 days and the average time between the reconstructive surgery and healing was 45 days. The limb was salvaged in all cases.

Conclusions: A well-defined algorithm for the treatment of lower limb trauma is yet to be found. However, our study highlights that an individualized and multidisciplinary therapeutic approach to the traumatized patient, leads to a good functional outcome, avoiding the amputation of the limb and favoring a more rapid reintegration of the patient into the social.

Girdlestone Arthroplasty and reconstruction with Vastus Lateralis Flap in The Spinal Injured Patient: Our Experience.

Abstract Presenting Author: Marco Castrechini

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Key Words: Decubitus Ulcers, Chronic Wounds, Girdlestone-Arthroplasty, Vastus Lateralis Flap Reconstruction, Spinal Cord Injured Patients, Osteomyelitis

Background: Decubitus Ulcers affects almost 4.7% of hospitalized patients, usually common among spinal cord injured ones with a prevalence rate up to 30%. They're commonly associated with hip and/or femoral involvement as osteomyelitis disease. Arthroplasty by Girdlestone is a technique that excises affected proximal femur and acetabular tissues resulting in a sizeable defect: the vastus lateralis flap has been usefully practiced as a reconstructive option.

Materials and Methods: From October 2012 to December 2022, 30 patients with advanced ulcers or infected hip joint wounds were enrolled and treated with unilateral

vastus lateralis flaps immediately after Girdlestone arthroplasty. Complications and outcomes were identified and scheduled. The mean follow-up was 8 months (range 2-12).

Results: 27 patients were male and 3 were female. The mean age was 50,3 years at surgery time. All patients had spinal cord injuries and all wounds involved hip and femoral bones. Minor wound dehiscence occurred in 26,6 % of the flaps, 8 patients required an additional revisional procedure for hematoma (4) and bleeding (4). No flap failured and complete wound healing was achieved in 32 days on average (range 20-41). Only 1 patient, suffering from leukemia, underwent sepsis and died due to causes not related to surgery.

Conclusions: Surgical revision is strongly recommended for ulcers and wounds involving the femoral and hip bones. A single stage procedure composed by Girdlestone arthroplasty and immediate vastus lateralis flap is a good option to fill the loss of bone substance. The application of a standardized postoperative protocol contributes to the success of the reconstruction.

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OCULONASAL SYNKINESIS: A THERAPEUTIC ALGORITHM

Abstract Presenting Author: Alessandra Ceccaroni MD

Additional Author(s): Carmine Alfano MD, PhD, Paola Pentangelo MD

BACKGROUND: Oculonasal synkinesis is a rare condition characterized by simultaneous contraction of the orbicularis oculi muscle and compressor narium minor. It was first described by Guyuron et al in 1994; Since then, only 21 patients have been identified with this phenomenon in over 6 million rhinoplasty procedures.
The goal of this study is to describe clinical findings and therapeutic approach to correct

oculonasal synkinesis.

METHODS: This research was conducted into two phases. First of all, patients submitted to surgical and non-surgical procedures from January 1 to December 31 2021 were retrospectively analyzed in order to identify oculonasal synkinesis. In the second phase the affected patients were treated by surgical dissection of compression narium minor muscle or by botox injection at the level of this muscle. The choice of medical or surgical treatment was based on severity of contraction.

RESULTS: Overall, we identified 5 cases, all female, affected by oculonasal synkinesis. Of these, three with moderate to severe contraction were treated surgically with dissection of compression narium minor muscle; two with botox injection at the level of the compression narium minor muscle. The latter cases were both affected by a mild oculonasal synkinesis. After a six-month follow-up, the three patients treated surgically showed complete resolution of synkinesis. The patients who underwent botox injection were initially ameliorated, although for a limited time (three months).

CONCLUSIONS: Oculonasal synkinesis is currently considered a rare phenomenon; our data suggest that it is not so rare and underdiagnosis could be a factor. We also propose the following therapeutic algorithm for oculonasal synkinesis: surgical therapy for severe cases and botox for mild to moderate contraction.

Pediatric International Lower Limb Collaborative (INTELLECT-P) Study: A Multi-Centre International Retrospective Audit Of Pediatric Lower Extremity Open Fractures

Abstract Presenting Author: Anna Allan

Aims: To describe the international approaches to the management of lower extremity open fractures in the pediatric population, and their associated outcomes.
Trauma is one of the leading causes of mortality and morbidity in the pediatric population globally. Open lower extremity injuries are common, however available epidemiological data on lower limb trauma is scarce, particularly in the pediatric population.

Methods: The International Lower Limb Collaborative (INTELLECT) study was an international multi-centre retrospective audit supported by the Reconstructive Surgery Trials Network. Investigators in participating centers retrieved demographic and clinical data for patients below the age of 18 years of age who had an open lower extremity fracture treated between 1 January 2017 and 31 December 2018. Primary outcomes were soft tissue infection, deep infection, non-union, and amputation. Secondary outcomes were time to discharge and instances of deep venous thrombosis.

Results: 43 centers in 13 countries contributed with 163 patients, a median of 6 per unit. 104 patients (64%) were aged less than 16 years. 70% of affected individuals identified as male, and median follow-up was 11 (range 0–43) months. The most common mechanism of injury was road traffic accidents (71%). The majority of injuries sustained were open tibia/fibula fractures (80%), with 10% involving open foot fractures and 9% involving open femoral fractures.

One-third of open tibial/fibular fractures that required soft tissue reconstruction were classified as Gustilo IIIB and IIIC. In patients with Gustilo IIIB and IIIC tibial/fibular fractures, there was a higher risk of wound infection (OR 4.16, P = 0.0134, CI 1.35-12.88) and a higher likelihood of deep infection (OR 27.29, P = 0.0248, CI 1.52-489.90). There was no significant statistical association between gender identity, time to antibiotics, time to primary debridement or time to soft tissue closure with soft tissue infection, deep infection, non-union, and amputation. However delay in achieving soft tissue closure beyond 72 h after injury was associated with a greater likelihood of developing soft tissue infection (OR 2.41, P = 0.281) or deep infection (OR 6.69, P = 0.201).
There was a statistical association between age and soft tissue infection and deep infection, with younger age (<5 years) associated with a greater likelihood of developing soft tissue infection (OR 5.21, P = 0.009) or deep infection (OR 8.10, P = 0.009).

Discussion: This is the largest study of its kind looking at pediatric trauma and outcomes. It provides useful information on complication rates for open lower extremity trauma in the pediatric population which may guide both management and informed consent. Whilst there are the limitations of a retrospective design and an over-representation of UK cases, this study helps better understand the prognosis of pediatric lower limb trauma and highlights the challenges of managing these complex injuries.

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Iliac Crest Bone Graft Harvest For Upper Limb Surgery: Improved Donor Site Morbidity With Minimally Invasive Technique

Abstract Presenting Author: Rebecca Nicholas MBBS, Bsc, FRCS

Additional Author(s): Madeline Rocks, Jacques Hacquebord, Rachel Roller, Omri Ayalon, Ali Azad

Introduction: Iliac crest is a widely used donor site for surgical procedures requiring bone graft, such as hand surgical procedures. However, there may be valid concerns regarding the additional surgical site morbidity and the potential to limit ambulation.

A minimally invasive trephine device (Acumed bone graft harvesting system) has become a popular alternative to open iliac bone graft harvest.
We hypothesized that in patients undergoing iliac crest cancellous bone graft harvest for upper extremity procedures, the use of a minimally invasive trephine device would be associated with less donor site morbidity compared with the open harvest technique.

Methods: Patients ages 18-90 years old who underwent iliac crest cancellous bone graft harvest for upper extremity procedures from June 2017 to 2022 were identified.

Medical records were reviewed to determine whether the graft was harvested using the trephine device or open technique.

Subjects were contacted by telephone and asked to complete a verbal survey about their donor site.

Results: The trephine group (n=21) had a mean follow up time of 1.8 years. No major complications were reported. The open group (n=26) had a mean follow up time of 3.1 years. 1 patient developed donor site osteomyelitis and 1 patient sustained an iliac wing fracture.

Fewer patients in the trephine group reported donor site pain compared to the open group (47% in trephine vs. 73% in open groups).

The mean worst pain score was rated 5.6/10 and 7.5/10 for the trephine and open groups, respectively.

A greater percentage from the open group required a walking aid and for a longer duration on average (5% for 7 days in trephine vs. 19% for 31 days in open groups).

Patient satisfaction with the donor site scar was similar between groups (76% in trephine vs. 77% in open groups).

The majority of patients in both groups reported willingness to have bone graft harvest again if it were to be needed (71% in trephine vs. 81% in open groups).

Conclusions: Minimally invasive trephine device harvest of iliac crest bone graft

demonstrated superior patient-reported outcomes compared with open harvest.

Patients who underwent trephine procedures were less likely to have postoperative pain necessitating a walking aid, and of those who did experience difficulty mobilizing, a walking aid was only required for one week.

Overall, the patient-reported morbidity of iliac cancellous bone graft harvest from both groups was acceptable to the vast majority of patients.