PSTM 2022 Global Partner E-Posters

COVID-19-induced Scalp Alopecia Treated Effectively With Stem Cell Serum: A Case Report

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Objectives: Up to 36.7% of symptomatic COVID-19 patients will have telogen effluvium (TE), which refers to diffuse scalp alopecia (Aksoy et al., 2021). With the continuing global pandemic, a review of literature reports unpredictable and incomplete recovery with conventional treatment like Minoxidil (Moreno-Arrones et al., 2021; Rossi et al., 2021) The pathogenesis of COVID-19 induced TE may be more severe than conventional TE as the hair follicles are proposed to be directly damaged by cytokines (Rossi et al., 2021) and thromboembolism (Jose et al., 2020) There is no current standardised treatment for COVID-19 induced TE, hence this case report proposes stem cell therapy as an effective method.

Methods and Materials: We present a patient with severe chronic TE, with no spontaneous recovery after 6 months of hair loss and minimal response to Minoxidil. We commenced monthly applications of stem cell serum (Calecim®).

Results: We present the results of 5 treatments spaced monthly, after which he experienced effective regrowth of scalp hair.

Conclusions: We proposed stem cell serum for patients who have failed conventional treatment or as an adjunct to conventional therapy in COVID-19 induced TE.

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Use of Nasal Tip Polygons as a New Method of Preservation of Structures

Presenting Author: Monica Gladys Martinez

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INTRODUCTION: The aesthetics of the surface of the nose and especially of the nasal tip are created by certain lines, shadows and reflections, with specific proportions and breakpoints. The evaluation of the aesthetics of the nasal surface is achieved using the concept of geometric polygons as aesthetic subunits, both to define the existing deformity and the aesthetic objectives. Nasal tip rhinoplasty, recreating the polygons, results in an excellent definition of the structures that compose it.

MATERIAL AND METHODS: The following aesthetic concepts and surgical techniques have been used in 110 consecutive rhinoplasties performed in the last year. The patients in this series were 80% women and 20% men, with an age range of 17 to 58 years (mean, 30 years), at the Santojanni Hospital. The nose can be analyzed as aesthetic units using the concept of geometric polygons. A polygon is defined as a flat figure with at least 3 sides and right angles. Evaluation of the nasal surface using polygons allows for the identification of shadows and reflections, which are linked to the underlying anatomical structures that can be surgically modified.

RESULTS: It was possible to define these geometric structures in all patients, changing the paradigm of aesthetic and functional rhinoplasty by 100%, thus creating nasal surface polygons that are symmetrical and aesthetically pleasing.

CONCLUSIONS: The nose can be analyzed as aesthetic units using the concept of geometric polygons. A polygon is defined as a flat figure with at least 3 sides and right angles. Evaluation of the nasal surface using polygons allows the identification of shadows and reflections, which are linked to the underlying anatomical structures that can be surgically modified. Performing this surgical technique gives excellent results preserving a greater amount of tissue and without damaging vital structures in the nasal tip.

Breast Reconstruction with Lipofilling in Irradiated Patients

Presenting Author: Monica Gladys Martinez

Co Author: Marcelo Mackfarlane

INTRODUCTION: The side effects of radiotherapy appear in the treating bed and depend on the dose, fractionation, and concomitance or not of other treatments (chemotherapy, surgery). This leads to skin alterations such as acute dermatitis and at the vascular level, involvement of the adventitious layer, which makes immediate reconstruction difficult in the first instance either using breast expanders, prostheses or autologous tissue

MATERIAL AND METHODS: It is a short and effective procedure, which greatly benefits breast reconstruction based on different methods. Significant improvement of the skin and tissue regeneration It is a perfect tool to improve the damage produced locally, as it softens the scarring fibrosis, softens the skin, increases the volume of skin. It helps to improve and correct asymmetries, remodels the breast region. It can be used on breasts with small or large volume.

CONCLUSIONS: The external radiation is a mandatory part of adjuvant therapy to reduce locoregional recurrence in the local control of breast cancer.
In patients irradiated postmastectomy, autologous tissue reconstruction is preferred to implant reconstruction because the latter is associated with a higher rate of postoperative complications. Lipofilling in breast cancer surgery can be performed as an outpatient surgery procedure and has acceptable efficacy in correcting deformities without compromising oncological outcomes. More studies are needed to evaluate the efficacy of lipofilling in the irradiated breast and the possibility of lipofilling as the only reconstructive solution for the irradiated breast.

Comparison of postoperative function of mandibular reconstruction after segmental mandibulectomy between fibular flap, soft tissue flap and reconstruction plate: Propensity score adjusted multivariable regression analysis

Presenting Author: Ryota Nakamura

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Aims: Osteocutaneous free flap is considered as the optimal option for reconstruction after segmental mandibulectomy. However, in some patients, reconstruction plate with soft-tissue flap or soft-tissue flap only is applied as a less invasive alternative. Since these alternative methods tend to be applied to the patients with worse backgrounds, it is not practical to simply compare the outcome of the osteocutaneous flap reconstruction with these alternative reconstructive methods. The aim of this study is to compare the postoperative outcomes that include functional outcome as well as complication rate among each reconstructive methods, with the aid of propensity score

adjustment.

Methods: This retrospective study included 112 patients who underwent free flap mandibular reconstruction between 2013 and 2020. Medical chart was reviewed to collect data including patient demographic, flap type, HCL classification, postoperative Eichner index and postoperative functional outcome. Postoperative functional outcome included MTF score (the total score for the three items of Method of intake, Time, and Food), the oral intake without tube dependent, intake of regular diet and Yamamoto scale (a Japanese standard scale of dietary intake). The comparisons were performed between 3 groups based on flaps used: fibular flaps (fibula group, n=57), soft tissue flap only (STF group, n=21) and soft tissue flap and reconstruction plate (plate group, n=34). Multivariable logistic regression analysis was performed with propensity score used in regression adjustment.

Results: The average age in Fibula group was significantly younger than the other groups (58.5y.o vs 69.7y.o or 68.8y.o, p=0.001). The average Charlson comorbidity index in Fibula group was significantly better than the other groups (1.96 vs 3.03 or 3.48, p=0.001). Significantly less patients in fibula group had other defects than plate group (24.6% vs 76.2%, p<0.001). Significantly more patients in fibula group had better postoperative Eichner index than plate group (73.7% vs 27.3%, p=0.001). Fibula group had significantly better MTF score than the other groups (11.4 vs 9.9 or 8.5, p=0.003). Significantly more patients in Fibula group achieved full oral intake than Plate group (96.4% vs 73.4% p=0.015). Significantly more patients in Fibula group were able to intake regular diet than Plate group (50.0% vs 13.3%, p=0.019). Fibula group and STF group had significantly better Yamamoto scale than Plate group (3.9 or 3.2 vs 1.8, p=0.016).

Multivariable regression analysis with propensity score adjustment showed that use of fibula flap tended to achieve better outcome in three of four functional assessments, without statistical significance; Odds ratio of fibula flap reconstruction was 2.32 (p=0.193) in the multivariable analysis of factors associated with better MTF score, 0.48 (p=0.415) in the analysis of full oral intake and 2.13 (p=0.415) in the analysis of intake of regular diet. In the analysis of better Yamamoto scale, odds ratio of fibula flap reconstruction was 6.36 (95%CI, 0.93 -43.55; p=0.06).

Conclusions: Fibula flap reconstruction tented to achieve better functional outcomes. On the other hand, reconstruction with less invasive alternatives according to patient's status can provide acceptable postoperative result.

A new severity classification of lower limb lymphedema with respect to lymphatic pathway defects in an indocyanine green fluorescent lymphography study

Presenting Author: Akira Shinaoka

Co-Authors: Yoshihiro Kimata

Background: Most protocols for lymphatic imaging of the lower limb lymphedema conventionally inject the tracer material only into the interdigital space; however, recent studies indicate that in the lower limb, there are four independent lymphatic vessel groups (anteromedial, anterolateral, posteromedial, and posterolateral) connected to mainly three lymph nodes1-3. Thus, three additional injection sites are needed for lymphatic imaging of the whole lower limb.
Purpose: To validate a multiple injection protocol designed based on recent studies and show its clinical benefits.

Materials and Methods: Overall, 206 lower limbs (164 lymphedema and 42 control limbs) from 103 subjects (82 patients and 21 control participants) that underwent indocyanine green, fluorescent lymphography with the new injection protocol were registered retrospectively. The new injection protocol visualized four independent lymphatic vessel groups and involved five injection sites marked around the foot along the border between the dorsum and planta. To consider the influence of predictor variables on the degree of severity, multivariable logistic regression models were fit with individual known risk factors. Using a generalized linear model, the area under the curve (AUC) of the conventional clinical model, comprising known severity risk factors, was compared with that of the modified model that also included defects in the posterolateral and posteromedial groups.

Results: Dermal backflow (DB) had high specificity for lymphedema detection, but low specificity for judgment of severity. In contrast, the defect of each lymphatic group retained high specificity for lymphedema detection and severity judgment. Multivariable logistic regression models showed a significant difference for the posteromedial and posterolateral groups. The AUC of the modified model that implemented defects in posterolateral and posteromedial groups was significantly improved compared to the conventional clinical model. Based on the lymphatic vessel group defects, a new lymphedema severity classification (Lymphatic Pathway Defects severity classification: LPad severity classification) was created. Lymphedema of the leg without lymphatic group defect was the mildest stage (stage 0), single defect in the posteromedial or posterolateral group indicated an increase in severity (stage 1), and double defects in these groups indicated even greater severity (stage 2). All lymphatic groups defect was the severest stage (stage 3).

Conclusion: Finding defects in the posteromedial and posterolateral group with the new multiple injection protocol is a significant criterion for judging lymphedema severity.

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Preparation of scaffold-free tissue-engineered 3D cartilage construct for application in facial plastic surgery

Presenting Author: Tomoyuki Ota

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Background: The production of cartilage for facial plastic surgery, such as auriculoplasty or rhinoplasty, through tissue engineering has been improving and some of these engineered cartilage tissues are already being used in clinical practice. One of the main goals of the developments in this field is to control the shape of the cultured cartilage, which has been achieved mainly by embedding autologous chondrocytes in scaffolds. In contrast, the use of scaffolds may have risks, such as deformation due to the resorption and reaction to foreign bodies. Here, we aimed to create the next generation of tissue-engineered cartilage composed only of cells and extracellular matrix without any scaffold using our original cell self-aggregation technique (CAT) (1-3) . In addition, the development of cell sources for allografts, such as human leukocyte antigen-homozygous induced pluripotent stem cells and the development of iPS cell induction technology, are expected to diversify cell sources in this field. We have developed limb-bud-like mesenchymal cells from iPS cells which have a high differentiation potential into cartilage and have incorporated this cell source into the production of tissue-engineered cartilage (4). In this report, we describe the results of the development of next-generation tissue-engineered cartilage at our facility.

Methods and results: A silicone frame and a strut were attached to the culture dish and the region surrounded by the silicone was coated with a polymer that induced CAT. When human pluripotent stem cell (hPSC)-derived chondroprogenitor cells were placed confluently on this coating, ring-shaped cell aggregate surrounding the strut was formed. After incubating the culture in a chondrogenic differentiation medium, a ring-shaped cartilage construct, which had a rich extracellular matrix as confirmed using safranin O staining, was obtained. The cartilage production could be scaled up depending on the size of the silicone frame and, by stacking several ring-shaped aggregates, a cartilage complex fused into one mass was obtained.

Discussion: We succeeded in producing next-generation tissue-engineered 3D cartilage without a scaffold from hPSC-derived chondroprogenitor cells using CAT. In addition to obtaining cartilage with controlled size and shape, CAT can also be used as

a building block and is expected to contribute to the development of new regenerative materials for facial plastic surgery.

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DNA Methylation Profiling for the Prediction of Recurrences and Prognosis in Patients with Diabetic Foot Ulcers

Presenting Author: Sik Namgoong

Co-Authors: Do Yoon Koo, Hyun Jyung Oh, Jeong-An Gim, Seung-Kyu Han,

Background: Diabetic foot ulcers (DFUs) are recalcitrant to healing. However, the molecular mechanism causing this dysfunction is not fully understood. DNA methylation profiles change during the proliferation, differentiation, and development of an organism, resulting in tissue or disease identification. To elucidate the biomarkers for DFU prognosis, we hypothesized that differences in DNA methylation patterns could provide important therapeutic targets in the treatment of DFUs.

Methods: We collected 48 blood samples from 36 DFU patients treated at Korea University Guro Hospital from October 2019 to November 2021. The Illumina MethylationEPIC (850k) DNA methylation microarray was used to determine the pattern between differentially methylated regions (DMRs) in DFU patients with good or poor prognoses. We then selected and visualized the DMRs in the form of heatmaps, and enriched terms associated with these DMRs were identified. By using the DMR list in two processes, Kyoto Gene and Genome Encyclopedia (KEGG) and gene ontology (GO) analysis, gene-concept network, GSEA, and decision tree were performed.

Results: In total, 92 DMRs and 108 DMRs ($|\text{Log2 fold change}| > 0.1$ and $P < 0.03$) were hypermethylated and hypomethylated, respectively. In the good prognosis sample, 69 and 156 DMRs were hypermethylated and hypomethylated, respectively. In the

KEGG analysis, the MAPK signaling pathway was commonly detected as the highest pathway. In the decision tree, MORN1 hypomethylation and NCOR2 hypermethylation were crucial classifiers by recurrence.

Conclusion: Collectively, MORN1 and NCOR2 genes may be used as biomarkers for predicting the recurrences and prognosis in DFU patients. In DFUs, the clues of recurrence and prognosis prediction may be provided through DMRs and the molecular mechanisms related to inflammation.

Clinical Efficacy of Negative Pressure Wound Therapy (NPWT) Monitoring System for Postoperative Flap Management in Diabetic Foot Patients

Presenting Author: Jun Ho Park

Co-Authors: Ji Won Kang, Ji-Ung Park

Background: Various types of flaps are considered as reconstructive options for patients with diabetic foot ulcer (DFU). However, flap reconstruction for DFU treatment is particularly challenging because of the relatively limited collateral perfusion in the distal lower extremity. This study evaluated the efficacy and safety of a novel postoperative monitoring procedure implemented in conjunction with NPWT immediately after flap operations for treating diabetic foot.

Methods: A retrospective analysis was performed on DFU patients who underwent free flaps and perforator flaps from March 2019 through August 2021. The surgical outcomes of interest were the rates of survival and complications. On the third postoperative day, patients underwent computed tomography (CT) angiography to check for pedicle compression or fluid collection in the sub-flap plane. Monitoring time, as well as comparisons between NPWT and conventional methods, were analyzed. Statistical analysis was performed between the two groups.

Results: This study included 26 patients. Among DFU patients, the NPWT group included 14 flaps and the conventional monitoring group included 12 flaps. There was no significant intergroup difference in flap survival rate ($p = 0.83$). In addition, there was no significant intergroup difference in the diameters of perforators or anastomosed vessels before and after NPWT ($p = 0.97$). Compared with conventional monitoring, the novel NPWT monitoring system was associated with a significantly lower mean monitoring time per flap up to postoperative day 5.

Conclusion: Although conventional monitoring is widely recommended, especially for DFU management, the novel NPWT monitoring system investigated in this study enabled effortless serial flap monitoring and was associated with reduced infection risk compared with conventional monitoring. The novel flap monitoring technique was safe

for DFU patients and is a promising candidate for future recognition as the gold standard for flap monitoring.

Median nerve injuries in a tertiary hospital in Uttarakhand

Presenting Author: Vishal Mago

Purpose: The different types of lesions can affect the median nerve at various levels along its long path from the brachial plexus and axilla to the hand. This study was done to evaluate the role of early surgery to repair the nerve and follow up of the patient for sensory and motor recovery. Most of these patients are young laborers who benefit by returning to work and early return to function

Method: This is a retrospective study to evaluate the incidence, course, and site of injuries with recovery patterns in the Department of Burn and Plastic Surgery AIIMS Rishikesh. Demographic details of patients were recorded in a proforma and patients were subjected to x-rays, nerve conduction studies, and high-resolution ultrasound. Operative details were recorded.

Experience: Till date 5 cases of median nerve injuries have been recorded who were operated on with good motor function and sensory recovery. All the laborers returned to work with good motor power and recovery

Summary: Early exploration and repair with sural cable grafts in traumatic transection of median nerves at the forearm yield good results.

Conclusions: Although a strong history can be clinically suggestive of median nerve pathology, there are several modalities that can aid in diagnosis. Surgical evaluation and repair is the norm to promulgate early return of function

Efficacy of Vascularized Submental Lymph Node Transfer Combined With Preoperative Decongestive Therapy and Antibiotics for Early-Stage Lower Limb Filarial Lymphedema

Presenting Author: Bharat Saxena

Co-Author: Vinay Jacob

Filarial lymphedema (FLE) is the commonest cause of secondary lymphedema with endemic prevalence in developing countries. This has been traditionally managed with antibiotics and decongestive therapy (DCT) in early-stage or excisional surgery at late-stage. Results of vascularized lymph node transfer (VLNT) in post-oncological

lymphedema have been encouraging, and it is currently a widely accepted surgical treatment. We advocate that the combined treatment of antibiotics, DCT, and VLNT could produce objective and subjective improvement of early-stage lower limbs FLE. Between January 2019 and January 2020, patients with early-stage lower-limb FLE who underwent VLNT were retrospectively reviewed. VLNT was harvested from the submental region in all patients. Outcomes were assessed using volume improvement, frequency of cellulitis, and lymphoscintigraphy, along with subjective scoring questionnaire. Three males and one female with an average age of 27(range 25-29) years were included. Two patients presented bilateral lymphedema. One patient was lost at three months follow-up and not included in the analysis. Patients showed an initial decrease in circumferential measurements post-antibiotics/DCT of 2074±471cc (39±9%). At a mean follow-up of 12.3±6.2 months, further improvement of limb volume of 2389±576cc (45±10%) was achieved following VSLN transfer. Lymphoscintigraphy demonstrated dye uptake by the VLNT with reduced dermal backflow, and none of the patients had episodes of postoperative cellulitis. Patients gave an excellent outcome on subjective scoring (average score 9±1), returning to their daily activities without wearing compression garments. Our early experience showed that VSLN transfer may represent an effective treatment option in the multi-modality approach to early-stage lower limb FLE.

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Plastic Surgery for Scar Revision

Presenting Author: Ioana Ghiurco

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Introduction: From the desire to improve the way of approaching patients with vicious scars, we aimed through this study to evaluate the patients population that seeks Plastic Surgery for scar revision and their therapeutic approach, in the public hospitals in Bucharest.

Material and Methods: We realized a multicenter, retrospective, analytical study on a lot of 100 patients who were treated for vicious scars between 2015-2020. The evaluation of patients included in the database was achieved by documentation based on the general clinical observation sheets and surgical protocols, comprising the following variables: demographic data of the patients, characterization of scars in terms of age, location, cause, type of treatment and number of days spent in the hospital.

Results: The average age of the patients in the studied group was 38.6 years, with a slight male preponderance of 52% and most frequent from an urban environment (66.25%). Regarding the age of the scar, the average duration elapsed from the causative event to the therapeutic intervention was 55.73 months, the most common location was in the head and neck region (47.41%), being in 39% of patients of post-traumatic cause. We noticed that in 85.23% of cases, the surgery involved a single method of correction, being in 42% of cases incision, partial or complete excision followed by suture, leading to a mean hospital stay of 3.8 days. No standardised protocol for analysing a vicious scar and for decision making was observed.

Conclusions: Patients living with vicious scars frequently have aesthetic, functional and pathological repercussions. The young population is more willing to look for improvements in scars, especially when they are located in visible areas, such as the face and neck. Although there are many treatment suggestions, we lack a protocol to address these cases in current practice.

Bioresorbable Implants in Reconstruction of Critical Size Mandibular Defects

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Objectives: Large mandibular critical size defects are common after radical resections of advanced head and neck tumours. The use of bioresorbable implants for mandibular reconstruction alleviates the risks associated with vascularized bone grafts. The surgeon is free to shape the implant according to the size and shape of the defect, without concern for donor site availability or flap failure. This study evaluates the use of bioresorbable implants in mandibular reconstruction using a porcine model.

Materials and Methods: Seven hemi-mandibular critical size defects (30x20mm) were

created in five male Yorkshire-Landrace pigs - three animals with unilateral defects; two animals with bilateral defects. Defects were created over the inferior mandibular body. These were reconstructed with bioresorbable polycaprolactone-tricalcium phosphate implants (PCL-TCP). A 2.0mm titanium load bearing reconstruction plate with bi-cortical locking screws was used for fixation. The animals were euthanized after three months and hemi-mandibles harvested. The contralateral unoperated hemi-mandibles served as controls. Specimens were evaluated for ossification by gross examination, computed tomography scans and histology. Biomechanical strength was evaluated using a modified three-point bend test, after reconstruction plate removal.

Results: The animals retained normal mastication. There were no systemic complications. Gross examination of specimens demonstrated ossification and union at the implant-bone junctions. Computed tomographic volumetric analysis demonstrated a 24% (range 14 - 27%) ossification of the total implant volume. Histology demonstrated osseous tissue within the implants. Modified three-point bend test demonstrated comparable maximum flexural force between reconstructed hemi-mandibles (median 1652N; range 1250N - 1819N) and controls (median 1105N; range 750N - 1654N).

Conclusion: Bioresorbable implants promote ossification across a critical size defect, with early restoration of mechanical strength. It has the potential to replace vascularized bone grafts as the standard of care for mandibular reconstruction.

Dedifferentiated fat cells in polyglycolic acid-collagen nerve conduits promote rat facial nerve regeneration

Presenting Author: Hiroshi Fujimaki

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Introduction: Polyglycolic acid (PGA) nerve conduits, an artificial biodegradable nerve regeneration inducing tube currently used in clinical practice, are effective in regenerating peripheral nerves. Dedifferentiated fat (DFAT) cells differentiate into various cells including adipocytes, osteoblasts, chondrocytes, skeletal muscle cells, and myofibroblasts, when cultured in appropriate differentiation- inducing conditioned culture medium. This study made a hybrid artificial nerve conduit by filling a PGA conduit with DFAT cells, applied the conduit to a rat facial nerve defect model, and investigated the facial nerve regenerative ability of the conduit.

Methods: Under inhalational anesthesia, the buccal branch of the facial nerve in Lewis rats was exposed, and a 7-mm nerve defect was created. PGA nerve conduits were filled with DFAT cells, which were prepared from rat subcutaneous adipose tissue with type I collagen as a scaffold, and then grafted into the nerve defect sites in rats with a microscope (DFAT group) (n = 10). In other rats, PGA artificial nerve conduits alone were similarly grafted into the nerve defect sites (the control group) (n =10).

Reinnervation was confirmed at 13 weeks postoperatively by a retrograde tracer, followed by histological and physiological comparative studies.

Results: The mean number of myelinated fibers was significantly higher in DFAT group (1606 ± 806) than in the control group (543 ± 478). Myelin thickness was also significantly lager in DFAT group (0.67 ± 0.02 mm) than in the control group (0.43 ± 0.01 mm). Although no significant difference was found in the amplitude of compound muscle action potential (CMAP) between DFAT group (2.84 ± 2.47 mV) and the control group (0.88 ± 0.56 mV), whisker motion was lager in DFAT group (9.22 ± 0.65°) than in the control group (1.9± 0.84°).

Conclusions: DFAT cell-filled PGA conduits were found to promote nerve regeneration in an experimental rat facial nerve defect model.

Deep nasolabial fat lift: A new technic for correction of infraorbital hollowness

Presenting Author: Han-Woong Ko

Co-Authors: Tae-Yul Lee

Background: Correcting infraorbital hollowness is an important procedure for midface rejuvenation. For this purpose, methods to increase volume such as fat grafting and fillers injection have been used. But it would be an ideal way to correct the infraorbital hollowness by lifting the sagging tissue rather than by increasing volume. The objective of study was to introduce a method of infraorbital hollowness correction using deep nasolabial fat lift via lower blepharoplasty

Materials and Methods: Medical records of 142 patients who had undergone midface rejuvenation with lower blepharoplasty between 2013 and 2020 were reviewed. Elevate the skin-muscle flap through a subcilliary incision. Premaxillary space dissection was performed from the arcus marginalis to 2-3 mm below the orbital rim. The periosteum was then transected. From there, a subperiosteal dissection was performed 3-4 mm down to make a periosteum cuff. The palpebral part of the OOM, the tear trough ligament, and the orbital part of the OOM were released. When the dissection was complete, medial and central orbital fat were transposed and placed under the periosteal cuff. The elevated deep nasolabial fat was suspended superolaterally and fixated to the arcus marginalis. Elevated deep nasolabial fat fills the infraorbital hollowness.

Results: Most of the patients were satisfied with the results of the surgery. Infraorbital hollowness was corrected, and Tear-trough deformity and orbital fat bulging were improved. Also Lid-height were shortened. Chemosis (9.2%), transient retraction (2.1%) occurred but self-improved. Re-operation was done for 6 cases (2 patients for cicatrical ectropion, 4 patients for fat retruding)

Conclusions: Deep nasolabial fat lifting is effective to correct infraorbital hollowness with higher patient satisfaction and surgical longevity without serious complications.

Health-related quality of life outcomes of abdominoplasty for post-partum rectus diastasis.

Presenting Author: Siobhan Fitzpatrick

Co-Authors: Nicola Dean, Tamara Crittenden, David Watson, Rosalie Grivell

Background: Post-partum rectus diastasis (RD) has been reported to occur in conjunction with a series of debilitating symptoms and decreased quality of life. To better understand this patient population and their personal context, their experiences should be examined from a qualitative perspective.

Objectives: We aimed to examine post-partum RD in Australian women using qualitative analysis.

Methods: Women who have been diagnosed with post-partum RD were included. Women completed a baseline questionnaire followed by a one-on-one interview with a female researcher via Zoom. Interviews were recorded, transcribed, and analyzed using qualitative content analysis to identify key themes.

Findings: 45 women completed the questionnaire. Women were more often diagnosed with RD by a physiotherapist (49%), than GP (22%) or plastic surgeon (18%). Three in four women (73%) had given birth via caesarean. A third (30%) had twins, and over half (54%) had private health insurance. 25 women completed qualitative interviews. Key themes identified: worsened appearance and functional ability; physical symptoms of back pain, urinary incontinence, and weak core; decreased quality of life; frustration at being told they ‘look pregnant’; a change in how they dress; issues with nakedness and intimacy; avoidance of mirrors; disappointment with health-professionals’ lack of knowledge about RD; a feeling of injustice at funding for abdominoplasty for weight-loss patients; a request for improved post-partum care and education.

Conclusion: This is only the second qualitative analysis of women’s experience of RD worldwide, and the first outside Europe. This provides us with insight into women’s personal context facilitating more holistic treatment.

A Single-Center Cross-Sectional Study Comparison between Quality of Life after Penile Inversion and Sigmoid Colon Vaginoplasty: 15-year-experience in Thailand

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Background: Penile Skin Inversion Vaginoplasty (PIV) and Sigmoid Colon Vaginoplasty (SCV) are both regarded as surgical options for Gender Reassignment Surgery (GRS) to improve quality of life (QoL) in male-to-female (MTF). To our knowledge, no previous GRS studies had compared QoL between PIV and SCV techniques. Thus, this study aimed to compare the differences of QoL in MTF who received PIV and SCV.

Methods: We conducted a cross-sectional study on patients who underwent GRS by PIV and SCV at King Chulalongkorn Memorial Hospital (KCMH) from January 2002 to December 2017. The Thai version of Short-Form 36-Question Health Survey version 2 (SF-36v2) was used to assess QoL through eight health domains and compare between two surgical techniques.
Results: Of the 240 eligible MTF patients who received GRS from 2002 to 2017, 40 patients completed the questionnaires; 30 patients and 10 patients underwent PIV and SCV, respectively. There was no statistically significant difference in the Physical Component Summary and Mental Component Summary of postoperative QoL between the two groups. SCV outperformed PIV only in the Vitality domain ($p = 0.024$) across the eight domains.

Conclusion: In terms of QoL, both surgical approaches may be equitably employed. However, MTF who underwent SCV techniques might achieve better QoL in the vitality domain. Due to the small sample size in this study, larger-scale studies are needed to confirm our findings and compare other aspects of the procedures.

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A novel therapeutic strategy for treating craniosynostosis in Saethre-Chotzen syndrome

Presenting Author: Peter John Anderson

Background: During development, excessive osteogenic differentiation of mesenchymal progenitor cells (MPC) within the cranial sutures can lead to premature suture fusion or craniosynostosis, leading to craniofacial and cognitive issues. Saethre-Chotzen syndrome (SCS) is a common form of craniosynostosis, caused by TWIST-1 gene mutations. Currently, the only treatment option for craniosynostosis involves invasive cranial surgery, which may need to be repeated and has a potential risk serious complications.

Methods: The present study utilized Twist-1 haploinsufficient (Twist-1del/+) mice as SCS mouse model to investigate the inhibition of Kdm6a and Kdm6b activity using the pharmacological inhibitor, GSK-J4, on calvarial cell osteogenic potential.

Results: This study showed that the histone methyltransferase EZH2, an osteogenesis inhibitor, is downregulated in calvarial cells derived from Twist-1del/+ mice, whereas the counter histone demethylases, Kdm6a and Kdm6b, known promoters of osteogenesis, were upregulated. In vitro studies confirmed that siRNA-mediated inhibition of Kdm6a and Kdm6b expression suppressed osteogenic differentiation of Twist-1del/+ calvarial cells. Moreover, pharmacological targeting of Kdm6a and Kdm6b activity, with the inhibitor, GSK-J4, caused a dose-dependent suppression of osteogenic differentiation by Twist-1del/+ calvarial cells in vitro and reduced mineralized bone formation in Twist-1del/+ calvarial explant cultures. Chromatin immunoprecipitation and Western blot analyses found that GSK-J4 treatment elevated the levels of the Kdm6a and Kdm6b epigenetic target, the repressive mark of tri-methylated lysine 27 on histone 3, on osteogenic genes leading to repression of Runx2 and Alkaline Phosphatase expression. Pre-clinical in vivo studies showed that local administration of GSK-J4 to the calvaria of Twist-1del/+ mice prevented premature suture fusion and kept the sutures open up to postnatal day 20.

Conclusion: The inhibition of Kdm6a and Kdm6b activity by GSK-J4 could be used as a potential non-invasive therapeutic strategy for preventing craniosynostosis in children with SCS.

The impact of delay to operation as a prediction for graft loss requiring unplanned second surgery

Presenting Author: Doran Kalmin

Co-Authors: Dale Edgar, Ed Raby, Fiona Wood

Early excision of deep burns is considered the primary factor in reducing the incidence of invasive burn wound infections. Cause for delays in accessing specialist burn centers and to first operation are multifactorial. The Western Australian Model of Care for the State Adult Burns Unit at Fiona Stanley Hospital aims to undertake, in suitable patients, one operation to treat the acute burn wound in its entirety. this model of care, unplanned second surgery is an indication of graft loss. This study identifies the impact of time to first operation and uses this as a marker for incidence of graft loss requiring unplanned second surgery.

A retrospectively analyzed prospective cohort study was conducted between February 2015 to December 2019. Patients were included if they were admitted and underwent at least one skin grafting procedure. A total of 1599 patients were included in the study, 91 of whom underwent repeat grafting procedures. Median time from injury to first operation in patients not requiring repeat grafting was 5 days with an interquartile range of 4 days and a mean TBSA of 3.8% compared with median of 3 days, interquartile range of 3 days with a mean TBSA of 16.3% in patients requiring unplanned second surgery. The mean age of patients requiring repeat grafting is 4.3 years older compared with patients not requiring unplanned second surgery with 7.3% of patients with lower limb burns likely to require unplanned second surgery compared with 2.9% for other areas. In patients undergoing an unplanned second surgery, 23% had a positive wound swab on admission compared with 11.1% that did not require an unplanned second surgery. In this cohort, graft loss unplanned second surgery is not associated with delay to first operation however it is associated with positive swabs on admission, lower limb burns, increased age and higher TBSA. This study provides data that will allow early identification of higher risk patients to reduce their possibility of graft loss.

Experience of direct-to-implant prepectoral breast reconstruction using acellular dermal matrix after robot-assisted nipple sparing mastectomy

Presenting Author: Shin Hyun Kim

Co-Authors: Min Young Lee, Seung Yong Song

Background: Recent advances in acelluar dermal matrix, fat graft, and flap evaluation techniques have made it easier to place the implant in prepectoral plane for the breast reconstruction after the mastectomy. Robotic technology markedly affects the aesthetic outcome in mastectomy compared with conventional nipple-sparing mastectomy. However, no report has investigated prepectoral acellular dermal matrix (ADM)-wrapped prosthetic reconstruction after robot-assisted mastectomy. This study aimed to analyze the novel operative outcomes of breast mound reconstruction followed by robot-assisted

mastectomy in retrospective review

Method: Patients who underwent nipple-sparing mastectomy with a robotic device (Da Vinci Xi) and immediate prosthetic reconstruction prepectorally via an axillary incision from June 2018 to July 2019 were enrolled. Patient characteristics, complications, and satisfaction via BREAST-Q were analyzed. The surgical technique was described in detail.

Results: Thirty-nine cases, including 7 bilateral cases (total 46 breasts), underwent robot-assisted nipple-sparing mastectomy followed by immediate prosthetic implant reconstruction prepectorally. The median patient age was 46.63 years (range: 21–63 years). The mean operation time for each prepectoral breast mound reconstruction using the direct-to-implant technique was 126.55 min. Overall satisfaction of robotic use was evaluated as superior to the conventional reconstruction method using BREAST-Q. Infection was found in six cases (13.3%), and complete nipple loss was found in three cases (6.6%). Severe complications requiring breast implant removal in the surgical technique occurred in three breasts (6.6%). Two cases were due to the coexistence of infection and skin necrosis; in one case, the skin flap had undergone the congestive phase on postoperative day (POD) 3 and required additional surgery to change the expander. Other complications were resolved by conservative care or minor revision.

Conclusion: This report is the first concerning robot-assisted NSM followed by prepectoral ADM-wrapped prosthetic reconstruction. This procedure seems to be the most efficient method and not inferior to other methods. Further prospective research to evaluate oncologic outcomes is warranted.

A 3-dimensional analysis of flap volume change in hemi-tongue reconstruction

Presenting Author: Soo Hyun Woo

Co-Authors: Young Chul Kim, Woo Shik Jeong, Jong Woo Choi

Purpose: An adequate volume of the tongue flap is essential to preserve speech and swallowing functions. However, it is generally known that the volume of the free flap tends to decrease over time owing to various reasons. Especially in hemi-tongue reconstruction, as half of the normal tongue is retained, some functions are maintained; consequently, there are few studies related to the volume of the flap and function. This study investigated the relationship between flap volume change and function after hemi-tongue reconstruction.

Methods and Materials: A retrospective chart review of 26 patients who underwent hemi-tongue reconstruction between 2003 to 2020, was performed. Patient demographic data, postoperative radiotherapy (RT), and data on flap types were collected. The volume of the flap was measured by converting the computed

tomography (CT) and magnetic resonance (MR) images into 3D using the Mimics® software. In addition, speech scores and feeding scores were collected.

Results: The first follow-up CT or MR imaging (T1) was performed after an average of 2.09 months and the second follow-up imaging study (T2) was performed at 16.58 months on average. On average, the T2 volume was 64% of the T1 volume (range 45.75-90.54%). Factors including speech and swallowing functions were compared by dividing the group into a group with a more than average decrease in volume (Group 1) and a group with a less than average decrease in volume (Group 2). In Group 1, there were significantly more cases of postoperative RT than in Group 2 (85.7%, 50.0%, in Group 1 and Group 2, respectively; p=0.049). However, there was no difference in the functional aspects between the two groups.

Conclusion: The present study revealed that the flap volume decreased more when RT was performed. However, there was no association between the degree of volume loss and speech and swallowing functions. Regardless of the group, the loss of function was not severe, probably because the remaining half of the tongue was functioning.

Our experience in breast reconstruction and quality of life

Presenting Author: Adelaida Avino

Co-authors: Daniela-Elena Gheoca-Mutu, Laura Raducu, Cristian-Radu Jecan

Breast cancer is considered to be the second major cause of cancer death in women after lung cancer. Due to a remarkable progress, the treatments against breast cancer became more efficient and less toxic. In addition, the reconstructive procedures after mastectomy have improved significantly the quality of life especially in younger women. The aim of the study was to evaluate the quality of life of patients 6 months after breast reconstruction.
A retrospective study was realized over that involved 125 female patients who underwent immediate or delayed breast reconstruction after curative mastectomy for confirmed breast cancer. The evaluation of the different surgical techniques and postoperative complications were analyzed depending on the stage of the breast cancer. The quality of life after breast reconstruction was evaluated.

Regarding the stage, for the stage I patients, nipple-sparing mastectomy was performed in 41 cases with immediate reconstruction; for stage II, procedure with latissimus dorsi flap and implant was used (38%). Stage III determined a free flap reconstruction (50%). The patient with stage IV had a favorable outcome after reconstruction with latissimus dorsi flap and Becker implant. Axillary lymph node dissection was performed in 95 cases. The most accurate predictor to determine the period between mastectomy and reconstruction is the stage of the disease (50%), followed by the number of invaded lymph nodes (25%).

The patients from the rural area reported that their health in general was much worse than one year ago. The patients with ductal carcinoma reported a serious limitation for vigorous activities, such as running, lifting heavy objects, participating in strenuous sports. 95 patients declared that their general health is good, 20 very good and just 10 women considered it excellent.

Breast reconstruction following mastectomy have an effect on the patient's quality of life. Therefore, there is an increased need to recognize and evaluate the quality of life after post reconstruction.

Dominant lymph drainage patterns in the occipital and parietal regions: evaluation of lymph nodes in patients with skin cancer of the head

Presenting Author: Taku Maeda

Background: The purpose of this study was to evaluate the superficial lymph drainage patterns of primary skin cancers of the head arising from the occipital or parietal region.

Methods: The dominant patterns of lymph drainage were retrospectively reviewed in 8 patients aged 36–85 years with skin cancers in the occipital or parietal region in whom sentinel lymph node biopsy or lymph node dissection was performed at Hokkaido University Hospital between January 1981 and December 2015.

Results: Lymph drainage was mainly to the occipital (6/8, 75%), level II (5/8, 63%), and level V lymph nodes (5/8, 63%). Of the 6 cases with drainage to the occipital lymph nodes, 4 (67%) also had drainage to level V nodes.

Conclusion: The dominant lymph drainage pattern in patients with skin cancer arising from the occipital or parietal region was to the occipital, level II, and level V lymph nodes. Further, lymph tended to drain directly from the occipital region to the level V lymph nodes.

Next-generation sequencing (NGS)-Driven Analysis of Breast Implants: Establishment of a Reference Microbiome Cohort in Clinically Negative Breast Implants

Presenting Author: Jangyoun Choi

Co-Authors: Young Bin YANG, Sungyeon YOON, Deuk Young OH, Bo Young KWON

PURPOSE: A large body of species of microorganisms around the breast implant are known to play a critical role in the formation of periprosthetic biofilms. Biofilms are pointed out to be a cause for capsular contracture and are also speculated to involve in the pathogenesis of BIA-ALCL. Despite vigorous research into the pathophysiology of capsular contracture and biofilm around the breast implant, a 'normal' periprosthetic microbial environment, has not been clearly elucidated. Establishing a list of the microbial cohort in the symptom-free, uncontracted breast implants can be used as a reference pool for differentiating the normal microbiome and the capsulogenic/pathogenic microbiome. Also, comparing the cohort with the microbiota of other anatomical locations such as the skin or the oral mucosa can bring additional insights into the bacterial community around the implant.

METHODS: We examined fifteen breast cancer patients who received tissue expander insertion for immediate, two-stage prosthetic breast reconstruction. The condition of the prosthesis was clinically negative, without signs of infection or contracture. During the second stage of reconstruction, the periprosthetic tissue was harvested during the routine procedure of expander removal, capsulectomy, and permanent implant insertion. We also collected swabs from the periareolar skin and oral mucosa to compare the normal flora of other locations in the same patient. We performed 16s metagenomic analyses from the samples and examined their similarities and dissimilarities.

RESULTS: Bacterial composition at the phylum level showed similarities across different subjects. The most abundant phylum in the periprosthetic environment were Actinobacteria and Proteobacteria, which accounted for over 60% of the total bacterial population on average. The intra-subject similarity between samples of three different anatomical locations, which is the oral mucosa, skin, and periprosthetic tissue was also measured using beta-diversity (Bray-Curtis's method) index. The principal coordinates analysis plot of the beta diversity showed a similar bacterial population between the skin and periprosthetic environment.

CONCLUSIONS: From this analysis, we found out that a clinically non-infectious implant does harbor an abundant bacterial population. Partial overlap of skin and periprosthetic microbiota was found, supporting the skin flora inoculation as the main source of biofilm formation around the implant. But a sizeable cohort of microbiota has not been able to discover its origin, which needs further research. We are further accumulating microbiome data from patients with various clinical features, such as radiation and chemotherapy, obesity, and diabetes. We hope that a larger data will reveal a key list of bacteria that aggravates capsule formation. Ultimately, this will enable a more patient-specific treatment in the pre- and post-operative course, such as a patient-specitic antibiotic prophylaxis, or pre-surgical risk assessment for capsular contracture at the time of consultation.

A novel treatment algorithm for chronic venous ulcers requiring grafting - the negative pressure therapy approach

Presenting Author: Daniela - Elena Ion

Co-authors: Adelaida Avino, Daniela – Elena Gheoca – Mutu, Abdalah Abu – Baker, Laura Răducu, Cristian Radu Jecan

Objective: Venous insufficiency is the second most frequently encountered cause of lower limb ulcer. These slowly healing lesions are notorious not only for the tremendous financial burden on both the public healthcare sytem and society in general by decreasing workplace attendance and productivity, but also for the associated morbidity and impact on the patients' quality of life. The core treatment principles include controlling infection, facilitating wound closure and avoiding recurrence.
This paper aims to explore the efficacy of incorporating negative pressure therapy in the treatment algorithm of chronic venous ulcers requiring skin graft coverage.

Method: We designed a comparative prospective study based on a case-control series of 24 patients admitted to our clinic over a period of 2 years for lower limb venous ulcers evolving for at least 3 months. All patients received targeted antimicrobial therapy and vacuum assisted wound therapy prior to split skin grafting in order to obtain proper granulation tissue. Half of them were subsequently assigned to the study group characterised by the application of a negative pressure wound therapy device over silver impreganted tulle dressing, as opposed to the control group in which exclusive use of silver dressings was employed.

Results: Graft uptake was initially evaluated in both groups at 7 days postoperatively. The study group featured a greater number of fully integrated skin grafts compared to the control group (10 versus 7 respectivey), as well as an increased proportion of graft uptake in the rest of the patients (over 80% of the surface compared to 75%). An additional 5-day course of vacuum assisted therapy lead to complete graft integration for the whole study cohort, whereas the control group required at least 1 or 2 silver dressing changes (2 and 3 patients respectively) before satisfactory graft uptake was observed. The same treatment was applied to already integrated grafts to enhance epithelialization. Thus, we obseved a significant reduction in the duration required for graft integration in the study group (10 days) compared to the control group (12 days).

Conclusions: Venous ulcers exhibit favourable outcomes when negative pressure therapy is applied concurrently with antibiotic therapy and skin grafing. This novel theraphy's versatility allows for preoperative, as well as postoperative use with the result of decreasing the bacterial load, promoting healing and graft integration while shortening hospital stays and decreasing the number of painful dressing changes for the patients.

Changing the Game, Options for Recipient Vessels in Autologous Breast Reconstruction: a Case Series

Presenting Author: Luigi Troisi

Introduction: Although the internal mammary artery/vein (IMA/V) is a common recipient vessel for free flap breast reconstruction, it occasionally necessitates costal cartilage removal and also limits the IMA's future usage. The goal of this study was to show that in breast reconstruction, the thoracoacromial artery/vein (TAA/V) and the perforators of the IMA/V (pIMA/V) can be employed as recipient vessels for deep or superficial inferior epigastric artery perforators (DIEP/ SIEA).

Methods: A retrospective chart review was conducted of a consecutive series of patients at a single institution undergoing DIEP/SIA flap breast reconstruction with the TAA/V or pIMA/V as recipient vessels from July 2020 to March 2022 performed by the author (LT). Patients' medical records were reviewed, and data collected included demographics, type of flap reconstruction, ischemia time, weight of the flap, reoperations and complications. Patient characteristics and outcomes were analyzed and descriptive data are presented as means.

Results A total of 10 patients met criteria (6 TAA/V and 4 pIMA/V), the mean age was 53 (55 pIMA/V vs 51.6 TAA/V), 6 reconstructions were with DIEP (2 pIMA/V vs 4 TAA/V) and 4 were SIEA (2 pIMA/V vs 2 TAA/V). Weight of the flaps has a mean of 730 grams to the pIMA/V group and 622 grams to the TAA/V group, ischemia time was 67.5 min to the pIMA/V group and 55.8 min to the TAA group. One patient in the pIMA/V group had a total flap loss. No other complications were observed.

Conclusion The TAA/V and pIMA/V can be employed as recipient vessels for autologous breast reconstruction; in our hand ischemia times did not differ, also it has the advantage of avoiding costal cartilage resection and conserving the IMA/V for future use.

Migraine Surgery: Our twelve-year experience

Presenting Author: Edoardo Raposio

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. We have twelve years of specific clinical experience, with more than six hundreds of operated patients, that is the largest and most extensive operating casuistry in Europe. 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. This is our surgical approach in the two most frequent trigger sites: the occipital and the temporal. All the procedures are performed in local anaesthesia and without shaving the hairs. In the occipital site, after one horizontal scalp incision, we undermine the tissues to visualize the occipital nerves and vessels. 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. Similarly, in the temporal trigger site, we usually find a dilated branch of the superficial temporal artery in a close relationship with the auriculotemporal nerve. As before, we isolate the nerve and ligate or coagulate the vessel. 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). 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.

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 twelve 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). One unanswered question is: Migraine.

The Neo-Umbilicus in DIEP-Flap Breast Reconstruction

Presenting Author: Sora Linder

Co-author: Hisham Fansa

Objective: While the DIEP-flap has become the gold standard in autologous breast reconstruction due to its favorable tissue characteristics and preserved abdominal wall function, a constant attempt is done to improve the outcome of the donor site. Even if

just a small detail, the umbilicus has a big impact on the overall aesthetic outcome of the donor site. We introduced the neo-umbilicus as standard procedure for the donor site closure. The aim of this study was to assess subjective aesthetic outcome scored by patients and a panel.

Methods: A total of 30 consecutive breast cancer patients were treated during a period of 9 months with a mastectomy and immediate reconstruction with a DIEP flap. In all patients the reconstruction of the umbilicus was done by an immediate neo-umbilicoplasty technique, consisting of a cylindrical fat resection at the new loco typico and fixation of the dermis directly to the rectus fascia.
All patients were photographed in a standardised setting. Subjective patient satisfaction was assessed with a survey consisting of 3 questions, aesthetic outcome was evaluated by an independent professional panel consisting of 3 plastic surgeons.

Results: Twenty-five patients participated in the follow-up study. Questionnaire results demonstrated high patient satisfaction scores. Accordingly overall high panel scores were achieved with the neo-umbilicus reconstructions with high agreement among panel members as judged by a low inter-rater variability. The aesthetic outcome was rated higher in patients with a higher BMI compared to very skinny patients.

Conclusion: The creation of a neo-umbilicus at the donor site after deep inferior epigastric perforator flap breast reconstruction is a quick and safe technique and leads to a superior aesthetic donor site result.

GEOMETRICAL MARKING OF The New Nac: A Technical Tip

Presenting Author: Domenico Marrella

Co-Authors: Roberta Tornambene, Francesco Stagno d'Alcontres

Background: Mastopexy and Reduction Mammoplasty are well-established procedures performed to treat hypertrophic/ptotic breast. During the last century, hundreds of surgeons worldwide described new techniques to manage the two main aspects of this procedure: the skin pattern design and the parenchyma reduction/remodeling. Although this, throughout the broad literature available, as far as we know, there is not a comprehensive and standardized description to draw and mark the new NAC. The aim of this paper is to propose a precise geometrical method to accurately mark the new NAC.

Materials and Methods: By means of digital image drawing, we explain a step-by-step procedure for the new NAC marking. First, the breast meridian is drawn. Second, using the ideal Sternal Notch-Nipple distance, the new NAC is centered on the breast meridian. Third, we mark the lateral margins of the skin pattern resection. Fourth, the new NAC marking is accomplished using our geometrical method. Finally, the skin

pattern design is completed in a “vertical scar” or “inverted T” fashion, according to the choice of the Surgeon. A comprehensive explanation of the procedure is conducted with a clear image for each step.

Discussion: Although a wide range of techniques is nowadays available for Mastopexy and Reduction Mammoplasty, some of the most used are still based on geometrical concepts first devised by M. Thorek in 19221 and then developed by several surgeons 2-5. The evolution and modification of these concepts has led to modern approaches in the management of the skin envelope. To date, the most used approaches are the “inverted T” and “vertical scar” patterns. Freehand drawing of these skin resection patterns is guided by geometrical principles and accurate measurements. This is not valid for the marking of the new NAC. The latter is usually drowned through experience by a senior surgeon only relying on his total length, equal to the areolar circumference. The lack of standardization leads to inaccurate new NAC marking and consequently skin redundancy and malposition, usually not noted until skin closure; this is especially true for young, inexperienced surgeons. The method that we propose eliminates the bias which leads to mistakes in the new NAC marking.

Conclusions: We propose a method to accurately mark the new NAC based on geometrical and mathematical principles for the “inverted T” and “vertical scar” pattern. Standardizing this process leads to a reduction of the possible bias, allowing even inexperienced surgeons to perform a correct marking.

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ISCHIAL OSTEOMYELITIS MANAGEMENT IN A YOUNG WHEELCHAIR BOUND PATIENT-CASE REPORT

Presenting Author: Stefania Mihaela Riza

Co-Authors: Andrei-Ludovic Porosnicu, Ruxandra Sinescu, Ioana Ghiurco

Objectives: Ischial pressure sores are the most common type of sores to appear in paraplegic wheel chair bound patients , and there is always a risk of recurrence despite successful treatment.
The aim of this case report is to present our surgical approach in the management of an ischial pressure sore with underliyng osteomielitis.

Materials: A 40-year-old paraplegic man, with traumatic spinal cord injury due to a work related accident from 20 years ago, developed an ischiatic pressure ulcer with unstable healing after a prolonged admission in the hospital for a femural fracture. Despite the rigorous conservative treatment, he presented with a 2x2 cm chronic skin fistula evolving for about 10 months. CT scans revealed sclerosis and cortical irregularity of the left ischial tuberosity, suggesting a high suspicion for ischial osteomyelitis. Microbiology cultures from an adequate bone biopsy specimen were positive. Treatment implied a series of local surgical debridement, negative pressure wound therapy and the use of broad-spectrum antibiotics.

Results: After 6 weeks of intravenous antibiotic therapy and after negative cultures were achieved, we decided to cover the remaining complex defect with a rotational gluteal musculocutaneous flap in which we divided the muscle from the subcutaneous tissue and used it to cover and fill the bone defect. Full healing was achieved at 3 weeks, without any complications.

Conclusions: It is important to achive good coverage of the defect with a thick flap in order to provide more support and protection in active, young patients, especially in areas with high incidence recurrence rates.

Keywords: pressure sore, ischiatic, osteomyelitis, local flap, wheelchair

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Combined Surgery (Mommy-Makeover) Compared To Single Procedure: A Prospective Study

Presenting Author: Anna Scarabosio

Introduction: Several surgical procedures may be reasonably combined with abdominoplasty, in particular the most common association is with breast surgery (commercially known as “mommy-makeover”). In this study we compare two groups of patients: the first group underwent abdominoplasty alone, the second one abdominoplasty combined with breast surgery. Then, we examined complication rates, functional effectiveness and pre and post-surgery body perception for both groups. We compared the results in order to highlight advantages and disadvantages between

single and combined surgical procedure.

Materials and methods: The study aims to evaluate advantages and disadvantages in mommy-makeover technique compared to conventional abdominoplasty, with particular attention to improvement in quality of life and the patients' body perception. The method used consisted in the administration of questionnaires between 3-24 months post-surgery. These ones included: pre and post-surgery body image assessment using BUT (Body Uneasiness Test); POSAS scale (Patient and Observer Scar Assessment Scale); table for visual perception; evaluation of diastasis-related symptoms; improvement frequency of complication. The final section consisted of a question just dedicated to patients who underwent single conventional abdominoplasty: “If you could go back, would you choose a mommy-makeover rater than only an abdominoplasty?”

Results: The sample analyzed was composed of 37 patients (treatment group = 18 patients, control group = 19 patients). In the pre-post comparisons of BUT-A performed in the individual groups, statistically significant differences were recorded in both groups and for all observed variables. The significance values were all less than 1% ($p < 0.01$). From the comparison between groups
performed on the POSAS scale, no statistically significant differences emerged in the two comparisons performed respectively for the patient’s POSAS and the observer’s POSAS, although it should be noted that the values expressed by patients are higher than those expressed by the observer.

Conclusions: Combined surgery proved not to be inferior in in terms of patient safety. At the same time, the effectiveness in improving diastasis-related symptoms is fully comparable with sigle surgery. Moreover, the treatment group showcases a considerable superiority in terms of body-image perception improvement and overall patient satisfaction.

Reconstruction after resection of hemilaryngeal cancer by prefabrication of trachea with the aim to preserve speech and avoid a permanent tracheostoma. A retrospective analysis of 85 consecutive cases.

Presenting Author: Ernest Schouppe

Co-Authors: Winston Wittesaele, Jan Jeroen Vranckx

PURPOSE: The trachea is an enigmatic organ due to its complex morphology and definitive treatment of defects are challenging. Reconstructive options largely depend on the remaining structural cartilaginous support around the defect. For short tracheal defects, we moved from a 2-stage cartilage-prelaminated radial forearm flap, towards a 1-stage mucosa-laminated flap to restore the hollow mucosa-lined lumen. Alternatives are medial condylar flaps, or cartilage-loaded fascia flaps. For long airway defects there

are no authentic autologous donor tissues available to restore the mucosa-lined elastic cartilaginous framework consistently. When autologous options are not stable over time, the most promising approach for difficult-to-repair long airway defects is tracheal allotransplantation.

METHODS: We treated 10 patients with long trachea defects, using a compatible donor allogenic trachea that was banked for prefabrication into the forearm of the recipient. We developed a strategy that creates a chimera of allogenic and autologous tissues which results in ‘tolerance’ of the vascularized trachea tube and allows for tapering and withdrawal of immunosuppressive therapy.

RESULTS: Today all patients are alive. Further treatments may consist of laser removal of intraluminal scar tissue, bronchoscopy for broncho-lavage and stents. We report the outcomes and determining treatment factors of these 10 patients and define the hurdle stones and opportunities.

CONCLUSION: Restoration of a long-segment circumferential tracheal defect remains an unmet challenge. Future reports on this subject should be required to provide thoroughly documented visual evidence of outcomes to reduce confusion surrounding tracheal replacement and to prevent future scandals like those seen previously in the tracheal regeneration story.

Osseous free flaps in maxillo-mandibular reconstruction: a single-center evolution towards insourced virtual surgical planning and home-made CAD-CAM in 157 case

Presenting Author: Winston Wittersaele

Co-Author: Ernest Schouppe, Jan Jeroen Vranckx

Introduction: Virtual surgical planning (VSP) and computer aided design (CAD) and manufacturing (CAM) of surgical guides and jigs turned craftmanship into precision and enables the surgeon to complement the donor bone osteotomies with the bony resection of the jaw. In recent years, immediate dental rehabilitation became an integral part of VSP. However, outsourced CAD-CAM is expensive and may be no option to many institutions worldwide. We have developed an insourced facility for 'in-house' VSP and accelerated 'home-made' 3D printing of models, jigs and guides.

Methods: We present a consecutive series of 157 cases (2007-2020). In 75 cases (2015-2020) we have used insourced VSP and CAD-CAM for the reconstruction of maxillo-mandibular defects with fibula, iliac crest and scapular angle flaps. Relevant parameters influencing the reconstructive outcome were determined. We have compared these data with 82 previous reconstructions without CAD-CAM (2007-2014). Mann-Whitney U tests and Fisher's exact tests were used to compare continuous and

binary variables between both groups.

Results: The 3-year survival rates were 65.9% (non-CAD-CAM) & 68.1% (CAD-CAM) ($p > 0.05$).
Total operative time for osteocutaneous fibula reconstructions between both groups averaged 641 minutes in non-CAD-CAM (n=53) vs. 554 minutes in CAD-CAM cases (n=44) (p=0.004).
The maxillofacial reconstructive surgical procedures offered optimal compliance to the initially planned CAD-CAM.

Conclusions: In-house VSP and CAD-CAM have evolved into valuable strategies in maxillo-mandibula reconstruction that shorten total operative time, promote precision and allow for occlusion-based planning with quality of life, aesthetic outcome and minimizing donor site morbidity as essential parts of the reconstruction even in high level oral cancers.
This occlusion-driven bony reconstruction has evolved in a 'jaw-in-a-day' approach with a further focus on esthetic outcome with minimal scars and intra-oral anastomosis.
The establishment of a 3D core facility in our Institution with a multidisciplinary ‘shared’ 3Dprinter and equipped with VSP Software allows to self-print the required models and guides in-house to decrease the cost and accelerate implementation.
Patient-specific reconstruction plates are the missing link in our insourced CAD-CAM strategies.

Approach to Nasal Surgical Oncology and Reconstruction – A New Paradigm

Presenting Author: Sydney CH’NG

Background: Tumors arising in the nasal vestibule or mucosal lining of the nose are traditionally resected either full-thickness via an external approach or endoscopically. Such resection either necessitates complex reconstruction with significant difficulties in achieving ideal aesthetic and functional outcomes, or no reconstruction with high likelihood of progressive deformity. For tumors not invading the external skin of the nose, an open rhinoplasty approach aided with nasoendoscopic localization, with/without additional lateral rhinotomy/ midface degloving, enables tumor resection and anatomical reconstruction with the nasal skin envelope preserved, achieving favorable reconstruction outcomes whilst not compromising locoregional disease control.

Objectives: This study discusses the changing paradigm in our approach to nasal reconstruction with emphasis on preservation of the nasal skin envelope when feasible.

Findings: Based on our experience in 262 patients, a new multipronged paradigm in nasal reconstruction is emerging. Long-term follow-up [median 3.0 (range 0.5 – 5.3) years] of the category of patients who have undergone nasal resection via an open

rhinoplasty approach with preservation of the nasal skin envelope, has shown this technique to be not only oncologically sound but reconstructively favorable with none having had local disease recurrence. Reconstructive techniques for this category included ascending helical free flap with/without temporoparietal fascial extension, temporoparietal fascial free flap, radial forearm free flap, inside-out septal mucoperichondral flap, cartilage and composite grafts.

Conclusions: A new paradigm in nasal surgical oncology and reconstruction is warranted. Nasal skin envelope preservation allows cosmetically favorable results in reconstruction whilst not compromising oncological principles.

Development and Validation of a Patient Reported Outcome Measure (PROM) for Midface Oncology in Composite Facial Resection and Reconstruction Patients

Presenting Author: Sydney CH'NG

Background: Facial cancer surgery involving the midface (comprising the lower eyelids, nose, cheeks, and upper lip) can have debilitating life-changing functional, social, and psychological impacts on the patient. Midface symptoms are not adequately captured by currently available validated patient-reported outcome measures (PROMs). The FACE-Q Head & Neck Cancer PROM is oral and aerodigestive tract-centric. PROMs have gained increased interest for individual patient care, quality improvement and uniform reporting of treatment outcomes.

Objectives: The objective of this project is to develop a PROM specific to the midface, which will complement the FACE-Q Head & Neck Cancer PROM.

Findings: The first phase of the PROM development process comprises of identification of salient issues and item generation. In this phase, we recruited fifteen patients who had midface surgery and ten clinicians from various specialties with >5 years' experience treating these patients. Semi-structured interviews were used to explore aesthetic, functional, social and psychological outcomes with specific attention to deficiencies in current tools. Thematic analysis was used to create draft PROM scales with items further refined in group interviews with experts. We identified multiple aesthetic and functional issues related to the eye and nose, as well as specific psychosocial issues faced by patients.
The second phase involves field-testing and validating the PROM in 250 patients and is currently underway at our center. Here, we present preliminary data from the second phase.

Conclusions: This study has generated a novel PROM scale involving aesthetic and functional issues of the eye and nose. This PROM will be valuable in assessing and comparing patient-reported outcomes in midface surgery.

Gross anatomical study of the subcutaneous structures that create the three-dimensional shape of the buttock

Presenting Author: Aya Han

Co-Authors: Koichi Watanabe, Kensuke Kiyokawa, Eiko Inoue, Yoko Tabira, Keishirou Kikuchi, Yuto Haikata, Tsuyoshi Saga

Introduction: Although the gluteal region is one of the most three-dimensionally shaped areas of the human body, how subcutaneous structures are involved in forming its shape has not yet been precisely established. The purpose of this study was to clarify the subcutaneous structures involved in the morphology of the gluteal region and to apply this knowledge to clinical practice.

Methods: Gluteal tissue, including the pelvis, was removed from seven formalin-fixed cadavers. Cross sections of the removed tissues were made in 1.5cm width in five specimen: horizontal section was one case and parallel sections to the long axis of the body (sagittal section in the posterior aspect and transitioning to anteroposterior section in the lateral part) were two cases. The subcutaneous fat was removed under an operating microscope to observe the fiber structure within the subcutaneous fat. The remaining two sides were dissected using a standard technique and the findings compared with the findings in the cross sections. In addition, a similar comparison was done with two soft preserved cadavers.

Results: The superficial fascia of the upper buttocks was found to comprise honeycombed adipose tissue in the superficial layers and relatively large-grained adipose tissue in the deeper layers. In contrast, in the lower buttocks, the superficial fascia was integrated with the gluteal fascia and the subcutaneous fat was composed exclusively of a superficial layer of honeycombed adipose tissue. In the supra-sacral and supra-coccygeal areas, there was little subcutaneous fat and the dermis, superficial fascia, and periosteum adhered and firmly attached to the bone. Near the iliac crest, fibers extended from the deep fascia (gluteal fascia) and the periosteum of the iliac crest to the superficial fascia. Fibers from the iliotibial ligament to the dermis were also identified on the lateral side of the buttock. There were also strong fibers running through the inferior end of the gluteus maximus muscle from the sciatic tuberosity to the dermis immediately cranial to the gluteal groove.

Conclusion: Clarification of the subcutaneous structure of the gluteal region by performing gross dissection enables recognition of structures other than muscle or bone that determine the morphology of the gluteal region. These findings will be useful when performing buttock-plasty and other surgical procedures in the gluteal region.

Experimental study on polycaprolactone scaffold cell-based nasal implant using 3D printing

Presenting Author: Eunsoo Park

Co-Authors: Galina Khan, Dong Gyu Kim, Young Jin Kim, Seung Min Nam

Background: This study was conducted to address the potential of combining porous biocompatible scaffolds with primary cells, autologous diced cartilage in cartilage tissue engineering in the animal model. The purpose of this study is an experimental evaluation of polycaprolactone (PCL) scaffold cell-based nasal implant using three-dimensional printing.

Methods: In this study, we applied hollow PCL cage scaffolds with 200um and 400 um pore sizes. The scaffolds were divided into three groups (n=4 for each group): (1) PCL cage scaffolds loaded with agarose gel and chondrocytes; (2) PCL cage scaffolds loaded with agarose gel and fibroblasts and (3) PCL cages loaded with autologous diced cartilage. In each group, chondrocytes and fibroblasts were seeded into the agarose gel at a density of 5x106 cells/mL.

Results: All implants showed sufficient integration into the surrounding tissue. It was revealed that chondrocytes were proliferated and differentiated better in the “400um” scaffolds than in the “200 um” group. However, pore size of 200 um was optimal for fibroblasts’ proliferation. In addition, the results of our study showed that the use of PCL based scaffolds are able to obtain the desirable stable augmentation effect with almost none of the changes of contour.

Conclusion: In this study, both groups: (1) PCL cage scaffolds loaded with agarose gel and chondrocytes; and (2) PCL cages loaded with autologous diced cartilage demonstrated chondrogenic potential with scaffolds with 400um pore size. The PCL cage scaffolds loaded with agarose gel and fibroblasts demonstrated potential in cartilage tissue formation within the pore size of 200 um.

A Case Report of Toe-to-Hand Transfer in a "Metacarpal Hand"

Presenting Author: Alma - Andreea Corpodean

Co-Author: Georgescu Alexandru

Introduction: The "metacarpal hand" is an injury that involves multiple finger amputations at the level of the metacarpophalangeal joint, or immediately proximal or distal to it with or without accompanying thumb amputations. In 1967 Yang and Gu became the pioneers in using the second toe for thumb reconstruction in humans. Today due to expanding microsurgical techniques the indication and technique for toe-

to-hand transfer procedure continues to evolve from acquired injuries to congenital hand defects. There are various classification systems that take in consideration the level of finger amputation, involvement of the thumb and provides guidelines for reconstruction option. The toe transfer can be performed in a delayed or immediate manner with similar success rates.

Case presentation: We present a case of a 40-year-old male who was involved in an accident implying a table saw and lost all fingers except the thumb from the left hand. The fingers had been amputated at the level of the metacarpophalangeal joint and replantation was attempted without success. A double toe transfer was done using the second and third toes of the left foot to reconstruct the third- and fourth digits using microsurgical techniques. Corresponding tendons and nerves were sutured, and bones were fixed with K-wires. The dorsalis pedis artery was anastomosed end-to-end to the radial artery and the vein was anastomosed end-to-end to cephalic vein.

Discussion: Microsurgical transfer of toe-to-hand can restore acceptable level of function with insignificant morbidity at the donor sites. In our case an important factor was the restoration of hand grip and the ultimate aim was to provide a pattern of tripodal pinch not previously attainable which increased the quality of life. There are a few important principles for free transfer of toe to hand that were respected during our procedure. Success of toe-to-hand transfer is represented not only by survival of the toe flap but also a cumulative outcome in terms of mobile, pain free, stable digit, good sensory feedback and aesthetic appearance. Although free toe transfer techniques continue to evolve, these procedures are lengthy, are technically demanding and require fine microsurgical skills.

Conclusion: The indication for toe-to-hand transfer continues to evolve but it is still a demanding surgery that requires microsurgical skills. Toe-to-hand transfer is a good option of treatment for congenital or traumatic injuries. There are some important surgery principles that should be followed during the procedure, with the transfer success implying a cumulus of outcomes.

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Total Implant Wrapping using Porcine-Derived Acellular Dermal Matrix to treat Capsular Contracture in Breast Reconstruction: A Case-Control Study

Presenting Author: Vincenzo Vindigni

Co-Authors: Franco Bassetto

Introduction: Capsular contracture (CC) is one of the most common complications in breast reconstruction surgery, impairing final result and patients' well-being. The role of acellular dermal matrixes (ADM) has been widely described to treat and prevent contracture. The aim of the study was to evaluate the efficacy and safety of complete implant coverage with porcine-derived ADM in preventing CC, limiting complications. Patients' reported outcomes were evaluated to define the role of ADM in improving sexual, physical and psychosocial well-being and satisfaction.

Materials and Methods: 42 patients who underwent surgical treatment of 46 contracted reconstructed breasts from May 2018th to May 2019th were collected in the two groups (ADM group vs. Control group).

Results: The ADM group showed lower rate of CC recurrence and a higher rate of implant losses and minor complications. A significant difference was observed in red breast syndrome (27.3% in the ADM group vs. absent in control the group) and skin ulceration rates (18.2% in the ADM group vs. 4.18% in the control group). As for patients' perceived outcomes, the ADM group showed a statistically significant higher postoperative Satisfaction of Breast Scale score compared to the control group. In addition, a significant difference was observed in the improvement of Physical Well-Being of the Chest Scale and the Satisfaction of Breast Scale after surgery, in favour to the ADM group.

Conclusion: Total implant coverage with ADM reduces the risk of CC recurrence in breast reconstruction. An accurate patient selection allows minimizing complications improving patient well-being and satisfaction.

Functional and Aesthetic Results of Multiple Regional-Guided Strategies for Benign Symmetric Lipomatosis Staged Treatment: A Case of Madelung Disease

Presenting Author: Madalina-Olivia Radu-Adamesteanu

Co-Authors: Eliza-Maria Bordeanu-Diaconescu, Mihaela-Cristina Andrei, Khalid Al-Falah, Razvan Nicolae Teodoreanu, Cristian-Sorin Hariga, Andreea Grosu-Bularda, Valentin Enache, Dan-Andrei Radu, Ioan Lascar

Background: Benign symmetric lipomatosis, also known as Madelung disease is a rare disorder of the fat metabolism characterized by progressive symmetrical formation of

unencapsulated lipomas around the neck and trunk resulting in cosmetic disfiguration and functional impairment, ranging from peripheral nerve compression, dyspnea, dysphagia, restriction of movement of the cervical spine, while associating hypercholesterolemia, diabetes mellitus type II, hepatic steatosis, hypertension and autoimmune thyroiditis. Since the disorder is incompletely understood and causal therapy is unavailable, surgical removal of fatty masses is the current mainstay of treatment.

Material and Method: We are presenting the case of a 56-year-old patient, with an autosomal dominant inherited Madelung disease, with significant cosmetic disfiguration to the head and neck, admitted in the Plastic Surgery department for mild bilateral facial nerve palsy and right ear hypoacusis due to external auditory canal compression.

The patient is a smoker and chronic alcoholic, suffering of hypercholesterolemia, hypertension, hepatic steatosis, autoimmune thyroiditis, and type II Diabetes mellitus diagnosed with type I Madelung disease in his early forties. He underwent several previous surgical procedures, addressing his symptoms: dyspnea, dysphagia due to trachea and compression; limitation of movement of the neck with acceptable aesthetic and functional results through both open surgical excision (with complete and partial removal of the lipomas), liposuction and combined techniques.

The preoperative MRI investigation of the head and neck revealed large symmetric unencapsulated lipomas originating in the malar fat pad and retro parotidean region, compressing the facial nerve and distorting the external auditory canal, with large caliber blood vessels surrounding them, allowing to assess the postoperative fibrosis associated to previous excisions. The patient was operated with general anesthesia, the lipomas were removed through an extended face-lift incision after facial nerve identification and neurolysis, with preservation of the deep and superficial fat pads. The excess skin was excised, and an active drainage system was placed subcutaneously. The pathologic examination of the specimen confirmed benign fatty tissue. The patient was discharged 5 days later, with improved function of the left facial nerve and slightly improved hearing. He is scheduled to return to the clinic to continue the staged treatment strategy for the right facial nerve.

Summary of results: Madelung disease is a rare disease, with no guidelines regarding the surgical treatment. Several techniques have been described, including radical and limited surgical excision of the suprafascial lipomas, liposuction, and combined techniques, all of them with advantages and disadvantages in respect of functional and aesthetic results. We are presenting this rare case of facial nerve palsy and the long-term results of each of these techniques.

Conclusion: Surgery is the mainstay in the current treatment strategies for benign symmetrical lipomatosis, improving both functional and aesthetic results. A staged treatment plan is essential for patient safety. Understanding the correlation between local anatomy, imagistic studies, clinical signs, and symptoms allows the surgeon to plan and customize the surgery according to the patient’s needs.

Impact of Initial Filling Medium on Postoperative Complications and Expansion Profiles of Subpectoral Two-Stage Expander/Implant Based Breast Reconstruction: Use of Air Versus Saline

Presenting Author: Juyoung Bae

Co-Authors: Kyeong-Tae Lee, Jai Kyong Pyon

BACKGROUND: In two stage-expander-based breast reconstruction, the use of air as the initial filling medium has been suggested to confer clinical advantages over saline as conventional, but this has not been elucidated in a large series. The present study aimed to evaluate the association between different type of materials for initial expander filling with postoperative outcomes by comparison between air versus saline.

METHODS: A retrospective study was conducted for patients who underwent immediate subpectoral tissue expander-based breast reconstruction from January 2018 to March 2021. They were categorized into two groups according to material used for initial filling; saline-filling, which was conducted during the former 22 months consecutively, and air-filling group, for the latter 17 months consecutively. Complications, including mastectomy flap necrosis, and postoperative expansion profiles were compared. Multivariable analyses were performed to identify independent predictors of postoperative complications.

RESULTS: A total of 443 breasts (400 patients), including 161 with air-filled and 282 with saline-filled were analyzed. The two groups had similar baseline characteristics. The air-filled group showed a significantly lower rate of mastectomy flap necrosis; this difference remained significant after adjustment for other variables in multivariable analysis. The rates of other complications did not differ between two groups. When comparing postoperative expansion profiles, the air-filled group showed fewer office visits and a shorter expansion period to complete expansion.

CONCLUSIONS: The use of air for initial expander filling could provide safe and reliable outcomes with reduced patient discomfort during postoperative expansion, and might be an effective alternative to saline.

Experience of direct-to-implant prepectoral breast reconstruction using acellular dermal matrix after robot-assisted nipple sparing mastectomy

Presenting Author: Shin Hyun Kim

Co-Authors: Min Young Lee, Seung Yong Song

Introduction: Recent advances in acellular dermal matrix, fat graft, and flap evaluation techniques have made it easier to place the implant in prepectoral plane for the breast reconstruction after the mastectomy
Robotic technology markedly affects the aesthetic outcome in mastectomy compared with conventional nipple-sparing mastectomy. However, no report has investigated prepectoral acellular dermal matrix (ADM)-wrapped prosthetic reconstruction after robot-assisted mastectomy. This study aimed to analyze the operative outcomes of breast mound reconstruction followed by robot-assisted mastectomy.

Method: Thirty-nine Patients (total 46 breasts) who underwent nipple-sparing mastectomy with a robotic device (Da Vinci Xi) and immediate prosthetic reconstruction prepectorally via an axillary incision from June 2018 to July 2019 were enrolled. Patient characteristics, complications, and satisfaction via BREAST-Q were analyzed (The BREAST-Q Reconstruction questionnaires were completed and returned by 15 patients (32%) in robotic cases calculated 12 months after reconstruction and were compared with those of the control group calculated at an average of 12 months after conventional NSM reconstruction at our institution). An implant wrapped with carved 16 x 16 cm sized acellular dermal mastrix (MegaDerm®) was placed and fixed between the subcutaneous tissue and the pectoralis major muscle.

Result: Thirty-nine cases, including 7 bilateral cases (total 46 breasts), underwent robot-assisted nipple-sparing mastectomy followed by immediate prosthetic implant reconstruction prepectorally. The mean operation time for each prepectoral breast mound reconstruction using the direct-to-implant technique was 126.55 min. Overall satisfaction of robotic use was evaluated as superior to the conventional reconstruction method (done in same institution, surgeon) using BREAST-Q Reconstruction questionnaires. Infection was found in six cases (13.3%), and complete nipple loss was found in three cases (6.6%). Severe complications requiring breast implant removal in the surgical technique occurred in three breasts (6.6%). Two cases were due to the coexistence of infection and skin necrosis; in one case, the skin flap had undergone the congestive phase on postoperative day 3 and required additional surgery to change the expander. Other complications were resolved by conservative care or minor revision, antibiotics or a dressing method.

Conclusion: This report is the first concerning robot-assisted nipple-sparing mastectomy followed by prepectoral ADM-wrapped prosthetic reconstruction. This procedure seems to be the most efficient method and not inferior to other methods. Further prospective research to evaluate oncologic outcomes is warranted.

Effects of prophylactic Lipofilling After Radiotherapy Compared to Non-Fat Injected Breasts: A Randomized, Objective Study.

Presenting Author: Alessandra Ceccaroni

Co-Authors: Ceccaroni Alessandra, Barbato Alfonso, Marra Caterina, Moccia Felice, Poggi Sara, Russo Raffaele, Pentangelo Paola, Rasile Barbara, Losco Luigi, lfano Carmine

Background: Patients who are suffering from invasive breast cancer may require post-mastectomy radiation therapy (PMRT). PMRT improves outcomes in breast cancer patients in terms of locoregional recurrence. Preliminary studies indicate that fat injections reduce post-radiation damage of soft tissue and implant-related complications. The aim of this study was to demonstrate the safety and effectiveness of prophylactic fat injections on radiated implanted breasts.

Methods: The authors randomly assigned 60 female patients to either Group A or B (mean, 53 years). Both groups underwent radical modified mastectomy with immediate expander breast reconstruction; and after radiotherapy, expander substitution with definitive implant was carried out. Group A patients received 3 breast fat injections after radiotherapy. Group B didn't undergo any lipofilling procedure. Skin biopsies were performed in both groups. The specimens were collected in a specific breast area to evaluate adipose tissue thickness. Statistical analysis of the thickness variations was performed with the Wilcoxon's sum test. Disability was assessed according to the LENT-SOMA scale.

Results: The study demonstrated a qualitative and quantitative improvement about tissues after fat injection. This is highlighted by the significant increase in thickness after lipofilling ($P<0.001$). The skin biopsies from the irradiated breasts of patients of group A did not display any dermal fibrosis.

Conclusions: The study, which is based on both clinical and histological findings and is supported by the comparison of a control group with a 1-year follow-up, demonstrated that fat injections reduce tissue radio damage, improving reconstructive surgery outcomes and quality of life.

Is online-learning the future of plastic surgery education? A systematic review and meta-analysis.

Presenting Author: Lisa Ellis

Co-Authors: Alexander SAVAGE, Stephen GOLDIE, Vicky Tobin, Warren ROZEN, David HUNTER-SMITH

Background: E-learning enables learners to participate at a time, place, and location convenient to them. E-learning may be the solution to poor exposure of Australian medical students to plastic surgery and provide an opportunity for efficient education of Australian plastic surgery trainees who need to reserve their progressively limited work

hours for the mastery of practical and clinical skills.

Objectives: This review aimed to establish whether e-learning was a useful resource in increasing knowledge and skills in plastic surgery in medical students and junior doctors.

Methods: A systematic search of the English literature was undertaken on e-learning in plastic surgery education. This study was conducted in line with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines and bias was assessed using the Cochrane Collaboration Risk of Bias Tool.

Results: Nine of 2422 articles met our inclusion criteria. E-learning tools included smartphone/tablet-based applications, computer-based video instruction, multimedia software/animation and online courses and were compared to traditional learning tools. E-learning was significantly better than traditional learning in all five studies which studied a practical skill-related outcome. Of the six studies which compared e-learning with a traditional method using multiple choice question examination as an outcome measure, three demonstrated e-learning was significantly better than traditional learning. A meta-analysis on four articles favoured e-learning for knowledge gain. Risk of bias in included articles was evaluated to be of high or unclear risk.

Conclusion: E-learning is associated with large positive effects compared with traditional instruction for both knowledge gain and practical skill improvement in plastic surgery.

Assessment of Complications of Le Fort III distraction for patients with syndromic craniosynostosis

Presenting Author: Risa Suzuki

Co-Authors: Mariko Noto, Daisuke Sakahara, Takaharu Hatano, Keisuke Imai

Background: Complications following Le Fort III distraction have been reported and include major dysfunctions. This study aims to assess the postoperative course following Le Fort III distraction for syndromic craniosynostosis and to describe the complications and the factors associated with them. Also, we compared both devices based on the clinical results.

Patients and Methods: The study participants were patients who underwent Le Fort III distraction for syndromic craniosynostosis in our hospital between 2001 and 2021. After approval by the ethics committee of our institution (approval number 1403096), a retrospective review was conducted of all such patients. Patients who underwent Le Fort III distraction with either external devices or internal devices were included. Demographic data, diagnoses, surgical-related data, and complications were verified via

medical records. Patients with incomplete medical records were excluded from the study.

Complications occurring post-surgery to the end of the elongation were identified for this study. Complications were graded as major or minor in severity according to the validated Clavien-Dindo surgical classification systems.
For each complication, we analyzed the association with each parameter for both devices.

Statistical Analysis: The F test was administered for population variance, and two-sample t-test, Welch's test, and Fisher's exact test were performed for the 2 different device types, Internal and External. In addition, and multivariate analysis was conducted using a logistic regression model. The significance level was set at 0.05.

Results: External device - Thirty-two patients (20 male and 12 female) were diagnosed with Apert syndrome (n=11), Crouzon syndrome (n=19), and another syndrome (n=2). Mean age at surgery was 11.7 years; the mean operating time was 6.6 hours. The mean blood transfusion volume required was 28.0 mL/kg, while the mean elongation length was 20.0 mm.

One major complication (cranial bone fracture) and six minor complications (five device problems and one dysphagia) were observed. The minor complications were significantly related to the elongation length (p=0.044).
Internal device

Twenty-five patients (14 male and 11 female) were diagnosed with Apert syndrome (n=11), Crouzon syndrome (n=8), and Pfeiffer syndrome (n=6). Mean age at surgery was 10.4 years; the mean operating time was 5.8 hours. The mean blood transfusion volume required was 37.5 mL/kg, while the mean elongation length was 20.0 mm.

Seven major complications (three device problems, two infections, two blind) and eight minor complications (three zygomatic-maxillary greenstick fractures, two local infections, two trismus, one subcutaneous effusion) were observed. The elongation length was significantly related to device problems (p=0.005) and infections (p=0.049).

Assessment of External vs. Internal Devices - There was a significant difference in the complications (p=0.0009) between External and Internal Devices. No significant association was observed in the results with other parameters when external or internal devices were used.

Conclusion: The results of this analysis demonstrate a decreased complication rate with potential for improved outcomes of Le Fort III distraction. However, external devices showed significantly fewer complications than internal devices. In selecting devices, we should take into account the disadvantages of each device, including complications, as well as the advantages.

Experience with NovoSorb Biodegradable Temporising Matrix in reconstruction of complex wounds

Presenting Author: Sally Kiu-Huen NG

Co-Authors: Pelicia Lim, Henry Li, Geoffrey Li, Derek Neoh, Julian Liew

Background: The Novosorb Biodegradable Temporising Matrix (BTM) (PolyNovo Biomaterials Pty Ltd, Port Melbourne, Victoria, Australia) is a fully synthetic dermal matrix that can be used to reconstruct complex wounds. It consists of a 2mm thick NovoSorb biodegradable polyurethane open cell foam covered by a non-biodegradable scaling member. The application involves a two-stage procedure. In the first stage BTM is laid onto a clean wound bed and in the second stage, the sealing membrane is removed, and a split skin graft is applied to the neo-dermis.

BTM has been used to reconstruct deep dermal and full thickness burns, necrotising fasciitis, and free flap donor site in the early phase. Our presentation document the largest case series in the literature where BTM is successfully used to reconstruct a wide range of complex wounds – ranging from hand and fingertips injury, dupuytren's surgery, chronic ulcers, post excision of cutaneous malignancies, hidradenitis suppurativa. We also explore the use of BTM in the radiated wound and assess the effect of radiation on wounds that are reconstructed with BTM.

Methods: Patient who received BTM application cross four centres over 36 months were included. Patients were followed up to assess BTM and graft take, the aesthetics, the return of sensation and complications.

Results: A total of 100 wounds were identified with a range of aetiologies. 90% of the wounds had 100% integration of BTM at the time of sealing membrane removal. 20 wounds had partial graft loss that later healed by secondary intention. In two cases, re-epithelisation occurred with BTM alone without split skin graft. PSOSA scores from patients and an independent surgeon shows favourable aesthetic result.

Conclusion: BTM offer a safe and reliable reconstructive option in challenging wounds that would otherwise require more complex reconstruction.

Microsurgery Training Using the Superficial Epigastric Femoral Flap in Rats

Presenting Author: Florin Vlad Hodea

Co-Authors: Andreea Grosu-Bularda, Madalina-Olivia Radu-Adamesteanu, Razvan Nicolae Teodoreanu, Cristian-Sorin Hariga, Ioan Lascar

Introduction: Skill and knowledge are essential in the field of microsurgery, the practice of entry-level flaps representing a valuable endeavor for each surgeon, before attempting human complex reconstructions. Microsurgery free-flap training is a demanding challenge for aspiring young surgeons, with limited options depending on local and regional programs.

Objectives: The aim of this paper is to present a step-by-step technique microsurgery to super-microsurgery reliable training model on living murine specimens of both harvesting a fascio-cutaneous free flap and transferring it to the cervical area. The aforementioned flap presents a pedicle based on the superficial inferior epigastric vessels at the emergence from the femoral vessels which can be anastomosed to an anterior cervical created defect to the carotid artery end-to-side and to the external jugular vein end-to-end, the epigastric vein presenting a diameter of 0.7-0.8 mm and the epigastric artery a diameter of 0.5-0.6 mm. They can be harvested with stumps of femoral vessels for microsurgical training as an easier entry-level option, or directly for super-microsurgical training.

Material and methods: Wistar rats, weighing 300-400 grams were used, the epigastric flap presenting the advantage of low morbidity with possibility of primary closure, while the donor cervical site represents a recipient area with one of the lowest chances of post-surgical self-mutilation areas in murine models.

Conclusions: This flap represents a reliable living training model, which can develop microsurgical skills involving raising, transferring, and in-setting free flaps, providing ample and valuable knowledge and practice, simulating the challenges of a real-life either microsurgical or super-microsurgical intervention.

Staged facial reconstruction of a complex hemifacial defect secondary to a gunshot wound.

Presenting Author: Rares-Adrian Giurgiu

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Introduction: Reconstruction after facial trauma and especially after a gunshot is a very challenging task, requiring both a good functional and aesthetic outcome.
Gunshot wounds induce severe soft tissue damage, comminuted fractures of the facial skeleton and subsequent bone defects and a high level of wound contamination, frequently associating life-threatening injuries to important or vital organs. In Romania, a country where the use of firearms by civilians is strictly regulated, such injuries are quite rare.

Case presentation: Here we present the case of a 40-year-old man, who suffered a hunting accident through the explosion of his rifle while aiming. The posttraumatic injury resulted in complete loss of the right eye, multiple open comminuted fracture of the right orbital floor and the right temporo zygomatic arch, right maxillary sinus and the right mandibular ramus and facial nerve injury. He had concomitant right thumb laceration with injury to the princeps pollicis artery and flexor muscles.

Method: The patient underwent a multistage facial reconstruction extended over a period of 3 years. In emergency setting, the wounds were debrided, d, the foreign bodies were removed, the right eye was enucleated, and the right thumb was revascularized. The patient had severe facial sequela as a lack of bony structure at the right orbital floor and zygomatic arch, loss of the right eyeball and loss of soft tissue in the malar area. The secondary procedures were performed by a team oral-maxillo-facial surgeons aiming to reconstruct the facial skeleton of the right orbital floor and temporo-zygomatic arch in order for the orbit to accommodate a prosthesis for the right eye. The following procedure was volume restauration to the right malar region, achieved through lipofilling. Postoperative, the patient was admitted for a surgery to correct the remaining sequelae: lagophthalmos due to a partial loss of the orbicularis oculi muscle in the lower right eyelid and lower ectropion at right eye, undergoing a dynamic reconstruction for the lower eyelid, with a sling from the temporal muscle and palmaris longus tendon, in order to accommodate the eyeball prosthesis better and to solve the lagophthalmos and ectropion and improve the aesthetic outcome of the right lower eyelid.

Results: Facial trauma after gunshot wounds can be a very debilitating injury, with dramatic functional and aesthetic impairments, but with a well-structured multistage reconstructive plan, a satisfactory result can be achieved, allowing the patient to have a good functional and social reintegration.

Changes in Muscle Fiber Composition by Selective Neural Innervation for Facial Nerve Paralysis

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Purpose: Facial nerve paralysis interferes with mimic muscle functions. Free muscle flaps are transplanted as new mimic muscles to reconstructzz natural facial movements. The ideal source of neural motor source for transplanted muscle is the healthy side of the facial nerve, which allows resting tonus and synchronous contraction. However, the limited number of regenerative axons often results in weak contraction of the transplanted muscle. To overcome this disadvantage, the masseteric nerve is often used as a neural motor. Although the use of this nerve alone can lead to a rapid and strong recovery of the mimetic function, it is difficult to maintain resting muscle tone. A

dual innervation technique (Sakuma et al. Arch Plast Surg. 2021, 48, 3) is often performed, in which other nerves, such as the hypoglossal nerve or contralateral facial nerve, are added. It was hypothesized that the transplanted muscles undergo a muscle fiber type transition such that the muscle represents more characteristics of the nerve by which it is reinnervated. Skeletal muscle can be classified into slow-twitch (type 1), fast-twitch glycolytic (type 2A), fast-twitch oxidative (type 2B), and intermediate type between type 2A and 2B (type 2X) based on the amount of myoglobin, mitochondria, and glycolytic enzymes. In this study, it was investigated whether the transitioning of muscle fiber types of the rat masseter muscle occurred following innervation from the masseteric nerve to the hypoglossal nerve.

Materials and methods: Ten-week-old rats were used in this study (n = 10). The masseteric and hypoglossal nerves were cut, and the distal stump of the masseteric nerve and the proximal stump of the hypoglossal nerve were then sutured (Suture group). In the other group, the masseteric nerve was cut and cauterized (Cut group). No surgical intervention was done for the control group. Immunohistochemistry and microarray were performed on extracted masseter muscles. The data of microarray were compared with the genes relating to muscle fiber type, as detected by Murgia et al (Skelet Muscle. 2021, 11, 24.). Protein–protein interaction (PPI) analysis was performed and the functional modules of the hub genes were identified.

Results: The superficial layer of the rat masseter muscle is composed of type 2 muscle fibers only. In the suture group, a slight change in muscle fibers' type from type 2A to type 1 was observed. Microarray demonstrated that mitochondrial markers such as Ckmt2, Ndufs7, and Perm1 were upregulated. The Perm1 gene enhances mitochondrial function without any histological changes in the muscle. PPI network analysis illustrated that energy production was activated in mitochondria, suggesting that reinnervation may have caused the muscle fibers to transition to a more oxidative-like state.

Conclusions: To conclude, the muscle fiber composition of the masseter muscle transitioned from glycolytic type (type 2A) to more oxidative types (type1 and type 2B) following a change in neural innervation from the masseteric to hypoglossal nerves. The small sample size is a potential limitation of this study. However, these results might support the validity of the dual-innervation technique for the surgical management of facial paralysis.

THE RAT RETROPERITONEUM DISSECTION MODEL IN MICROSURGICAL TRAINING

Presenting Author: Alex Oradan

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Introduction: Microsurgical training is highly important in the formation of a

reconstructive surgeon. Various models have been described, ranging from low to high fidelity models such as live animal procedures. The rat microsurgical model has been very popular and widely used in microsurgery training courses all around the world. Most rat microsurgical training models focus on the femoral region, due to its relatively straightforward dissection and exposure of the femoral vessels. We aim to emphasise the importance and utility of the aorta training model both for dissection purposes and for the variety of arterial and venous anastomosis configurations possible in this anatomical region.

Materials & methods: The abdominal cavity of the rat is opened, and the retroperitoneum is exposed. Following this, the vessels are dissected by dealing with important anatomical landmarks and key aspects of the dissection are emphasised.

Results: By achieving a good exposure of the main blood vessels, numerous vascular procedures can be performed in this region.

Conclusion: After mastering these procedures, one should be comfortable enough to deal with difficult dissection scenarios, manage and control bleeding as well as be able to perform various vascular anastomosis configurations.

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Spontaneous and dynamic smile restoration after long-standing facial paralysis in adults: a systematic review.

Presenting Author: Jos Velleman

Background: For longstanding facial paralysis, gracilis free muscle transfer (GFMT) is a frequently used free muscle flap to reconstruct the smile. In recent years a dual-innervation technique, consisting of a cross-facial nerve graft (CFNG) along with masseteric nerve (MN) coaptation was introduced. Theoretically, this approach could provide a marriage between strength and spontaneity of the smile. In this systematic review, we investigated the benefit of GFMT with dual innervation in comparison to single innervation focusing on smile spontaneity.

Methods: A systematic review of literature was performed in accordance with the PRISMA guidelines. We searched MEDLINE, Embase and Cochrane library from 1995 to 2021 using well-chosen keywords adapted to each database. Abstracts mentioning surgical treatment of facial paralysis were screened. Eligibility criteria were the use of a GFMT and at least one patient group treated with dually innervated GFMT.

Results: We retrieved 568 records of which 12 studies were found eligible. In the total of 12 studies, 341 patients were treated with GFMT. Of these 12 eligible studies, 5 had only one patient group treated with dual innervation whereas 7 studies included at least a second patient group with either the CFNG (n=3), the MN (n=4) or one of both (n=1) as the single neurotizer. Dual GFMT innervation resulted in a spontaneous smile in the majority of
patients. Dual GFMT innervation showed faster reinnervation compared to CFNG ($p = 0.035$). Dual GFMT innervation showed a trend towards a better spontaneous smile compared to MN, although statistics were lacking. Elderly (> 60 years) treated with dual GFMT innervation had an increase in the number of visible maxillary teeth of three postoperatively compared to an increase of one in juniors ($p = 0.03$). Patients > 50 years showed a trend towards a longer reinnervation time compared to juniors, although statistics were lacking.

Conclusion: Our systematic review demonstrates that dually innervated GFMT results in a spontaneous smile in adult patients. Dual GFMT innervation shows faster reinnervation compared to CFNG and shows a trend towards a better spontaneous smile compared to MN. Dual GFMT innervation is effective in elderly (> 60 years). However, patients > 50 years show a trend towards a longer reinnervation time compared to juniors.
We encounterd a heterogeneity of measuring and reporting. The use of a fully standardized surgical procedure with standardized data collection and outcome analysis, is required for further research.

Face Masks Affect the Global Perception of the Face

Presenting Author: Alessandro Fouarge

Co-Authors: Nicolas Cuylits, Alexis Verpaele

Since the Covid-19 pandemic started early 2020 in Western countries, it became obvious that facemasks would affect the global perception of the face1-5. The way our subconscious features and predicts the hidden lowerface is ill described and often source of disappointment if we consider that, as published by Patel et al., people loose up to 42% of their attractiveness when their facemask is removed1.

Methods: During the Royal Belgian Society for Plastic Surgery Spring Meeting 2022,

five masked patients have been shown to 73 plastic surgeons to whom has been offered, for each patient, the choice for five possible matching lower faces. Those patients are hyperreal avatars that have had only their masked covered part of the face modified.

Results: From the 73 voters, 52 (71,2%) answered all the five patients with a positive trend towards at least two of the five solutions that together convinced at least 59.6% of the audience. Regarding the most selected lower faces, the predominant match ranged from 30.8 to 50% of the voters for each of the 5 patients.

Conclusion: This preliminary study shows that there is a trend in the way our subconscious predicts a lower face when patients wear facemasks. However, the number of voters was small. The purpose would be to present our study and get a much bigger audience of voters through a QR code available in the poster and try to observe a more significant trend to be analysed. Does our mind try to sublime what is hidden?

Case Report: Periorbital infection post-blepharoplasty

Presenting Author: Nikolas Kypros Popa

Co-Authors: Christian Viorel Popa, Alexandra Christian Popa

Case report: Complication after upper and lower eyelid blepharoplaty with severe cellulitis, ectropion and lagopthalmos from a different clinic. Presented to our clinic 28 days post-op. The e-poster includes picture progression of the patient's management. Patient required 3 months of wound maturation and drug therapy. Patient needed lateral canthal tendon reinforcement and full thickness skin graft to correct the complications. Results are also displayed.

Case Report: Costosternal Chondritis After Breast Reconstruction

Presenting Author: Alexandra Christina Popa

Co-Authors: Nikolas K Popa, Christian V Popa

We present the case of a 44-year-old female patient with a new diagnosis of DCIS after core biospies. At a different medical centre an operation of bilateral skin sparing mastectomy was done and tissue expander placement in the same setting. Complications of unilateral persisting pain followed, and patient sought second opinion at our Clinic. Diagnostic methods we used included CT scan, US and fluid aspiration. Suspicion of costosternal chondritis was confirmed intraoperatively and treated with

thorough debridement and antibiotics. Patient recovered well with a good aesthetic result which we outline in our management timeline using dates and photos.

INITIAL EXPERIENCE IN ESTABLISHING A LYMPHEDEMA PROGRAM IN A TERTIARY CANCER TREATMENT CENTER

Presenting Author: Alex Oradan

Co-Authors: Alma Corpodean, Alexandru Georgescu

Introduction: Lymphedema is a chronic and progressive disease characterised by the buildup of protein rich interstitial fluid in the subcutaneous fat, due to the abnormal function on the lymphatic system. Primary lymphedema is a rare congenital condition caused by obstruction, malformation or hypoplasia, whereas secondary lymphedema is more common, and it is caused by the obstruction or destruction of a normal functioning lymphatic system. In developed countries, the main cause of secondary lymphedema is represented by lymph node clearance for cancer, particularly breast and gynaecological tumors. The surgical treatment for lymphedema can be split into excisional and physiological procedures. Excisional procedure aims to remove the excess fibrotic tissue in more advanced stages, whereas physiological procedures, such as vascularised lymph node transfer (VLNT) and lymphatico-venular anastomosis (LVA) restore the lymphatic drainage.

Methods: We present a series of 9 lymphedema cases admitted to our institution in the past two years. All patients suffered from secondary lymphedema due to lymph node clearance (2 upper extremity lymphedema after breast cancer and 7 lower extremity lymphedema after cervical cancer). LVAs were performed in the extremity and limb circumference was measured before and after the surgery.

Results: All patients showed a significant reduction of limb circumference and improvement of quality of life at 3 and 6 months postoperatively.

Conclusion: Recent advancements in supermicrosurgical techniques have made LVAs an effective and minimally invasive treatment for multiple stages of lymphedema. The introduction of a lymphedema program in a cancer treatment center is of a paramount importance in the era of microsurgery.

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Pre-Expansion prior to bilateral DIEP Flap Breast Reconstruction improves breast symmetry and the overall aesthetic outcome

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Introduction: Breast symmetry plays a key role for the aesthetic outcome following reconstructive breast surgery. Due to the constantly improving sensitivity for breast cancer diagnosis, the number of patients that undergo bilateral, autologous breast reconstruction is steadily increasing. Herein, secondary bilateral DIEP flap reconstruction constitutes the gold standard. Despite the presence of two identical flaps in size, significant differences between the tissue of both breasts, challenge the goal of achieving ideal breast symmetry. To improve the aesthetic outcome following breast reconstructive surgery, expander implants are often priorly placed to expand the skin and soft tissue. Thus far, the effect of pre-expansion prior to bilateral breast reconstruction on breast symmetry, form, volume, scarring and overall aesthetic outcome has not been investigated.

Methods: Retrospective single center analysis. Between 2004-2021 a total of 3.360 free flap surgeries were conducted, from which 2.750 were DIEP flap surgeries. Between 2010-2018 a total of 323 patients underwent bilateral DIEP flap reconstruction. Patients that underwent uni- or bilateral modified radical mastectomy (MRM) with or without subsequent pre-expansion prior to bilateral DIEP flap reconstruction were included into the study (n=43 patients). Exclusion criteria were defined as infeasibility or futileness for expander implant placement (e.g., Primary skin sparring mastectomy and implant-based reconstruction), as well as premature abortion of pre-expansion. For the assessment of the aesthetic outcome and breast symmetry the Aesthetic Items Scale (AIS) was utilized. Accordingly, a group of five experienced breast surgeons evaluated 5 standardized photographs for each patient regarding volume, form, symmetry, and scarring utilizing a Likert scale.

Preliminary results: 43 patients are currently being analyzed. Patients were separated

into four cohorts. 21 Patients initially underwent unilateral primary or secondary MRM. Within this group, 12 patients received subsequent unilateral pre-expansion versus 9 patients that did not receive pre-expansion. Further, 22 Patients initially underwent bilateral primary or secondary MRM due to breast cancer disease. Within this group, 11 patients received bilateral pre-expansion versus 11 patients that did not receive pre-expansion. All four cohorts showed a similar distribution regarding age, BMI, radiation therapy as well as chemotherapy. Moreover, there were no significant differences in the occurrence of minor and major complications. The median flap loss rate across all cohorts was 1.8%.
The results of the AIS are currently being evaluated. The preliminary data suggests that breast symmetry, breast form, volume, scarring, as well as the OAR are significantly improved in patients that underwent unilateral pre-expansion following unilateral mastectomy. However, the current data indicates a trend towards no significant differences between patients that underwent bilateral mastectomy with or without subsequent pre-expansion regarding breast symmetry prior to breast reconstruction surgery. The definitive results are expected to be present by the end of June 2022.

Expected conclusion: Unilateral pre-expansion following unilateral mastectomy prior to bilateral DIEP flap breast reconstruction improves breast symmetry, form, scarring as well as the overall aesthetic result. Thus, unilateral pre-expansion might lower the need for - and the burden associated with - secondary surgery intended to optimize the aesthetic result after bilateral reconstructive breast surgery.

Review of free flap breast reconstruction in high-volume hospital in Japan

Presenting Author: Koya Majima

Backgrounds: Since 2017, we have changed our policy to meet all possible demands for a patient, and we started to provide not only implant based breast reconstruction, but various kind of autologous breast reconstruction. Since then, the ratio of breast reconstruction by autologous tissue has increased. Another reason was a problem regarding BIA-ALCL in 2019. In Japan, it is allowed to use only Allergan Textured silicone implants, so after the onset of BIA-ALCL, we completely stopped breast reconstruction by silicone implants until 2020, when other types of implants got permission to use in Japan. And, many patients worry about breast implants because of the risk of BIA-ALCL.
In the beginning, we mainly used the deep inferior epigastric perforator (DIEP) flap. Nowadays, we started to use the profunda femoral artery perforator (PAP) flap for a small to medium size of the breast. This study shows surgical results and trends of surgical methods in our hospital.

Materials and Methods: From January 2017 until December 2021, we had 654 autologous free tissue transfers for 602 cases as breast reconstruction.

Results: There were 433 abdominal free flaps such as superficial and deep epigastric perforator flaps, 136 profunda femoral artery perforator (PAP) free flaps, 25 pedicled latissimus dorsi (p-LD) flaps, eight lumbar artery perforator free flaps.
From 2017 until 2021, the number of breast reconstruction with abdominal flaps were 26, 104, 130, 179, 163, PAP flap were 0, 22, 39, 51, 24 ,p-LD flap were 1, 12, 5, 3, 4, LAP flap were 2, 3, 0, 2, 1 respectively.
The total surgical time was an average 11hours 3minutes in 2017, 7hours 56minutes in 2018, 8hours 23minutes in 2019, 7hours 35minutes in 2020, 7 hours0minutes in 2021 in each.
Whole hospital stay was an average 11.44 days in 2017, 11.23 days in 2018, 11.27 days in 2019, 11.22 days in 2020, 11.08 days in2021. The total blood loss was an average 230 ml in 2017, 195 ml in 2018, 154 ml in 2019, 99 ml in 2020, 102 ml in 2021. Postoperative re-exploration due to micro-anastomosis failure was observed in 39 cases (5%), and six cases (1%) resulted in a total flap necrosis. Whole postoperative re-exploration and total flap necrosis were 0 (0%), 0 (0%) in 2017, 3 (3%), 1 (1%) in 2018, 13 (10%), 3 (2%) in2019, 7 (4%), 1 (1%) in 2020, 16 (10%), 1 (1%) in 2021.

Conclusion: Breast reconstruction with autologous tissue increased till 2020 and showed a minor decrease in 2021, but the rate of reconstruction with autologous tissue increased in a total. Since 2017, we have tried to meet demands for autologous breast reconstruction in patients, so the rate of reconstruction with autologous tissue has increased. The risk of BIA-ALCL also affected the ratio of autologous tissue after 2019. The number of PAP flaps has increased from 2018 to 2020. The PAP flap usage increased initially, but gradually the DIEP flap became the first choice as we recognized the DIEP flap is more suitable for any kind of breast shape and volume. There is no tendency in a p-LD flap and LAP flap. These two flaps were used after primary free flap failure or metachronal breast cancer reconstruction.
Overall flap take rate has kept at around 99%, and the average surgical time, hospital stay, and blood loss were acceptable through this study period. Safe procedures were undergone in our institute.

Improvement in the youthfulness of facial skin after a single treatment with platelet-rich plasma

Presenting Author: Nutthawut Akaranuchat

Co-Author: Natthapong Kongkunnavat

Introduction: Platelet-rich plasma (PRP) is an autologous substance that is widely used to stimulate dermal collagen synthesis. This study aimed to investigate the efficacy of a single treatment of PRP for facial rejuvenation.

Methods: This study was conducted at Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand during August 2020-March 2021. Enrolled patients underwent a single treatment of intradermal injection of 0.1 mL PRP at 30 locations on

the face. Outcomes were assessed using the patient-perceived age visual analog scale (VAS), FACE-Q assessment, and elasticity index (EI) with Cutometer.

Results: Forty patients with an average age of 36.4 years were enrolled. The mean Patient-perceived Age VAS was significantly decreased at 1 month after treatment (-2.71±2.42, $p<0.001$). FACE-Q satisfaction with facial skin was 74.29±14.49, and satisfaction with the outcome was 73.41±16.26 (scale 0-100). The majority of participants reported clinical improvement in skin elasticity although only some EI at a few time points were significantly improved. Participants reported improvement of facial skin starting at 1 week after treatment and continuously enhanced until the end of observation.

Conclusion: A single treatment of PRP injection resulted in facial skin rejuvenation as measured by significantly reduced Patient-perceived Age VAS, FACE-Q assessment, and EI.

Sensory and functional recovery after suprafascial free flap in foot and ankle reconstruction

Presenting Author: Nutthawut Akaranuchat

Co-Author: Natthapong Kongkunnavat

Background: The goals of foot and ankle defect reconstruction include weight-bearing and shearing tolerance, good mobilization, regaining protective sensation, and good contour for footwear fitting. This study reports the outcomes of foot and ankle defect reconstruction with suprafascial free flaps relative to sensory and functional recovery.

Methods: Eleven suprafascial free flaps were performed, which were supra-Scarpa fascial flaps in 7 cases. Sensory recovery was assessed by Semmes-Weinstein monofilament test (SWMT), and functional outcomes were measured using the Foot and Ankle Ability Measure (FAAM) questionnaire at preoperative and subsequent visits.

Results: Eleven cases (age range: 21-83 years, 7 males, mean body mass index: 24.8 kg/m2) were operated and the mean defect size was 109.8 cm2. The anterolateral thigh, medial sural artery perforator, and superficial circumflex iliac artery perforator flaps were used. The mean flaps thickness was 0.8 cm. Average flap harvesting time and operative time were 83.9 and 452.0 minutes. Half of cases achieved 10 g SWMT (2 cases regained baseline sensation) by 6-months post-operation, and all cases regained either 10 g SWMT or baseline sensation within 12 months. Significant improvement in the activities of daily living (ADL) and sports subscales was observed at 3-months ($p<0.05$). Significant improvement in the global function rating scale for both ADL and sports was achieved by 6 months ($p<0.05$). None experienced the recurrent ulcer.

Conclusion: Suprafascial free flap is a good reconstruction strategy for managing complex foot and ankle defects that yields favorable outcomes including adequate protective sensation and significant functional improvement.

A qualitative study on the experiences of women with rectus diastasis

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

Objectives: The AbdomiCARE Collaborative is a group of researchers and Australian plastic surgeons investigating post-partum rectus diastasis, aiming to quantify the health-benefits of abdominoplasty using PROMs.

Methods: We are conducting an Australia-wide cohort study on women with RD undergoing abdominoplasty (surgical group) and women not having surgery for at least 12-months (controls). Inter-rectus distance of >30mm is confirmed on ultrasound. Outcomes include health-related quality of life, back pain, and urinary incontinence assessed by validated PROMs (SF-36, ODI, ICIQ-UI SF). Online questionnaires are administered via REDcap at baseline (pre-operatively), and then 3, 6, 9, and 12 months (post-operatively). Ethical approval has been granted from Southern Adelaide Clinical Human Research Ethics Committee.

Findings: 101 women are enrolled (26 surgical, 75 controls). Recruitment is ongoing. There are 23 plastic surgeons contributing to this study in 9 major Australian cities. Three-month follow up data will be available by October 2022.

Implications: This Australia-wide cohort study aims to quantify the benefit of abdominoplasty on back pain, urinary incontinence, and health-related quality of life of women with RD. Results from this study will potentially provide evidence to support increased access to abdominoplasty for women with symptomatic RD.

Autogenous costal cartilage is a favorable choice for nasal reconstruction and aesthetic rhinoplasty

Presenting Author: Sanathorn Ratanapoompinyo

Co-Authors: Kidakorn Kiranantawat,

Background: Autogenous costal cartilage becomes favorable choice for nasal reconstruction and complicated aesthetic rhinoplasty, as it provides abundant cartilage resource, sufficient for most patients. Compared to alloplastic material, costal cartilage grafts have less severe adverse effects, such as infection or extrusion. However, warping remains major disadvantage of costal cartilage graft. Over decades, plastic surgeons explored many techniques to minimize the warping effect such as balanced cross-sectional carving, concentric carving, oppositional suture, etc. Our study focuses on which of the cutting planes results in least warping.

Materials and Methods: Two hundred and five costal cartilage grafts were cut from 10 fresh cadavers in 3 major planes, anteroposterior, cephalocaudal and parallel to synchondrosis plane. These 3 major planes were divided into grafts from central and peripheral portion and each subgroup was divided into 3 thickness, 1, 2 and 3mm. Warping angle of all grafts were compared at different timing (immediate, 30 minutes, 1 hour, 1 day, 1 week and 1 month) after cutting.

Results: Grafts had maximum warping at 30 minutes and some grafts continued warping over time even at 1 month. From 30 minutes until 1-month, cephalocaudal plane warped more than anteroposterior and synchondrosis plane significantly. Anteroposterior had the lowest warping angle, however there was no statistical significance. If consider each thickness, 1 mm thickness cephalocaudal plane warped more than synchondrosis plane significantly at 30 minutes to 1 month and synchondrosis plane had the lowest angle. For 2 mm thickness, cephalocaudal plane warped more than other planes significantly at 30 minutes to 1 month. For 3 mm thickness, cephalocaudal plane warped more than anteroposterior plane significantly from 30 minutes to 1 month and anteroposterior plane warped less than synchondrosis plane from 30 minutes to 1 hour. Both 2 mm and 3 mm thickness, anteroposterior plane had the lowest angle. Grafts from central portion warped less than peripheral portion, even central cephalocaudal group warped more than peripheral anteroposterior and synchondrosis group, but there was no statistical difference.

Conclusions: Cutting in cephalocaudal plane has the highest warping angle. Thicker than 3 mm cephalocaudal grafts, thin anteroposterior and parallel to synchondrosis grafts yield better results if surgeons need straight grafts. If surgeons need curvy cartilage, we suggest cutting in cephalocaudal plane. We suggest placing cartilage in normal saline and waiting 30 minutes for maximum warp.

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Follow-up of a Reconstructive Surgery Using a Local or Distant Flap

Presenting Author: Danciu Razvan

Co-authors: Radu Jecan, Raducu Laurau

Objectives: The objective of the study is to present an easy and accessible instrument that, used in current medical practice, brings considerable benefits in the planning and follow-up of a reconstructive surgery using a local or distant flap. The thermal chamber has a temperature difference detection capability of 0.05 degrees Celsius, which allows areas of potential tissue injury to be identified before they become clinically visible. The advantages are multiple, as it is a cheap, indirect, non-invasive method that allows real-time and instantaneous data acquisition.

Methods: This presentation shows a series of cases demonstrating the utility of using the thermal camera in choosing the optimal operative plan, verifying it intraoperatively and monitoring the evolution to prevent complications by capturing pre, intra and postoperative images. The images obtained must be medically relevant, so for their acquisition we propose a standard protocol related to environmental conditions and patient positioning, according to international guidelines. Data processing and interpretation must be done by trained medical personnel, but, in the current age of technology, we also propose the possibility of realizing an artificial intelligence algorithm, currently under development in our clinic, capable of detecting predictions based on previously "learned" images.

Results: The results obtained in the form of images can be exploited according to our needs. The identification of perforating arteries allows the planning of a personalized flap and increases the chance of survival. Intraoperatively, we assess the status of the arteries and flaps following surgical injury. The evolution of the flap is carefully monitored, with a critical period of 48 hours, and temperature changes accurately detected by the machine will alert the doctor to possible risks such as venous congestion, ischaemia or tissue necrosis and local infection.

Conclusions: The thermal camera is a useful and easy-to-use tool that guides the

physician through all surgical steps, with the ultimate goal of achieving superior functional results.

SINGLE DOSE VERSUS 24 H ANTIBIOTIC PROPHYLAXIS IN REDUCTION MAMMAPLASTY: PRELIMINARY RESULTS FROM A RANDOMIZED CONTROLLED TRIAL

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PURPOSE: There is evidence on the benefits of using prophylactic antibiotics in reduction mammaplasty.1,2 However, duration of antibiotic prophylaxis remains a point to be clarified. This trial aims to compare the influence of the use of prophylatic antibiotics as a single dose or for 24 hours on surgical site infection (SSI) rates following reduction mammaplasty.

METHODS: This is a randomized trial of non-inferiority, triple-blind (patients, surgical team, and outcome assessor), with two parallel groups. Breast hypertrophy patients, with reduction mammaplasty already scheduled, will be enrolled. Sample size calculation resulted in 146 patients, 73 per group. Patients were randomly allocated to antibiotics group, that received 1g of cefazolin intravenously during the induction of anesthesia and each 6 hours, for 24 hours, or to placebo group, that received 1g of cefazolin intravenously during the induction of anesthesia and intravenous saline each 6 hours, for 24 hours. None of the patients received antibiotics after hospital discharge. Patients were followed-up weekly for 30 days regarding SSI, according to The Centers for Disease Control and Prevention criteria.3 The sudy protocol has been published.4 Trial registration: Clinicaltrials.gov NCT04079686. RESULTS: The COVID-19 pandemic caused a significant delay in the inclusion of patients, as it is an elective procedure. Thus, we present the results from 72 patients, who were enrolled by March 2022. Median values for age were 35 years, body mass index 25.7 Kg/m2, breast weight resected 990g and duration of procedure 220 minutes. One patient was excluded at the 2nd week of follow-up due to tonsillitis that required antibiotic therapy. All the others completed the follow-up. Minor complications (small dehiscence, nipple epidermolysis) were observed in 10 patients (14%). Three patients (4.2%) had SSI. All were classified as superficial incisional SSI and were successfully treated with oral antibiotics without the need for additional interventions. It is not yet possible to know which group these patients were allocated to, as the allocation will only be revealed after the inclusion and follow-up of 146 patients.

CONCLUSIONS: The duration of antibiotic prophylaxis after breast reduction is still a point to be clarified, and this trial may provide evidence to support clinical practice.

Unfortunately, the COVID-19 pandemic caused a delay in acquiring the final data.

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Systematization of the Incisions in Nipple-Sparing Mastectomy

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Purpose: Nipple-Sparing Mastectomy (NSM) is a consolidated technique. Its indication is usually limited by breast size, due to difficulty repositioning the Nipple-Areola Complex (NAC) and treating excess skin in large breasts.1,2 The challenge in these cases is to maximize the aesthetic result.3, 4 This study compare the incisions on nipple sparing mastectomies and suggest a systematization for the planning of the incisions in accordance with breast size and NAC position.
Methods and materials: Evaluation of patients submitted to mastectomies with NSM and Direct-to-Implant (DTI) reconstruction. Six different types of incisions were studied.

Experience: The total sample included 157 breasts. The minimum follow-up time was 1 year.

Results: The most-frequently performed incisions were the horizontal periareolar sickle incision with 48.4%, followed by the oblique periareolar sickle incision with triangular resection with 15.9%. The most common complication was excess skin in 26.1%. We were able to see that the horizontal sickle incision can be used in most cases and is associated with good results in medium-sized breasts. Large breasts tend to have worse results with this incision and this fact is correlated with the large excess of skin that remains after the first stage of reconstruction. The use of incisions that allow skin removal-oblique periareolar sickle incision with triangular resection (incision 4) and

oblique periareolar sickle incision with sickle resection (incision 5) produced the best results in large breasts, which enabled the treatment of excess skin, better shaping of the breast and repositioning of the NAC, significantly reducing, or avoiding the second surgical step. These two types of incisions also prevented the addition of scars on the breast in the second surgery, by allowing the same incision to be converted into inverted T-type scars, when necessary.

Conclusions: Thus, we achieved our goal in understanding the dynamics of the incisions: which incision should be recommended for which type of breast and how to obtain the best possible result with fewer complications, even when performing this surgery on large breasts.

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Complex wound layer treated with combination of fat grafting, platelet-rich plasma and negative pressure therapy

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Introduction: Complex wounds are still a challenge to surgeons, even despite available technologies, such as negative pressure therapy (NPT), fat grafting and biological matrices. (1)
The fat grafting over complex wounds has been increasingly cited in the medical literature, due to the potential tissue regeneration stimulation by a composition of adipose-derived stem cells. (2, 3, 4) Additionally, the benefit of NPT individually is well known in the medical literature; while the association of NPT and fat grafting has

demonstrated in few publications an early cover of the wound, cell proliferation, neoangiogenesis and maturation of functional blood vessels. (3) Furthermore, the association of fat grafting with platelet-rich plasma (PRP) has been studied to improve the retention of the fat grafting. (4) Studies show that fat grafting alone can have until 80% loss in long term. (4) Some authors demonstrated the impact of the association between NPT or PRP with fat grafting in optimizing the healing result. (3, 4) Thus, we associate three healing potentials to improve the layer of a complex wound, fat grafting, PRP and NPT.

Purpose: The present study aims to report a combination of technologies in a lower limb complex wound caused by electric burn injury.

Experience and results: The related patient was victim of high voltage electrical burn injury with current input in left hand and output in the left foot. Evolved with extensive burn on medial face of the left lower limb. Submitted to many surgical debridement approaches and in each procedure increasing devitalized tissues were found, with deep noble tissue exposure, such as tendon without paratendon and bone without periosteum.
After 5 surgical debridements, he was submitted to fat grafting on hemostatic sponge with sterile absorbable gelatin and PRP, in addition to NPT in the left leg. Changed the NPT twice before being submitted to a free flap of large dorsal on the wound in left foot, with notable improvement in vitality of exposed tissues.

After 22 days of the free flap, with satisfactory evolution of the wound, the patient was discharged from hospital and with multidisciplinary follow-up. Ambulation was maintained without major physical limitations, with the preservation of the member and wound with adequate coverage.

Conclusion: The approach with fat grafting, PRP and NPT did not prevent a surgery of greater complexity like the free flap. However, this approach allowed that a wound initially poor in vascularization could receive a flap of large dorsal without long-term necrosis.

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RISK FACTORS ASSOCIATED WITH POSTOPERATIVE COMPLICATIONS AFTER REDUCTION MAMMOPLASTY: A RETROSPECTIVE STUDY

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Reduction mammoplasty is a surgery that is highly performed to improve the consequences of breast hypertrophy, and patients commonly present physical symptoms such as back pain and psychosocial problems [3]. There are countries that have demonstrated that breast reduction for women with symptomatic breast hypertrophy is cost-effective to improve their health-related quality of life, and this procedure is one of the five most performed aesthetic surgeries in Brazil, according to the Brazilian Society of Plastic Surgery. The risk factors for the development of postoperative complications, although well studied, has not yet been identified [3]. Some variables, such as preoperative body mass, presence of comorbidities, age, suprasternal-nipple distance, weight of resected tissue and type of object, may be associated with the presence of postoperative complications [1,2], and were studied in the present research.

The objectives of this study were to carry out an epidemiological assessment of patients undergoing reduction mammaplasty and to verify the main factors with the incidence of complications in the early (first 30 days after surgery) and late (after 30 days) postoperative period, taking into account considering that the study of risk factors offers an opportunity to make changes in the variables related to the incidence of complications and, consequently, improve the long-term outcome of patients. The study was approved by the ethics committee

The present research performed a retrospective study including patients submitted to reduction mammoplasty in the period between January 2018 and December 2020. In this period, there were performed a total of 272 surgeries classified as mammoplasty. Patients undergoing reduction mammoplasty and mastopexy without breast implants were included in the study, totaling 58 patients, which were included in the research. All patients included in the study received surgical treatment with the Wise technique (inverted T), had a suction drain postoperatively, in addition to receiving antibiotics at anesthetic induction and after for another 7 postoperative days.

The mean age of patients was 35.88 years, with a median of 37.5. Of these, 13 patients (22.41%) had comorbidities. The type of pedicle most commonly performed was the inferior in 40 cases (68.97%), followed by the superomedial pedicle in 7 cases (12.06). 58 patients (31.03%) had early postoperative complications, 3 had late postoperative complications (5.17%) and 1 patient had both early and late postoperative

complications.

When studying the risk factors related to the incidence of postoperative complications, it was observed that age > 50 years did not increase the incidence of early (p=0.67) or late (p=0.62) complications, nor was there any an age above which there was a higher incidence of complications (p=0.21). BMI proved to be a factor that increased the incidence of early postoperative complications (p=0.04), as well as the greater weight of resected tissue (p<0.0001) and longer surgical time. (p<0.0001). The greater weight of resected tissue also increased the incidence of postoperative complications (p=0.03). The longer operative time increased the incidence of early postoperative complications but did not increase late complications (p=0.42).

In a study carried out with 51 women who underwent reduction mamoplasty with a mean age of 40 years, complications occurred in 32% of patients 30 days after surgery [3]. Similarly, in the present study, an incidence of early postoperative complications of 31.03% of the patients was observed, the most common being dehiscence of the surgical wound in the inverted T region, the area of greatest tension, in 15 of the 18 patients with early postoperative complications (83.33%).

Adipose-derived mesenchymal stem cells and amniotic membrane for the treatment of experimental radiodermatitis

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Radiodermatitis is an acute cutaneous inflammatory reaction to ionizing radiation exposure, including nuclear radiation accidents and tumor radiotherapy.1 it is estimated that 85%–95% of tumor patients have developed radiodermatitis in varying degrees of severity.1 However, even nowadays the treatment of this cutaneous disorder is still a challenge. Potential candidates for use in regenerative medicine and the treatment of radiodermatitis are human amniotic membrane (HAM) and adipose-derived mesenchymal stem cells (ADSCs). Amniotic membrane, the innermost layer of the placenta, has wound healing properties probably due to its production of growth factors, cytokines, and other bioactive molecules.

2 Furthermore, ADSCs has the potential to differentiate into keratinocytes, fibroblasts, and other skin components. ADSCs also secrete a rich secretome of paracrine action containing cytokines, growth factors, and chemokines, which make these cells candidates for skin repair and regeneration. 3 The objective of this work is to evaluate the rate of skin wound closure caused by experimental radiodermatitis after treatment with human amniotic membrane alone or enriched with adipose-derived mesenchymal

stem cells. To achieve this goal, male Wistar rats aged 6 months and weighing an average of 500 grams were subjected to irradiation of their left hind legs with an Electron Accelerator receiving a single dose of 85 Gy. After 30 days, the animals were divided into three groups, according to the treatment received after the measurement of the lesions: neomicin ointment - neo (n=5), human amniotic membrane - HAM (n=9) or adipose-derived mesenchymal stem cells enriched human amniotic membrane - ADSC+HAM (n=7). The open skin lesions of the animals were measured in cm2: 6.7 (neo group); 4.4 (HAM group); and 5.6 (ADSC+HAM group). After 5 days, the dressings were removed and the lesions remeasured, resulting in the following average values: 3.4 (neo group); 2.7 (HAM group); and 2.3 (ADSC+HAM group). The values were tested with ANOVA analysis of variance ($p< 0.05$). The percentage of wound healing was 49,25% for the neo group; 38,63% for the HAM group; and 58,92 for the ADSC+HAM. Although these values show the greatest efficiency of group ADSC+HAM in wound healing, followed by group neo and finally group HAM, it was not possible to reach statistical significance due to the small number of animals used in this study.

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New Lower Eyelid Reconstruction Using Transverse Facial Artery Perforator Flap Based on Anatomical Study

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Purpose: With aging of the global society, the demand for lower eyelid reconstruction following malignant skin tumor resection is increasing. For decades, flaps such as cheek rotation or cervicofacial flaps, which require excessive dissection, have been preferably used to reconstruct relatively large lower eyelid defects. However, advances in health care have also increased the number of frail elderly people. In such cases, highly invasive reconstructive method should be avoided from the perspective of perioperative risk management. A new, less invasive option that achieve functional and esthetic lower eyelid reconstruction is needed for elderly patients. We focused on the transverse facial artery perforator based on previous anatomical reports. According to

those reports, at least one sizable perforator exists and location of the perforator penetrating the superficial musculo-aponeurotic system is typically approximately 3 cm lateral to and 4 cm below the lateral canthus. We present a new surgical technique using a transverse facial artery perforator flap.

Materials and methods: Records of 11 patients who underwent lower eyelid reconstruction with transverse facial artery perforator flaps after malignant skin tumor resection between July 2019 and June 2021 were reviewed. This study was approved by the institutional review board (IRB no. 5668). Data collected included patient age, sex, diagnosis, comorbidities, performance status, presence of antithrombotic medications, type of anesthesia, distance from the lateral canthus to the perforator, defect size, flap dimensions, postoperative complications, follow-up period, presence of recurrences, and functional and esthetic outcomes.

Results: The patients' mean age was 85.7±6.7 years. Six patients underwent surgery under local anesthesia and five under general anesthesia. Malignant skin tumors were resected with 4–10 mm of the surrounding skin depending on the tumor type. Ipsilateral transverse facial artery perforator flap was raised to cover the defect. Primary reconstructions were achieved in all cases. The follow-up period was 13 (range, 9–33) months in median. Two minor complications occurred during the follow-up period: pyogenic granuloma (n=1) and temporary ocular pain and conjunctivitis (n=1). The incidence of complications and the result of functional and esthetic outcomes showed no significant differences between the two groups with different anesthesia.

Conclusion: This is the first report to describe the use of a transverse facial artery perforator flap for lower eyelid reconstruction. The flap may be an effective option for lower eyelid reconstruction especially in elderly patients to achieve good functional and esthetic outcomes with low risk and minimal invasion.

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Complications and aesthetic result in two-stage breast reconstruction: comparison between pre-pectoral and sub-pectoral techniques

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Introduction: Prosthetic reconstruction is the most widely solution used today in breast reconstruction. In the last decade breast reconstruction has focused on reconsidering and proposing prepectoral reconstruction with increasing frequency. This approach was supplanted by submuscular reconstruction due to the high rate of capsular contracture.

Currently, two are the implant-based methods which can be considered: direct-to-implant reconstruction or two-stage. The advantages of one-stage breast reconstruction are well known (1). Smoking, hypertension, chemotherapy, radiotherapy, obesity, uncontrolled diabetes, and age over 65 years are risk factors that could complicate reconstruction. In these cases, two-stage reconstruction is preferred. The safety of two-stage tissue expander-based breast reconstruction is well established (2). The introduction of ADMs has also changed the way of approaching two-stage reconstruction (3). There are three possible positions in which the expander can be placed in two-stage reconstruction: total submuscular, partial submuscular or prepectoral plane.

The aim of our study is to make a retrospective comparison of total submuscular vs prepectoral reconstruction with ADM based on early complications and the aesthetic result (using Breast-Q).

Materials and methods: We retrospectively considered 80 patients (40 for each group) who had undergone mastectomy and reconstruction with temporary expander between 01/01/ 2018 and 12/31/2020, considering for each person demographic, oncologic, and surgical factors.

Postoperative complications were classified as immediate (within 3 months) or late. Immediate complications were further divided into major and minor.

Patients with at most one risk factor were considered eligible for two-stage prepectoral reconstruction, according to our internal protocol. Eligible patients' mastectomy flaps were then evaluated intraoperatorially both via clinical examination and indocyanine green. Two-stage prepectoral reconstruction was performed only in patients with viable and well perfused mastectomy flaps.

All patients who underwent expander to implant exchange received Breast Q questionnaire 6 months after the operation.

Results: Results are currently undergoing revision. We did not highlight statistically differences in the analysis of complications in the two single groups comparing to what is reported in literature. The comparison between the two cohorts and the analysis of the results obtained from Breast-Q are in progress.

Conclusions: Two-stage breast reconstruction can be considered fundamental in post mastectomy reconstruction. Thanks to new scientific evidence, the possibility of placing the expander in prepectoral space has determined a whole series of benefits for patients: the main ones are the reduction of both post-operative pain and animation deformity with increasing in satisfaction for the aesthetic result. However, the choice of placing the implant prepectoral must be well evaluated to minimize complication.

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"W" Technique for Nipple Hypertrophy: A New Old Approach

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Introduction: Nipple hypertrophy is rarely addressed in the medical literature. It is a disorder that can be found in both sexes, and its epidemiology is still unknown.1 The nipple has an average of 4-7mm in diameter and 1cm in projection, being generally proportionally three times smaller than the areola. It seems that great levels of progesterone2 can cause this hypertrophy. In social life and day by day, it can cause embarrassment and pain. There are some techniques described for the treatment of nipple hypertrophy, but almost all can cause sequelae. This paper shows a technique described by Jaimovich, called "W" technique, which has little complications and can allow breast feeding, without changing sensibility. As "W" technique is inspired in the mamoplasty described by Pitanguy, it is well Known all over the world and easily reproducible.

The “W” technique consists of marking in the nipple, the same reference points as Pitanguy ‘s technique for mamma reduction, with points called “A”, “B”, “C”, “D” and “E”. The excess of the nipple is then resected, and the nipple sutured as a superior flap in Pitanguy’s mammoplasty. The goal of this paper is describing the experience of our Clinic, using the “W” technique for nipple hypertrophy treatment. Methods: We performed the “W” technique in 20 patients, during the period of January 2010 to May 2018. There were no cases of necrosis – neither total nor partial. No one of the patients underwent the technique complained of sensibility lost and all of them related to be very satisfied with the aesthetic and functional results. One of the patients was able, after the surgery, to breastfeed. A hypothesis for this is that this technique preserves part of lactiferous ducts, unlike those described by Vecchione, Marshall, Basile, DeBono, Chia and Moliver.

On the presented technique, the nipple vascularization is preserved, like observed on the first communication made by Jaimovich and the results observed with the same technique in our Clinic, since there was no necrosis or others complications.

In conclusion, the presented technique is easy to perform, reproducible, without complications and it has very good results, allowing the maintenance of sensibility, the possibility of breastfeeding and reducing the projection and diameter of the nipple.

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Chest wall reconstruction following tumor recurrence in breast cancer: a case report.

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Introduction: Breast cancer is the most common neoplasm in women, excluding non-melanoma skin neoplasm and it represents 22% of new cases each year.1,2 Due to treatments breakthroughs, patient survival has increased, which indicates that social and functional rehabilitation through chest wall reconstruction as its paramount component.5

Objective: Report a case of a patient with recurrent breast cancer and need for chest wall reconstruction.

Case report: LLVA 47 years old, with cancer in its right breast treated with partial mastectomy, radiotherapy and chemotherapy, which evolved to a chest wall undifferentiated pleomorphic sarcoma. A complex thoracectomy was performed in oncology with tumor resection in the right chest wall and resection of the 3rd, 4th, 5th and 6th costal arches, followed by a reconstruction, accomplished with 2 acetabular plates and a 42-cm polypropylene mesh. Afterwards, a rotation of myocutaneous flaps with latissimus dorsi and transversus rectus abdominis (TRAM) with contralateral pedicle was performed. The patient evolved with fair flaps perfusion.

Discussion: The plastic surgeon participation oncological treatments have shown increasing importance, allowing the performance of large resections that could be considered unresectable without its repair. Thus, a reconstruction is essential to increase life quality and provide local conditions for accessorial treatment.5 During chest wall reconstruction, the technical difficulty lies in the extent of resections, requiring reconstruction of the costal bone framework when there is resection of four or more ribs or when there is a lateral defect greater than 5 cm.2

The most used flaps are the latissimus dorsi myocutaneous and the TRAM flap.1,2

Conclusion: The plastic surgeon is a fundamental character of a multidisciplinary team in the treatment of the breast cancer, especially in large resections situations.

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STROMAL VASCULAR FRACTION ASSOCIATED WITH ACELLULAR DERMAL MATRIX IN CUTANEOUS WOUND HEALING IN RABBITS

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Background: Several methods have been studied to optimize the use of the Acellular Dermal Matrix (ADM) on the healing of skin wounds one of them is the Stromal Vascular Fraction (SVF).

Objective: To evaluate the effects of Stromal Vascular Fraction combined with the Acellular Dermal Matrix on the skin wounds healing in rabbits.

Method: 24 New Zealand rabbits were distributed in 4 groups (n = 6). Three full thickness skin wounds were performed on the back of the animals, and it was the only procedure performed in the control group. In the ADM group a sample of ADM was sutured. In the SVF group, 2,3 x 106 SVF cells were injected intradermally and in the ADM/SVF group, the same amount of cells were injected and ADM was sutured to the lesion. Skin wounds biopsies were performed on days 3, 14 and 21. Wound healing rate, thickness of dermis and epidermis, quantification of type I and type III collagen and formation of new vessels were evaluated. Results: There was no difference in healing time between groups. The ADM/SVF group had higher dermis and epidermis thickness, higher amount of collagen type I and III, and larger number of blood vessels on day 21 when compared to all groups.

Conclusion: The thickness of the dermis and epidermis, the amount of collagen type I and III and the number of blood vessels increased in wound healing in the ADM/SVF group compared to the other groups evaluated. There was no difference in healing time.

CICATRI-PRESS: device for keloid compression

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Co-Authors: Isabella de Oliveira Rosa, Felipe Contoli Isoldi, Profa. Dra. Lydia Masako Ferreira

Introduction: Compression therapy of keloid (pressure therapy) is an adjuvant treatment of pathological scarring, especially to reduce its elevation feature and ease its symptoms.

Objective: To create a device to apply compression on keloid. Methods: A review of existing patents was made through the anteriority search in the main national (INPI) and international databases (EPO, USPTO, Espacenet, WIPO, Google Patent Search and JPO). Design Thinking was used for the elaboration of prototypes to validate the concepts and the functionality of the device. The prototype was divided into three parts: the first one was kept in contact with the scar; the second, contained the compressive mechanism; and the third included the system that attached all parts together. The industrial design and final version of the device were made.

Results: Eleven patents were found in the anteriority search. The device for keloid compression was developed using a spring mechanism, comprised by three structural units, which were attached as a single piece, and it was adhesive to the skin.

Conclusion: A device for keloid pressure therapy was developed.

The Posterior Arm Flap for Reshaping the Post bariatric Breast

Presenting Author: Vincenzo Vindigni

Co-Author: Franco Bassetto,

Introduction: Post-bariatric surgery tries to correct physical defects and body deformities. Because of the intrinsic complexity of massive weight loss (MWL) patients, more than a single procedure is required. We report a combined surgical method able to improve arms' and breasts' contour that aims to obtain a satisfying functional and aesthetic result by reducing surgical times and costs.

Materials and Methods: 9 female MWL patients with proper body mass index was clinically evaluated and considered suitable for surgery. Surgical project was supported by detailed anatomical studies of the arm. While authors performed a modified Pascal-Le Louarn brachioplasty for the upper arm, a standard McKissock mastopexy followed by a Wise pattern skin closure was selected to obtain the breast lift. By sparing the proximal pedicle, the fasciocutaneous flaps were harvested on both posteromedial sides of the arms. The posterior arm flaps (PAF) were tunnelled and transposed below the subcutaneous skin bridge across the axilla and finally used to increase the breast mound. Clinical aesthetic outcomes were assessed according to Breast-Q test.

Results: No complications were reported. After the 6-month and 1-year follow-up, both arms' silhouette was documented as healthy and symmetric. Breasts were soft, without any signs of ptosis and/or contracture. No skin disorders or scar hypertrophy or lymphedema were reported. BREAST-Q score of patients revealed a higher patient satisfaction.

Conclusions: PAF in breast contouring procedures is an interesting surgical option, but more patients need to be treated to validate the effectiveness of the procedure. This technique should be considered when there is a need for simultaneously improving arm's contour and breast's volume and shape.

T-shaped Anastomoses Using the Femoral Circumflex Artery's Descending and Transverse Branches: Our 10-Year Experience in Reconstruction of Upper and Lower Limbs

Presenting Author: Teresa Nunez-Villaveiran

Co Author: Gloria Alsina

Purpose: The use of the lateral femoral circumflex artery's descending and transverse branches allows performing T-shaped anastomoses in anterolateral thigh (ALT) flaps. This technique preserves the flow through extremities' main vessels. We describe our experience using this method for upper and lower extremities' reconstruction.

Methods and materials: A retrospective chart review of all ALT (T-shaped and end-to-end anastomoses) performed in the last 5 years, revision of CTA, demographic data of the patients and their outcomes.

Results: 192 ALT flaps were performed to cover trauma injuries in upper and lower extremities, 127 (66.1%) were ALTs with T-shaped anastomoses. There were no significant differences between genders, age and comorbidities in both groups. Complications were found in 5.5% of T-shaped anastomosed flaps, and 3% of end-to-end flaps. Five flaps were lost, in 3 cases the defects were covered using a contralateral ALT flap, in 1 case using a sural flap, and in the last case the defect was covered using integra (the patient had a protein S deficit and a previous deep vein thrombosis of the other leg).

Conclusions: T-shaped anastomoses in ALT flaps using the descending and transverse branches of the lateral circumflex artery are an alternative to end-to-side anastomoses, or descending branch flow-through anastomoses, to preserve vascularisation of the extremities. We consider them as our first choice if a reliable proximal branch can be included in the T-shaped pedicle.

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Pyogenic Infections of the Hand

Presenting Author: Camillo Theo Müller

Co-Authors: Mahmoud Ramzy, Deboccard Olivier, Wassim Raffoul, Berthold Bickert, Henrick Menke, Martin Amann, Franziska Grünenfelder, Valentin Haug, Benjamin Thomas, Christoph Bollmann, Ulrich Kneser; Leila Harhaus

Background: Patients with pyogenic infections of the hand usually present days after bites or cuts with typical signs of infection. These clinical findings warrant a thorough treatment strategy, but the decision and indication for surgical treatment can be unclear in dependency of the progress of the infection. On the search to improve sensitivity and specificity of preoperative diagnostics we reviewed the literature regarding the use of point-of-care-ultrasound (PCUS) in hand infections and retrospectively analyzed patients undergoing decision making with PCUS.

Materials and Methods: We performed a review searching PubMed, Scopus, Cochrane Register, and Google Scholar for the use of PCUS in therapy planning in infections of the hand.
Additionally, we retrospectively screened our patients from 1/1/2020 to 30/11/2020 to validate the potential benefit of ultrasound examination in clinically suspected infections of the hand. We evaluated initial clinical examinations versus blinded sonographic assessments in the context of correct decision to proceed with surgery or conservative treatment.

Results: 2048 Studies with the topic “ultrasound and infection and hand / wrist / finger” were identified, of whom 97 mentioned the use of ultrasound in diagnosing infections of the hand in either title or abstract. After full-text analysis, 9 studies were included in the literature review.
In our retrospective analysis of 20 patients with suspected infection of the hand the clinical and ultrasound assessment led to emergent surgery in 13 cases. Of those thirteen patients seven revealed positive microbiological results. By retrospective assessment of solely the ultrasound images, surgery would have been indicated in nine cases, including all seven cases with microbiologically confirmed infections.

Conclusion: Both clinical examination and ultrasound can help detect infections of the hand with high accuracy. Ultrasound examination alone, however, seems to yield a lower false-positive rate, hence Ultrasound was associated with a higher specificity in our series.

WALANT for Finger Fractures

Presenting Author: Camillo Theo Müller

Introduction: Hand surgeons use WALANT for finger fractures 1-5, flexor tendon repairs 6, tendon transfers 6,7, arthroscopy8 and open TFCC repair 8. We report a case using the WALANT technique for proximal row carpectomy (PRC). We offer technical points on how to perform this procedure as well as the advantages which are associated with the WALANT for wrist surgery

Case description: A 72-year-old otherwise healthy woman presented with persistent radial sided wrist pain after four surgical operations of her hand performed for this pain in another country. The trapezio-metacarpal joint had been fused, and the distal scaphoid had been resected. Preoperative X-ray and CT exams showed the trapeziometacarpal joint arthrodesis as well as an advanced midcarpal arthritis between lunate and capitate We interpreted the findings as former STT arthrosis and subsequent adaptive carpal instability (CIA). We proposed the patient the resection of the remaining scaphoid and a midcarpal four corner arthrodesis. But the patient was not willing to relieve her hand for 8 weeks, and not to stop smoking. So, we offered her the proximal row carpectomy as a second-choice procedure, and despite her midcarpal arthritis. Further she did not agree to undergo surgery in brachial plexus bloc but wished to undergo surgery in WALANT technique she had heard of. Her latter wish found our full approval. We prepared the local anaesthetic injection mixture as follows: 100 ml mixture of 40 ml of normal saline solution, 40 ml of 1 % lidocaine with 1:100’000 epinephrine, 4 ml of 8.3% sodium bicarbonate, and 10ml of 0.5% bupivacaine. The bupivacaine was added to prolong the postoperative analgesia. Infiltration technique: We used a 25-gauge needle to inject: 20 ml dorsal to the wrist, 20ml radial to the wrist, 20 ml ulnar to the wrist as well as 10 ml over the median nerve in a subcutaneous fashion. We waited 30 minutes between the end of the injection and the skin incision. During the operation, we distracted the radiocarpal joint and infiltrated 8 ml in this joint.

Post-operatively the patient was “immobilised” with a voluminous dressing without a splint. Postoperatively, the patient reported only minimal discomfort, managed solely with Ibuprofen, Paracetamol and Tramadol. Two weeks after surgery the patient started to move more. She reported felt less pain than before surgery. No complications were observed in follow-up. At three-month follow-up the patient indicated a VAS of 0/10. Conclusion: 1) PRC in WALANT technique can be done in carefully selected patients. 2) In low demand patients, PRC can relieve pain even in the presendce of a luno-capitate arthritis.

RECONSTRUCTION OF COMPLEX TENDON DEFECTS IN THE UPPER AND LOWER EXTREMITY. EXPERIENCE IN OUR CENTER.

Presenting Author: Cristina Burgos Gutiérrez

Co-Authors: Daniel Camporro Fernández, Susana Carnero López, Luis Martín Suárez, María Sacido Gosende, Clara Elsa Martín Muñiz

PURPOSE: Limb defects that affect skin and tendons would require a new sliding surface for tendon reconstruction, as well as a stable coverage (1,2,3). The objective of this poster is to present our experience in the combined use of free flaps, like ALT flap with vascularized fascia or serratus anterior fascia flap, with tendon allografts in the upper and lower extremity.

METHODS AND MATERIALS: Among the upper limb cases, 4 patients are presented: 2 post-traumatic cases, one extravasation and one patient who suffered a cat bite. All of them presented full-thickness skin loss on the dorsum of the hand and loss of several extensor tendons. Among the lower limb cases, we found 2 patients who, after open fractures, presented a dorsal defect with extensive skin and tendon loss. In all of them, a free serratus fascia flap or an ALT flap including a remnant of fascia was used, using this fascia as an envelope for tendon reconstruction with allografts.

RESULTS: All of them have shown good aesthetic and functional results.

CONCLUSIONS: Use of free flaps with vascularized fascia allows wrapping tendon allografts and has been shown to provide stable and functional coverage in a single surgical time.

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Long-Term Evaluation of the Lip and Nose in Bilateral Complete Cleft Lip Patients Following Lip Adhesion and Secondary Nose Correction

Presenting Author: Jung Hyun Hong

Co-Authors:
Ryuck Seong Kim, Yong Chan Bae, Hyung Joon Seo, Min Suk Park, HoYoon Jeong

Background: Surgical correction of bilateral cleft lip deformities remains one of the most challenging areas in facial plastic surgery. Many surgical techniques and conservative devices have been offered for the early management of bilateral cleft lip in infants. The purpose of this study was to evaluate the effect of lip adhesion on the lip and nose of patients with bilateral cleft lip.

Methods: A retrospective review of 13 patients with bilateral cleft lip was performed and compared with age-matched non-cleft children. Patients underwent lip adhesion at a mean age of 2.8 months, and cheiloplasty at 6.6 months of age using a modification the Mulliken method. Secondary rhinoplasty was performed at age 6 in 13 patients. The surgical results were analyzed using photographic records obtained at ages 1 and 7 years. Twelve length measurements and one angle measurement were obtained.

Results: All measurements were not statistically different from those of the non-cleft age-matched control group at age 1. At 7 years of age, upper lip height and vermilion mucosal height were shorter ($p < 0.05$) than in the control group. Nasal tip protrusion and the nasolabial angle were greater ($p < 0.05$) than in the control group.

Conclusions: Lip adhesion followed by secondary rhinoplasty resulted in an acceptable lip and nasal appearance. Although nasoalveolar molding is now widely used, lip adhesion can be an appropriate alternative if an orthodontist is not available due to geographical or economic constraints.

The use of NovoSorb® Biodegradable Temporising Matrix for reconstruction of complex surgical wounds: four-year experience from Melbourne (Australia)

Presenting Author: Sally Kiu-Huen Ng

Co-Authors: Pelicia Lim, Henry Li, Geoffrey Lee, Derek Neoh, Julian Liew

Background: The Novosorb Biodegradable Temporising Matrix (BTM) (PolyNovo Biomaterials Pty Ltd, Port Melbourne, Victoria, Australia) is a fully synthetic dermal matrix that can be used to reconstruct complex wounds. It consists of a 2mm thick NovoSorb biodegradable polyurethane open cell foam covered by a non-biodegradable scaling member. The application involves a two-stage procedure. In the first stage BTM is laid onto a clean wound bed and in the second stage, the sealing membrane is removed, and a split skin graft is applied to the neo-dermis. BTM has been used to reconstruct deep dermal and full thickness burns, necrotizing fasciitis, and free flap donor site in the early phase. Our presentation document the largest case series in the literature where BTM is successfully used to reconstruct a wide range of complex wounds – ranging from hand and fingertips injury, dupuytren's surgery, chronic ulcers,

post excision of cutaneous malignancies, hidradenitis suppurativa. We also explore the use of BTM in the radiated wound and assess the effect of radiation on wounds that are reconstructed with BTM.

Methods: Patient who received BTM application cross four centres over 36 months were included. Patients were followed up to assess BTM and graft take, the aesthetics, the return of sensation and complications.

Results: A total of 100 wounds were identified with a range of aetiologies. 90% of the wounds had 100% integration of BTM at the time of sealing membrane removal. 20 wounds had partial graft loss that later healed by secondary intention. In two cases, re-epithelisation occurred with BTM alone without split skin graft. PSOSA scores from patients and an independent surgeon shows favourable aesthetic result.

Conclusion: BTM offer a safe and reliable reconstructive option in challenging wounds that would otherwise require more complex reconstruction.

Association of different flaps for complex nasal reconstruction: Case Report

Presenting Author: Ana Luiza Cavalheiro

Co-Authors: Rinaldo Fischler, Ana Luiza Cavalheiro$_2$ Clarissa Netto Alves, Fábio Luís Nonato, Ana Cláudia Ramos Rabelo, Mariane Elizabeth Sakai, Pamela Bernareds Mineu Fontes, Flávia Mesquita Soares, Larissa Ludmilla Sercundes Pinto, Melissa Nicole Montano Rojas, José Octavio Gonçalves de Freitas

INTRODUCTION: The nose is one of the most characteristic and striking features of the face, with peculiarities and complex surfaces. This structure is composed of different skin thicknesses, con-caved areas intermingling with other convex areas, within regions of greater or lesser skin excess, and complex vascular regions. For these reasons and many others, nasal reconstruction is challenging for the plastic surgeon, being one of the procedures with the greatest need for technical training and learning. Skin tumors are currently the main indication for nasal reconstruction surgery. $_2$ According to INCA (National Cancer Institute), non-melanoma skin cancer is the most frequent in Brazil and corresponds to about 30% of all malignant tumors registered in the country. The knowledge and application of different repair techniques are essential for the follow-up of the treatment and the search for the best aesthetic result within the repair surgeries. The nose is particularly vulnerable to skin malignancies. About 75% of non-melanoma skin tumors occur in the head and neck. Of these, about 30% occur in the nose[5].

OBJECTIVE: The objective of this project is to report on a clinical-surgical case of a patient who has been submitted to a complex nasal reconstruction with the construction process of associated local flaps: chondromucosal nasal septum, nasolabial and mid-forehead flap , performed at the Integrated Services of Plastic Surgery at Ipiranga

Hospital – SP.CASE STUDY 75-year-old man, smoker, on average 200 packs-years, without comorbidities, was checked in with a historical of an extensive vegetative lesion affecting the wing, dorsum, left lateral part of the roof, and left lateral region of the nose. Lesion excision was performed with complete removal of the affected aesthetic units, with the reconstruction programming for the second time. With an anatomopathological result, showing invasive squamous cell carcinoma, and compromised lateral dorsal margin, the patient was taken for adjuvant radiotherapy. The reconstructive surgery, whose therapeutic option was based on the creation of a chondromucous septum flap, nasolabial flap, and mid-forehead flap. RESULTS With no evidence of new lesions since the beginning of the treatment and after the reconstruction, an aesthetic result was observed and satisfied.

CONCLUSION: Complex nasal reconstruction is still a major challenge for most plastic surgeons, but the association of flaps can be used for nasal reconstruction with excellent results from an aesthetic and functional point of view. Through this work, it was possible to demonstrate that it is possible to reconstruct the nasal aesthetic subunits through complex reconstructions, with satisfactory aesthetic and functional maintenance.

REVIEW OF METASTATIC ECRINE POROCARCINOMA. ABOUT TWO CASES

Presenting Author: Alberto Ruiz Mulas

Co-Authors: Ignacio David Pellicer Artigot, Celia Miñón Santamaría, Elena Pérez Martin, José María Piqueras Pérez

Objective: To present two cases of metastatic eccrine porocarcinoma.

Methods: Review of the clinical history of patients diagnosed with metastatic eccrine porocarcinoma during the last twenty years at the U. Río Hortega Hospital in Valladolid (Spain).

Results: Thirty cases of eccrine porocarcinoma have been diagnosed in our hospital, two of which have presented distant metastases1.

The place of diagnosis of our first patient was in a finger of the hand, where she previously presented Bowen's disease2. He presented skin metastases with extensive carcinomatous lymphangitis3, for which he required amputation of the hand, and at the pulmonary level, which caused his death. Treatment with palliative radiotherapy was performed.

The site of appearance of the porocarcinoma in the second patient was the temporal region. The metastases reached the parotid gland and the neck 11 months after diagnosis, after several local recurrences. Simultaneously, hepatic (affiliated as of

intestinal origin), adrenal and bone metastases (unaffiliated) arose. Death was caused by intestinal perforation secondary to a colonic mass.

Conclusions: Although metastases in eccrine porocarcinoma are relatively infrequent, when they appear they substantially worsen the prognosis, without effective treatments.

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SENSORY NERVE TRANSFER FOR THE RESTORATION OF THE SENSATION OF THE FIRST WEB SPACE OF THE HAND IN PARTIAL MEDIAN NERVE INJURY

Presenting Author: Sara Alicia Gonzalez Porto

Co-Authors: Pablo Palacios Garcia, Ignacio Vila Garcia, Noelia Barreiro Creo, Reyes Trillo Bravo, Bruno Gago Vidal

Purpose: To describe the nerve transfer performed in the management of partial median nerve injury to restore sensation of the first web space.

Methods: We present a case of a 59-year-old woman with volar anesthesia of the thumb and index finger of the hand, after partial injury of the median nerve in the thenar eminence. In the abscence of recovery 18 months after injury, a sensory nerve transfer was performed. The third web space nerve was used as a donor, and the first web space nerves were the recipient. The radial collateral branch of the third web space nerve was transfered to the ulnar collateral nerve of the thumb, and the ulnar branch to the radial colateral nerve of the index finger.

Results: The sensory recovery in the first web space was satisfactory, and no morbility was observed in the donor zone 11 months after surgery. The distal dissection of the donor nerve allowed us to perform direct neurorraphy distally to the thenar area of fibrosis, thereby obviating the need for grafts (1).

Conclusions: The third web space nerve transfer to the first web space collateral branches (ulnar thumb and radial index) allows to restore the firt web space sensation,

and it is a invaluable surgical tool in partial lesions of the median nerve.

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Effectiveness and oncologic safety of the Axillary Reverse Mapping (ARM) technique in the prevention of breast cancer surgery-related upper extremity lymphedema. A Systematic Review

Presenting Author: Miguel del Pino Jimenez

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BACKGROUND: Advances in the management of breast cancer (BC), identified as the most prevalent cancer, and the consequent improvement in its survival (89%)1, imply an absolute increase in patients suffering complications derived from its treatment. One of the most distressing being lymphedema, which develops in up to 30%4 of patients and generating significant biopsychosocial morbidity.
Introduced in 20072, axillary reverse mapping (ARM) appears as a technique that allows differentiation of the lymphatic systems draining the arm from those of the breast, thus preserving brachial lymphatic circulation and preventing the development of lymphedema. Currently, this technique continues to raise doubt regarding oncological safety and its applicability5 in routine clinical practice.

OBJECTIVES: Evaluate ARM according to its:

- Effectiveness in the prevention of BC surgery related lymphedema (BCRL).
- Oncologic safety.
- Applicability (feasibility, precision and reproducibility).

MATERIALS AND METHODS: A systematic search of the Cochrane Library (CENTRAL), MEDLINE, EMBASE and other sources was performed, considering as eligible randomized controlled trials (RCTs) evaluating ARM for lymphedema prevention. The risk of bias of each study is assessed using the Cochrane tool3 and the quality of the evidence with GRADE. Meta-analysis is performed when possible.

RESULTS: Five RCTs (1583 participants) with overall moderate quality of evidence and uncertain risk of bias are included, obtaining the following:

• ARM significantly reduces (RR = 0.34; 99% CI 0.18-0.79; p=0.001) the risk of developing lymphedema in the ipsilateral arm.
• No differences in oncologic recurrence were observed, although only one trial found events.
• Lymphatic detection rates varies between 76-94% depending on the technique used, being identified metastases in them between 0-8.5%.

CONCLUSIONS: Emerging evidence begins to favourably clarify the doubts regarding oncological safety of ARM. This, in addition to its effective and reproducible prevention of BCRL, supports its implementation in routine clinical practice, although more research is needed to select the most benefited subgroup of patients.

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Double-Island Anterolateral Thigh Free Flap Used in Reconstruction of Pharyngostomes: A Purpose of Three Cases

Presenting Author: María Segovia González

Co-Authors: Jesús Sánchez Martín, Javier Francisco García García, Laura Gutierrez Roca, Pablo Benito Duque

Purpose: Pharyngocutaneous fistula or pharyngostome is a frequent complication in pharynx and larynx surgery and a difficult one to solve. It is associated with a deterioration in quality of life and with an increase in morbidity and mortality, hospital stay and health costs. We present the outcomes of the reconstruction of three patients using a double-island anterolateral thigh (ALT) free flap as well as a review of the literature on the use of this design in the reconstruction of pharyngostomes.

Material and method: We present three patients with pharyngocutaneous fistula reconstructed using a double skin island ALT free flap, which can simultaneously close both the mucosal and skin defects. Each island is based on one of the perforators of the descending branch of the lateral circumflex femoral artery.

Results: Successful closure of the fistula and restitution of oral intake were achieved in all patients, improving their quality of life and life expectancy. After reviewing the published literature, we confirmed the scarcity of references to the reconstruction of pharyngostomes using this design.

Conclusions: Pharyngocutaneous fistula is a frequent complication of laryngopharyngeal surgery that leads to increased morbidity and mortality and lowering of in the quality of life of patients.

Microsurgery is presented as one of the best solutions for reconstructing complex head and neck defects, being the double-island ALT flap an excellent option for closing pharyngostomes due to its several advantages:

• Allows the harvest of two skin paddles with two perforators to repair complex defects. In the case of pharyngostomes, it allows simultaneous reconstruction of both mucosal and skin defects.
• Its long vascular pedicle allows anastomosis to distant vessels when we face with necks depleted by previous surgical and/or radiotherapy treatment.
• The versatility of its design (musculocutaneous, fasciocutaneous, adipofascial…) allows it to be adapted to the needs of each defect.
• It has low morbidity of the donor site.
• Provides healthy and well-vascularized tissue to obliterate dead space and to cover exposed structures, preventing complications.

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Microsurgical Replantation after Nose Amputation

Presenting Author: Danilo Rivas Nicolls

Co-Authors: Bernat López Masramon, Jordi Aguilera Sáez, Jordi Serracanta Domenech, Antonio Bulla, Juan P Barret

Objectives: Microsurgical replantation is the best option after nose amputation. The most common challenge reported is to obtain an effective venous drainage because of the small size of the veins. We present the case of a successful nose replantation and our protocol for postoperative pinpricking with low molecular weight heparin (LMWH) to handle congestion problems.

Materials and Methods: We present a case of a 57-yo male who arrived at the emergency department on April 2020 with an amputation of the distal part of the nose secondary to a dog bite injury. Micorsurgical nose reimplantation was attempted. An artery (<1mm in diameter) was identified in the superior right margin of the segment. The columellar artery (1mm) was also found, and a vein (0.5mm) was identified in the medial part of the superior border of the segment. Receptor artery was identified as the right lateral nasal artery, and a small vein in the superior edge of the medial part of the remaining left nasal wing.

Results: Despite achieving optimal arterial flow and good flap perfusion, effective venous drainage was not obtained. The replanted nose soon became congestive, so we started our protocol of pin-pricking for congestive flaps. During the postoperative course, the patient required 3 blood transfusions, but there were no further complications. After 8 months follow up, aesthetic and functional outcomes were excellent, so revision surgery was not required.

Conclusions: In our experience, microsurgical replantation is the best option in nose amputation, and pinpricking can manage venous drainage in case of small, replanted segments, avoiding the disadvantages of leeching.

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EPIDEMIOLOGICAL STUDY OF PEDIATRIC BURN INPATIENTS IN THE LAST TEN YEARS IN THE PLASTIC SURGERY UNIT AT BURGOS UNIVERSITY HOSPITAL

Presenting Author: ANA ALONSO MARTINEZ

Co-Authors: Nicole Mercier Rodriguez, - Pablo García Rodriguez, Miguel Eugenio Estefanía Díez,

Introduction: Burn injury is one of the major causes of child morbidity and mortality around the world, having a marked prevalence in developing countries.
Burn-related injuries due to physical agents represent the most frequent cause of child burn injury in our region, with scald injuries (hot liquids) being the most common type, followed by contact burns, and less frequently, chemical or electrical burns.
This study aims to collect and analyze the epidemiologic characteristics of the pediatric burn patients admitted in Burgos University Hospital in the last ten years.

Materials and methods: This retrospective descriptive study collects the characteristics of 82 pediatric burn patients who required hospital admission from 2011 to 2021.

Results: Among the analyzed inpatients, male gender was the most frequently affected (54.9%). Patients were divided into four age groups: 0-1 years, 1-5 years, 6-10 years, and 11-15 years. The largest age group was 1-5 years, constituting the 59.7% of the cases. In children 1-10 years, male gender patients were three times as frequent as female gender patients.
Debridement surgery and posterior dressing were required in 52.4% of the inpatients. It should be noted that electrical burn injuries required surgical procedures in 100% of the

cases, due to the fact that 100% of them were full thickness burns.
Scald burn injuries by hot liquids are the most common cause of burn injury in the region of the study (53.6%), especially by boiling oil. This is also the main cause worldwide.
Regarding total body surface area (TBSA), the largest group is the one with 1-10% TBSA. These results present a double bias, as all burn inpatients belonged to Burgos University Hospital, where there is not a Major Burn Unit.

Conclusions: Burn injuries in pediatric patients remain a frequent cause of medical care, requiring in many cases hospital admission.
Patients under 5 years old are the most sensitive to burn injuries, as they start to ambulate and to interact with their environment, which renders them especially vulnerable. Overall, most burn-related accidents happen at home.
The most common cause of burn injury are scalds, although it is electrical burn injuries that necessitate more frequently surgical procedures and longer hospital admissions.

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