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Defining The Psychosocial Profiles Of Cosmetic Patients Regarding The Procedure They Wish To Undergo. A Cross-Sectional Study
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Introduction:
Various psychosocial characteristics have been found to affect someone’s interest in cosmetic surgery like gender, education, marital status, bullying involvement during adolescence, personality traits and disorders. However, past studies examined the effect of these factors only on general interest in plastic surgery. Our purpose was to identify factors which are associated with specific procedures.

Materials and Method:
1001 participants completed our questionnaires regarding basic sociodemographic data, lifestyle, self-care and health-related habits, anxiety-, depression- and burnout-related symptoms (by means of the validated HADS and MBI scale respectively), and their interest in cosmetic surgery, minimally invasive procedures and 9 specific operations.

Results:
Multivariate regression analysis of the data revealed that each psychosocial profile is different depending on the procedure that cosmetic candidates wish to undergo. People interested in minimally-invasive procedures are statistically significantly older, thinner, well-educated and wealthier female smokers, while liposuction and abdominoplasty candidates are married with children who exercise less, have greater BMI and take painkillers weekly. On the contrary, people interested in rhinoplasty are younger with lower BMI who exercise regularly and have been teased for their appearance during childhood, whereas ones in blepharoplasty are married, older women who drink much coffee and suffer from depressive symptoms. Typical women seeking breast augmentation are thin, single without children who exercise and drink alcohol regularly, while breast reduction candidates have greater BMI, drink much coffee and take painkillers. Men interested in hair transplantation are single, young, middle-educated with low income who seldom drink alcohol and suffer from burnout-related symptoms. However, men interested in correction of gynaecomastia are not characterised by any factor.

Conclusion:
Cosmetic candidates differ in their characteristics regarding the procedure they are interested in. No factor has been found to predict interest in gynaecomastia correction revealing its reconstructive nature. Results of this study may function as useful clinical tools during screening of cosmetic patients.
Prosopoplasty
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Objective:
The word “plastic” comes from the Greek verb “platho” which means “to mould” or “to give form”. Plastic Surgery is the medical specialty that enables the moulding and the re-forming of the human body. Plastic Surgery helps us to regain our self-esteem and self–respect.

Methods:
All the procedures that aim the natural renewal of the face (face lift, neck liposuction, neck lift, blepharoplasty, eyebrow lift, dermabrasion) can be carried out together constituting one procedure; “prosopoplasty”.

Results:
Face means “prosopo”. The word “prosopo” comes from the Greek phrase “pros opa”. “Pros opa” in the ancient Greek language means “the part of the head which is towards the eyes”.

Conclusions:
“Prosopoplasty” is the operation that includes the aesthetic surgical procedures on a face for facial rejuvenation.
Structured Assessment And Documentation Of Facial Aging – An Evidence Based Tool.
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Aesthetic facial procedures, both non-surgical and surgical, have become increasingly popular in the last decade. Understanding and objectively documenting facial aging and cannons of facial aesthetics have never been more imperative. Yet, to date, there is no-validated evidence-based set of measurements to accurately determine and quantitatively measure facial aging and or attractiveness in a standardised and reproducible fashion. Recently, many researchers reported the development and use of validated photo-numeric grading scales assessing individual aesthetic areas of the face in an attempt to bring objective outcome measures to aesthetic facial assessment. Patient reported outcome measures (PROMs) aiming at quantifying a patient’s quality of life and satisfaction with their facial appearance have also been introduced in clinical practice in order to document subjects’ perceptions of facial beauty.

This study systematically reviews available validated tools used in evaluating the severity of features or changes to individual aesthetic areas of the face, highlighting those realistically applicable to the clinical setting. The outcome is then synthesized in a global assessment tool presented for use in clinical setting. The concept of PROMs is also explored and a spotlight is placed on the FACE-Q scale as a validated and reliable PROM.

The authors propose the use of PROMs like the FACE-Q scale in combination with this objective validated assessment scale incorporating all the individual aesthetic areas of the face in day-to-day practice and research to improve aesthetic procedure documentation and communication towards better outcomes.
Basic Science
VAC Therapy In Flap Surgery : A Promising Perspective?
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For many decades, both pedicle and free-flap transfers have been performed in reconstructive surgeries. Whereas, despite their high success rate, 5–10% of cases require re-exploration when flap viability is threatened. Circulatory compromise may eventually lead to flap ischemia and necrosis. Vascular etiologies include arterial, venous, or flap microcirculatory complications. Although an arterial problem represents a situation that must be addressed urgently it is the venous congestion that leads to the accumulation of blood in the affected flap due to insufficient outflow; causing microcirculatory thrombosis, trapping of platelets, and stasis. Without proper treatment, the congested tissue can become ischemic leading to tissue necrosis in the final stages. In those cases, reestablishing a physiological venous outflow is of utmost importance to avoid persistent changes in microcirculation. It was Morykwas, who first introduced the vacuum-assisted closure (VAC) in order to promote wound healing. Negative Pressure Wound Therapy may resolve venous congestion through three possible mechanisms: (1) enhancement of local blood flow to eliminate interstitial blood congestion; (2) increasing the rate of revascularization between the donor and the recipient sites by means of neoangiogenesis; (3) reducing interstitial space pressure by removing the excess liquid and clots from the wound bed.

We Report the experience of our Center regarding the use of Vacuum Therapy as a wound Dressing after flap surgery. We present a series of 32 patients who underwent a pedicled or free flap Transfer and were postoperatively treated with NPWT. From these patients, 28 presented no complications. 2 of them presented local wound healing Problems and in 2 cases the flap had to be revised.

The lack of many reports of such cases in the literature in combination with our positive experience leads us to discuss the benefits, drawbacks and outcomes of the use of VAC therapy after flap surgery as well as the perspectives this therapy might have in the future.
Prophylactic Incisional Negative Pressure Wound Therapy Shows Promising Results In Prevention Of Wound Complications Following Inguinal Lymph Node Dissection

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Background:
Radical inguinal lymphadenectomy (ILND) for metastatic melanoma is associated with a high complication rate. Postoperative complications such as seroma, surgical-site infection and lymphedema lead to multiple outpatient visits, re-hospitalizations and impaired quality of life. Oncological surgeries for metastatic melanoma are leaning towards conservative regimens, however ILND is still a necessary treatment for many patients and actions to reduce postoperative morbidity are needed. Incisional Negative Pressure Wound Therapy (iNPWT) is a prophylactic treatment strategy, which has shown promising results for prevention of postoperative morbidity across a wide variety of other surgical procedures, but has yet to be investigated in patients undergoing ILND for metastatic melanoma.

Methods:
The aim of this study was to investigate, whether prophylactic iNPWT following melanoma-related ILND could reduce the risk of postoperative wound complications. In this study, all melanoma patients treated with ILND from January 2015 to January 2017 at a tertiary university hospital was followed until April 2018 for the occurrence of seroma, surgical-site infection and lymphedema. A total of 55 patients was included in this study, of which 14 patients was treated with prophylactic iNPWT for up to 14 days following ILND and 41 patients received standard postoperative wound care consisting of micropore tape. Wound complications were compared between patients receiving prophylactic iNPWT and patients that received standard treatment. All outcomes were registered from electronic patient charts.

Results:
Patients that received prophylactic iNPWT, had a significant lower risk of developing one or more treatment necessitating seroma when compared to the control group (28.6% vs 90.3%, p < 0.001) and lower mean seroma aspirations within the group (1.1 vs 4.2, p <0.001). The effect of iNPWT on prevention of wound infection (42.9% vs 65.9%, p = 0.13) and lymphedema (35.7% vs 51.2%, p = 0.33) was trending, but did not reach statistical significance. The iNPWT intervention was cost-effective when compared to standard treatment in overall mean treatment related costs (1130.9US$ vs 2798.7US$, p<0.05), due to less treatment necessitating wound complications in the iNPWT group. There was no difference in melanoma groin recurrences between groups.

Conclusion:
To our knowledge, this study is the first reporting on prophylactic iNPWT following melanoma-related ILND. Prophylactic iNPWT shows promising clinical potential in prevention of adverse morbidities following ILND, however the efficacy and safety will need to be confirmed in prospective randomized trials.
Identification Of The Mechanisms By Which Age Alters The Mechanosensitivity Of Mesenchymal Stromal Cells On Substrates Of Differing Stiffness: Implications For Osteogenesis And Angiogenesis.

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In order to identify the mechanisms by which skeletal maturity alters the mechanosensitivity of mesenchymal stromal cells (MSCs) and, the implications for osteogenesis and angiogenesis during bone formation, we compared the response of MSCs derived from children and skeletally-mature healthy adults cultured on soft and stiff collagen-coated polyacrylamide substrates.

MSCs from children were more mechanosensitive, showing enhanced angiogenesis and osteogenesis on stiff substrates as indicated by increased endothelial tubule formation, PGF production, nuclear-translocation of YAP, ALP activity and mineralisation.

To examine these mechanisms in more detail, a customised PCR array identified an age-dependent, stiffness-induced upregulation of NOX1, VEGFR1, VEGFR2, WIF1 and, of particular interest, JNK3 in cells from children compared to adults. When JNK3 activity was inhibited, a reduction in stiffness-induced driven osteogenesis was observed - suggesting that JNK3 might serve as a novel target for recapitulating the enhanced regenerative potential of children in adults suffering from bone degeneration.
Keystone Island Flaps: A Versatile Reconstructive Solution For Full-Thickness Skin Defects
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Introduction:
Keystone perforator flaps constitute a reliable option in plastic surgeon's armamentarium during the last two decades. Its simplicity, versatility, reproducibility and short duration to perform compose some of its major advantages. Lately, its indications are becoming wider and its applications involve defects in every anatomical area. Aim of the study is to review our experience of this perforator flap as a reconstructive alternative to more complex procedures.

Materials and Methods:
Forty two patients underwent a reconstructive procedure to cover defects in various areas from 2011 to 2018. An analysis of patients’ demographic data, medical history and comorbidities, defect dimensions and location, hospitalization, intraoperative duration, reoperation and complication rate was conducted.

Results:
Patients with a mean age of 47 years (29-82) were surgically treated for defects on the trunk (67%), on upper (13%) and lower limb (12%) and on head and neck (8%), during the last 7 years. The majority of patients’ defects were secondary to tumor resection (88%) and the mean size was 64 cm². In 30% of our cases the procedure included two advancement flaps. Average intraoperative duration was 48 min (25-110 min) and mean hospital stay was 2.5 days. All patients were followed up for at least three months, until trauma was fully healed. In only three patients a secondary operation was necessary to achieve a more aesthetically pleasant result. Complication rate was as high as 7% and that included partial flap ischaemia, wound dehiscence and hypertrophic scars.

Conclusion:
Keystone island flap consists a successful reconstructive alternative, which covers easily defects with a like-with-like tissue in every possible anatomical area within a short operative time. The flap requires a short learning curve and can be applied in all ages of patients with various comorbidities and an overall success rate of 93%.
Thermal Imaging In Detection Of Arterial Perforators - A Comparison Of Two Infrared Cameras

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Aim/background:
Thermography for localisation of arterial perforators was first reported by Arai and Fukada in 1968, when the method was expensive and the equipment large. Technological advances have since led to smaller and better cameras. In 2013, Sheena et al. confirmed 732 of 757 thermal hotspots found with a FLIR SC660 infrared camera (US $40,000) using hand-held Doppler. In 2016 Hardwicke et al. described using a FLIR ONE smartphone-connected thermal camera (<US $200), calling it a low-cost alternative that could readily identify perforator hotspots, results later echoed by others, however no validation has been presented.

The purpose of this study was to compare a modern low-end thermal camera, the FLIR ONE PRO (US $400) to a modern high-end thermal camera, the FLIR A35sc (US $5000) with regards to its ability to localise arterial perforators, using Doppler and colour Doppler (duplex) to validate the results.

Material and Method:
We examined 23 thighs in 13 healthy volunteers, 8 males and 5 females. Mean age was 39.9 [26-60], mean BMI was 25.2 [16.70 – 32.00]. Room temperature was 23°C. Thigh areas were exposed for 5 minutes prior to examination. A pre-defined section of the anterolateral thigh was imaged using both cameras and hotspots were marked to indicate agreement or disagreement. Doppler and duplex examinations were performed at each marking. A positive result was an audible pulse using Doppler and visible pulsatile flow traceable from the muscle fascia to the marking using duplex.

Results:
A total of 779 hotspots were found. Mean no. of hotspots was 33.9 [12 – 54] pr. thigh. In 724 hotspots identified with the FLIR ONE PRO, Doppler confirmed 694 (95.9%) and duplex confirmed 688 (95%). In 770 hotspots identified with the FLIR A35sc, Doppler confirmed 738 (95.8%) and duplex confirmed 731 (94.9%). The number of agreements was 715 (91.8% of observations). The FLIR A35SC found 47 more hotspots (mean 2.04 pr. thigh) than the FLIR ONE PRO, which could be confirmed using either modality.

Discussion/Conclusion:
Low-cost thermal imaging provides a reliable, quick and convenient alternative to high-end thermal cameras for the purpose of locating cutaneous arterial perforators. It should be considered a useful adjunct to current methods and merits further study in order to assess its reliability in a clinical setting.
The Use Of Automated Messaging Software To Enhance Patient Satisfaction With Day Case Hand Trauma Surgery

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Introduction:
Hand trauma provides high volume of cases in Plastic Surgery Departments. However high patient turnover can cause delays and miscommunications which can lead to patient dissatisfaction. We aimed to evaluate the effect of an automated text-messaging platform (Lister) on patient satisfaction in hand trauma.

Methods:
Day case hand trauma patients were allocated to two patient groups (n=20v20). Lister group received texts via the Lister software providing them pre-operative information and updates on wait time on the day of surgery. The control group received standard written information. Each patient answered a PROMs questionnaire postoperatively.

Results:
More Lister patients understood instructions regarding hospital attendance (85% v 65%) and felt well informed on the day of surgery (85% v 65%) compared to the control group. Three Control patients felt “Not at all” informed during the day of their surgery. Overall patient experience was better in the Lister group, with 16 (80%) reporting experience as “Very good” compared to 8 (40%) in the Control group (p < 0.05). Two Control patients reported their experience as “Bad”. The majority of Lister patients reported the pre-hospital text message had been very helpful, whilst 14 (70%) Control patients reported a text message service would improve their overall experience.

Conclusion:
We have demonstrated that the Lister automated software can significantly improve the understanding of patients regarding their hospital attendance, time of operation and overall hospital experience within a busy hand trauma unit. Further studies are needed to confirm the potential for cost reduction and financial analysis.
The Significance Of Gliding Tissue Flaps In Severe Neuropathic Pain Syndromes
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Severe fibrosis and/or recurrent fibrosis of nerve segments can lead and maintain significant neuropathic pain. A staged microsurgical neurolysis, concomitant with a reconstruction of the gliding properties of the affected nerve segments could lead to a reduction or even eradication of neuropathic pain.

Between 2005 and 2016 a series of 166 patients suffering from chronic neuropathic pain, due to a peripheral nerve trauma were evaluated. In 40 patients - 40 gliding tissue flap transpositions were performed to cover the affected peripheral nerve segment after staged neurolysis. The results of 35 patients with a follow up more than 12 months will be presented. In 19 cases, a severe fibrosis of the paraneurial, epineurial and perineurial structures of the nerve was diagnosed. In 16 cases a recurrent fibrosis (minimum one neurolysis procedure was performed in the past) was present.

The improvement of neuropathic pain was dependent on the interval between trauma and operation. Significant improvement could be found in all patients who were operated within a one year period after the trauma. In cases of recurrent fibrosis, the visual analog scale (VAS) could be improved by 3-5 points if the pain status was longer than 1 year, and 5-7 points if the operation was performed less than 1 year after trauma. In patients with severe fibrosis of nerve structures improvement of neuropathic pain was found even better.

We concluded that gliding tissue flaps after staged neurolysis are capable of improving chronic neuropathic pain substantially.
Common Secrets From Elder To Younger Surgeons
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The radial forearm free flap is the workhorse of the microsurgical procedures in head and neck reconstruction. The reliable anatomy enables a quick harvest with safe success even in non experienced hands. In the plastic surgery bibliography numerous are the papers describing the harvest of the flap and its anastomosis in the reconstruction of the oral cavity. However, to our knowledge, there are still two small details, not clearly mentioned in the existing literature, which could simplify the everyday practice.

The milestones of the bibliography were studied for the description of the flap harvest. 10/19 sources, published between 1996-2011, describe in detail the harvest of the radial forearm free flap. 7/10 suggest harvesting from the ulnar to the radial side; 3/10 do not make a specific proposal. They all though share in common the identification of the radial artery at the distal margin of the flap in one of the first steps of the flap harvest.

In order to avoid the trap of harvesting the flap with a not rare strong perforator or a duplication of the artery and consequently lose time, we find useful the identification of the vessel pedicle proximally in the forearm in the beginning of the procedure and furtheron its tracking via the radial side of the flap to the distal margin. Only then we start with the harvest in the established way (ulnar to radial, bottom-up).

After insetting the flap in the oral cavity we tunnel the pedicle through a catheter under the mandibula to anastomose it to the recipient vessels. With this easy manoeuvre kinking, stretching and twisting of the vessels are safely prevented.

We therefore would like to stretch out the enormous help of these two simple tips. On the one hand the tunnelling consists to our experience up to now a piece of oral teaching and tradition and is not described in the literature. On the other hand duplication of the radial artery is not common but as far as a sufficient Allen test is routinely the only decisive preoperative test for a radial forearm free flap, we want to underline the meaning of the safe harvest in the above described way.
Meta-Bariatric And National Health System Revisited
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Introduction:
Body contouring procedures are essential for post-bariatric patients to overcome most of their functional and psychological issues as well as enhance their self-confidence and quality of life. To the majority of these patients, it also represents the endpoint of a long treatment path.

Our study aimed at recording and analyze the data of patients who underwent body-contouring operations after massive weight loss in our Department from 1/1/2004 to 31/12/2017 and compare it with its equivalent we presented at ESPRAS 2014 in Edinburgh, using the same methodology.

Patients-Methods:
We recorded the patients' demographic data, type of procedures, time gap between body-contouring and bariatric procedures, complications and reoperation rate.

Results:
137 patients underwent body contouring procedures during the last thirteen years. Mean age of the patients was 37 years (14-72 years). Female/male ratio was 102/35. Mean body mass index before the body contouring operation was 29,32Kgr/m² (19,38-44,57) and the mean BMI difference before and after the bariatric procedure was 18,3Kgr/m² (6,09-36,21). Meantime between these two procedures was 25 months. The most common procedure for men was male breast reduction and for women breast reduction/mastopexy.

Complications were recorded for 26/137 patients with 12 patients undergoing reoperation.

We also noted in comparing this study with the former one, that while there was an overall decrease in general demand for post-bariatric surgery body contouring procedures, over the last 3 years the percentage of abdominoplasty increased to 61%.

Conclusion:
Severe obesity prevalence is constantly increasing worldwide during the last decades. Bariatric surgery, although an effective treatment, leads to a formation of a new group of patients with functional, psychological and social issues. The Public Health Sector, despite the limitations of funding for such procedures, can offer a comprehensive solution to their problems, restore part of their lost self-esteem and help them reintegrate in society.
Body Contouring
Gluteal Augmentation Techniques: A Comprehensive Literature Review
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Background:
Many studies of gluteal augmentation techniques have been published in recent decades, including case reports, retrospective and prospective case series, and multicenter survey reviews. However, to date, there has been no study of the overall complications or satisfaction rates associated with the broad spectrum of techniques.

Objectives:
The authors performed a comprehensive literature review to determine outcomes and complications of gluteoplasty techniques, including patient satisfaction.

Methods:
A search on PubMed/Medline was performed for clinical studies involving gluteal augmentation techniques. A priori criteria were used to review the resulting articles.

Results:
Fifty-two studies, published from 1969 through 2015, were included – representing 7834 treated patients. Five gluteal augmentation techniques were identified from these studies: gluteal augmentation with implants (n = 4781), autologous fat grafting (n = 2609), local flaps (n = 369), hyaluronic acid gel injection (n = 69), and local tissue rearrangement (n = 6). The overall complication rates of the most commonly utilized techniques were: 30.5% for gluteal augmentation with implants, 10.5% for autologous fat grafting, and 22% for local flaps. Patients’ satisfaction was reported as consistently high for all the five techniques.

Conclusions:
Implant-based gluteal augmentation is associated with high patients’ satisfaction despite a high complication rate, while autologous fat grafting is associated with the lowest complication rate yet including serious major complications such as fat embolism. Local flaps and local tissue rearrangements are the ideal procedures in case of massive weight loss patients. A paucity of data is available for hyaluronic acid gel injections, which appear to be effective but temporary and expensive.
Breast Aesthetic
Transaxillary High Level Dual Plane Breast Augmentation Assisted with Free Style Endoscopic Technique
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Objectives:
To evaluate the safety, reliability and effectiveness of “free style endoscopic technique” assisted transaxillary high level dual plane breast augmentation.

Method:
Using new endoscopic techniques to perform transaxillary dual plane breast augmentation. The muscle division line is about 1.5cm higher than the original inferior mammary fold, the cephalic side of the muscle is retracted to the lower border of the areola with a special retractor to form a high level dual plane cavity. “Free style endoscopic techniques” refers to the endoscopy and retractor are not fixed to each other, thus the space is exposed by an assistant with a new designed special retractor, while the operator is concentrate on dissecting with endoscopy in one hand and long tipped bowie in the other hand.

Result:
There were 1106 cases underwent this kind of surgery, while 405 of them, whose minimum follow up were 12 months were included in this retrospective study. The follow up period ranged from 12-60 months, the average follow up period is 24.3 months. The average operation time is (1.47 ±0.46) h, the average drainage removal time is (4.23±0.51) day after surgery. The perioperative complication rate is 0.99%, including an incision site change caused by intraoperative bleeding, 1 case of pneumothorax, 2 cases of bleeding after surgery. Long period complication including: 6 cases (1.48%) III grade capsular contracture, 21 cases (5.2%) of nipple-areola sensation disorders, implant palpable occurred in 14 case (3.46%), 3 cases (0.74%) implant malposition, 2 cases (0.49%) implant distortion, the total reoperation rate is 2.47%. there was no infection, hematoma, seroma, curtain deformity, double bubble deformity occurred in our study.

Conclusion:
The high level dual plane techniques not only can solve the deficient soft tissue coverage problem thus to lower the rate of implant palpability, but also can relieve the relationship of the pectoralis major muscle and the IMF, offering an option to replace II and III type of dual plane techniques, decrease the risk of curtain deformity and double bubble deformity. The free style endoscopic techniques are very flexible and efficient, with the help of accurate navigate technique, it can archive an accurate cavity dissection, accurate and definite IMF, and a lower complication rate. Though the learning curve is relatively longer, it is really a safe and effective breast augmentation method worthwhile to learn and spread.
Breast Reconstruction
Breast Reconstruction With External Tissue Expansion-Assisted Autologous Fat Grafting

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Objective:
To investigate the application and therapeutic effect of external tissue expansion-assisted autologous fat grafting for delayed breast reconstruction. Methods Patients began wearing the Brava negative pressure system 8 hours a day for recipient tissue expansion for one month before a fat grafting procedure. After fat grafting, Brava was recommended be worn 8 hours a day from postoperative 48 hours to one month. The interval of each fat grafting procedure is 2.5 to 3 months. The procedures were repeated until the completion of breast reconstruction. Water-Jet assisted liposuction and subcutaneous release of scars were also performed during surgery.

Results:
From January 2013 to November 2016, 29 patients were followed-up for 12 to 58 months, with average of 31.6 months. 28 patients completed the external tissue expansion-assisted autologous fat grafting breast reconstruction. Completion required 1 to 6 procedures, with average of 3.4 procedures. The total initial fat fill volume for each breast was ranged from 200 to 1000 ml, with average of 583.7ml. The initial fat fill volume for each breast per operation was ranged from 92.5 to 243.7ml, with average of 173.8ml. One patient underwent latissimus dorsi myocutaneous flap breast reconstruction after 3 fat grafting procedures. 8 patients completed the inframammary fold reconstruction. 3 patients underwent breast lift, 1 patient underwent lipofilling augmentation for the contralateral side. Postoperative satisfaction rate was 82.8% in patients and 75.9% in surgeon. Complication statistics: 5 cases of palpable nodules which recognized as fat necrosis (17.2%), one case of nontuberculous mycobacterial infection (3.4%) and one case of locoregional cancer recurrence (3.4%).

Conclusions:
External tissue expansion-assisted autologous fat grafting is a minimally invasive procedure for breast reconstruction. Satisfactory results could be obtained for most of the patients who would like to choose fat grafting and have enough fat deposit in other parts of the body.
Single-Stage Prosthetic Reconstruction In Postmastectomy Patients
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Prosthetic Breast Reconstruction is most commonly performed using the two-stage (expander-implant) technique. However, with the advent of skin-sparing mastectomy and the use of acellular dermal matrices, one-stage prosthetic reconstruction has become more feasible. Many studies have suggested that one-stage reconstruction has economic advantages relative to two-stage reconstruction despite a higher revision rate.

We present you the results after performing 18 direct-to-implant reconstructions in our department in the past year. Direct-to-implant breast reconstruction is the dominant strategy when used appropriately. Surgeons are encouraged to consider single-stage reconstruction when feasible in properly selected patients.
Background: Knowledge of modifiable risk factors, increasing mortality, is essential when advising cancer patients on their lifestyle. It is evident that smoking is causing disease and increased mortality in general, and on this basis, we strongly advise our breast cancer patients to cease smoking. Still, a surprisingly low number of these patients quit smoking. Recently published data are now suggesting that smoking might increase both the overall mortality in women diagnosed with breast cancer but also increase their risk of dying from their breast cancer disease. This could, potentially, be a new powerful motivational factor when advising these patients on their lifestyle. The aim of this systematic review and meta-analysis is to summarize all published data on the effect of smoking on the mortality of breast cancer.

Materials and methods: A systematic review and meta-analysis on smoking status in women diagnosed with breast cancer, their mortality rate and cause of death. Based on all cohort studies published within the last ten years.

Results: Twelve studies met our inclusion criteria. 400 944 women diagnosed with primary invasive breast cancer were included. Hazard Ratio (HR) for breast cancer associated death in former smokers was 1.02 [0.93, 1.12] (fig. 4) and for current smokers 1.28 [1.17, 1.41] (fig. 5) when compared to never smokers. For all-cause death, the HR for former smokers was 1.12 [1.04, 1.19] (fig. 2), and for current smokers 1.52 [1.32, 1.76] (fig. 3) when compared to never smokers.

Discussion/Conclusions: This large systematic review and meta-analysis found a 28% increase in breast cancer-associated mortality in those who were current smokers compared to never smokers. The mortality in former smokers was equal to the one found in never smokers. These results suggest, that breast cancer patients ceasing to smoke, can lower their risk of dying from their breast cancer disease dramatically and possibly regain the risk of a never smoker.

Breast Reconstruction With Autologous Tissues
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Plastic breast reconstruction after mastectomy has been inseparable within the last 15 years with cancer breast surgery, one of the most frequent malignant diseases in the female population with frequency in Europe 70-100 new cases/100,000/year and around one in 10 women in health developed countries.

Purpose
Illustrative presentation and study within one year (2016-2017) of the results of three different second intention reconstruction techniques after simple mastectomy.

Material-methods
Patients (n = 11) with breast reconstruction.
Technical selection criteria: body type, postoperative scar, patient's desire.
Group a: Pedicled (or attached) flap TRAM flap (n = 1)
Group b: Free TRAM flap/DIEP unilateral (n = 2)
Group c: Free TRAM flap/DIEP bilaterally (n=4)
Group d: Fat transfer (n = 4)

Results
In all patients the postoperative outcome was judged entirely satisfactory from the patients. The postoperative course was uneventful, with the exception of one patient (Group c) in which, immediately postoperatively, re-operation was needed due to arterial anastomosis rupture and hypovolemic shock with eventual loss of the flap.

Conclusions
The surgical and cosmetic result of every technique is judged primarily by the selection and the thorough preoperative personalized pattern.
Breast reconstructive surgery employs various operative techniques in order to recreate back the image and shape of a natural-looking breast that is warm to the touch and improve the quality of life be it as an aesthetic or psychological measure.

These include, but are not limited to: 1. Mastopexy / reduction techniques – periareolar, vertical scar and inverted T techniques, associated or not with prior liposuction techniques; and 2. reconstructive techniques: immediate reconstruction with implants, two stage reconstruction with tissue expanders and implants, pedicle flap (latissimusdorsi, TRAM, DIEA) and free flap- (TRAM, DIEP, SGAP, IGAP) etc. These have been engineered to treat ptotic breast, gigantomastia and postmastectomy patients with breast cancer.

It is mandatory to restore the volume within the skin envelope. The choice of technique depends on the type of the diseased breast, shape and volume of the contralateral breast.

The number of procedures is rapidly increasing to achieve a better result and patient satisfaction. Postoperative complications such as capsular contracture infection, prolonged healing, implant loss etc. are more frequent with patients who undergo adjuvant radiotherapy. Satisfaction levels are a tabu. Nevertheless it has been met with substantial improvements.

A co-surgeon technique with one team performing a mastectomy and the other the primary reconstruction has also been performed.

We present 20 patients with breast reconstruction procedures, namely latissimusdorsi flap, tissue expander and primary reconstruction with prosthesis after subcutaneous mastectomy, treated in the Plastic Surgery Department of the Clinical center of Montenegro in Podgorica, Montenegro.
Immediate Breast Reconstruction Using A Deepitheliazed Flap From The Lower Pole Of The Breast

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Introduction:
Breast cancer is a relatively common form of cancer among women that traumatizes woman’s body image and femininity. Immediate and delayed breast reconstructions are the options most used in order to restore breast contour and volume.

Methods:
42 women with early stage breast cancer were operated by our team during the last 7 years with skin sparing mastectomy and immediate reconstruction using a deepithelized skin flap with subcutaneous tissue from the lower pole of the breast. During follow up we assessed post-operative complications along with patient's satisfaction, body image perception and psychological condition.

Results:
After at least 1 year follow up for each patient we recorded only 2 cases of partial necrosis of the skin from the upper pole flap. We had no other major complications. All patients were satisfied from the cosmetic outcome with restoration of body image and better psychological function.

Conclusions:
Immediate with mastectomy breast reconstruction using a deepithelized, with skin and subcutaneous fat, flap from the lower pole of the breast is a safe and aesthetically acceptable procedure. It is best indicated for women with ptotic breasts, average breast volume and abundant breast skin. There is only one case-report in the literature of a similar procedure using a perforator-based inframammary de-epithelized flap for breast reconstruction.
Breast Reconstruction With The Use Of Latissimus Dorsi Flap
In The Ongologic Institute
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Introduction:
The purpose of this study is the presentation of our extended experience in breast reconstruction after mastectomy with the use of myocutaneous, pedicled flap of Latissimus Dorsi muscle (LD).

Material-Methods:
We studied our patient files that have submitted to first stage breast reconstruction using the latissimus dorsi flap from 2012 to 2017. We collected data such as epidemiological factors, radiotherapy before surgery, the use of chemotherapy, post-surgical complications and we came to safe conclusions about the use of LD.

Results:
From 2012 to 2017 158 breast reconstructions, using the LD flap, were performed in our hospital. Among them 79 were accomplished to the left breast, 75 to the right and 4 to both breasts. In 4 cases only LD with no implant was used (skin and muscle) and in 6 cases only muscle with no skin island (along with the implant). Patients were submitted to radiotherapy before the operation in most of the cases. The use of LD was combined with simultaneous application of tissue expander in most of our patients. Wound dehiscense, haematoma and inflammation were some of the complications with total flap necrosis being only one case.

Conclusions:
The LD myocutaneous flap is the flap most frequently used for breast reconstruction, especially in patients who have received radiotherapy pre-surgically. LD provides good volume and cosmetic result along with a tissue well vascularized for better protection of the implant. Consequently, we conclude that LD is a safe flap with good vascularity that restores the projection and the natural shape of the breast.
Expander-implant breast reconstruction can be employed in all patients provided that they have not been previously irradiated. Factors including the type of mastectomy, timing of reconstruction, tissue expansion and implant design have made expander-implant techniques an important method for breast reconstruction.

An alternative technique that is named “inferior dermal flap with tissue expander” at the first stage of breast reconstruction after mastectomy is currently under development in our unit. The granular removal is performed through a wise pattern access. An inferior dermal flap is de-epithelialized and the mastectomy then follows with special care in preservation of subdermal vascularity of the cutaneous flaps. Once the granular removal has been completed, the pectoralis major muscle is dissected from its inferolateral attachments. This structure is then sutured with the dermal-adipose inferior flap and a large combined pouch is finally harvested. After drain insertion, we can position the tissue expander and close the pouch. Afterwards, we suture the skin flaps with the final inverted T scar.

This technique provides extremely satisfactory cosmetic results with a natural ptosis, better breast shape and protects the tissue expander from exposition in case of skin necrosis. The most usual complication is the necrosis of the T junction which results in delays in further reconstructive procedures and oncological treatments. Consequently, an accurate selection of patient candidate to this technique is mandatory. Heavy smokers and patients with skin of poor quality are excluded.
Patient Satisfaction After Mastectomy And Breast Reconstruction  
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In today’s increasingly competitive health care market place, patient satisfaction has become an important measure of quality. In ongoing Research we have aimed to study the prevalence and determinants of dissatisfaction with cosmetic outcome after breast cancer surgery of cancer survivors. The Results are being collected through questionnaires on cosmetic appearance quality of life (EORTC-QLQ-C30). Cumulative logit models were used to examine the adjusted association between dissatisfaction with cosmetic appearance and demographic and clinical characteristics. We are looking at and going to present tumor characteristics and treatment by satisfaction with cosmetic appearance. In addition, we will study satisfaction with cosmetic appearance using cumulative login models, adjusted for tumor stage and type of surgery. Everything will be based on patients whose treatment was carried out in Cyprus.
Utilising The Falciform Ligament In Pedicled Omental Flap Breast Reconstruction Following Wide Local Excision Of Recurrent Malignant Phyllodes Tumour

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Introduction and Aims:
We present the case of a 52-year-old female with a large recurrent Phyllodes tumour of the left breast, who following two excisions and Latissimus Dorsi flap reconstruction, underwent two-stage reconstruction with a pedicled omental flap and split thickness skin graft.

Material and Methods:
At her original mastectomy in March 2017, the breast specimen excised weighed 8.6kg. The patient had found a lump in her breast six months prior and had been admitted to hospital with increased breast swelling and sepsis. There was local recurrence around the mastectomy scar and the patient underwent a second excision with a pedicled Latissimus Dorsi flap five months later.

Three months later, there was a second large recurrence and at this stage, two Consultant Plastic Surgeons performed a wide local excision of the recurrent tumour and through a midline laparotomy incision, mobilised a pedicled omental flap to cover the defect left in the anterior chest wall. The omentum was raised on the gastroepiploic artery pedicle and rotated to cover the defect. At her second excision, tumour was excised en bloc in conjunction with pectoralis major, pectoralis minor, skin and lymph nodes.

Key findings:
The falciform ligament was dissected and used to reinforce the abdominal wall defect that the omental pedicle was delivered through. Post-operatively, the split thickness graft to her left breast has healed well as has the donor site and the patient has made a good recovery.

Conclusion:
This case report highlights the use of an omental flap harvested from an open midline laparotomy in breast reconstruction as a final port of call in the management of difficult breast cancer clearance and novel use of the falciform ligament to reinforce this pedicled flap.
Free DIEP Flap Reconstruction
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A 60 year old female underwent bilateral mastectomies with axillary node clearance, followed by chemotherapy and radiotherapy, and a year later, was referred for bilateral breast reconstruction with expander/implant. However, she subsequently required a total of 22 procedures to ameliorate and improve her appearance, and finally underwent bilateral explantation of implants due to recurrent infections.

Since then, she has not undergone any further reconstructive procedures, preferring to remain isolated in her house due to her poor psychological status as a result of the multiple operations and poor functional and aesthetic outcome.

Recently, she has been experiencing recurrent wound breakdown and pain at the mastectomy sites, and despite her previous history, was re-offered reconstruction with expanders/implants.

Although she has had multiple operations and previous abdominal surgeries including open cholecystectomy and midline laparotomies for peritonitis, our team felt that a free DIEP flap would be the only adequate reconstructive option available, despite the relative contraindications to this procedure.

She underwent this procedure recently with a unilateral reconstruction using a DIEP flap, and has made a remarkable recovery without any significant complications.

We believe that this case illustrates and highlights the dangers of repeated unsuccessful surgical interventions which in this instance resulted in extensive scarring and wound healing issues, together with major psychological sequelae. A total of 23 breast surgeries prior to our intervention with a free DIEP flap, made for a complex case both due to the complexity of the reconstruction and the patient's poor psychological status. The result however, was excellent with high patient satisfaction and emphasises the versatility and dependability of the free DIEP flap.
Personality Traits As Predictors Of Quality Of Life And Body Image After Breast Reconstruction – A Prospective Cohort Study

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Aim/Background:
It has been suggested that personality traits may influence patient-reported outcomes of breast reconstruction, but the research is limited. We investigated, in a prospective study, whether personality traits predict the achieved body image and Quality-of-Life (QoL) after breast reconstruction.

Materials and Methods:
Patients planned to undergo breast reconstruction at a University Hospital were consecutively recruited from January 2014 to January 2016. Participants completed validated measures of personality, body image, and QoL, prior to and six-months after breast reconstruction. The influence of personality traits on achieved body image and QoL was explored with multivariate linear regression modeling, adjusting for baseline scores, demographics, and clinical variables.

Results:
Of 247 eligible patients, 208 (84%) participated. Twelve patients (6%) were excluded due to failed reconstruction. Of the remaining 196 patients, 180 (92%) completed the follow-up questionnaire. When adjusted for baseline QoL scores, higher trait Neuroticism, higher trait Openness, and higher Body Mass Index (BMI) measured at baseline showed to be independent and statistically significant predictors of deteriorating QoL scores from baseline to six-month follow-up (p<0.001, R2=0.45). When adjusted for body image scores at baseline, higher trait Neuroticism and immediate reconstruction were found to be independent predictors of poorer body image from baseline to six months follow-up (p<0.001, R2=0.36).

Discussion/Conclusions:
The present study suggests personality traits, in particular Neuroticism, as independent predictors of the achieved body image and QoL after breast reconstruction. Weighing in the personality traits of the patients may be an important adjunct in improving patient-reported outcomes after breast reconstructions. Furthermore, we are currently collecting two-year follow-up data, which are expected to be completed during the first half of 2018.
Identification Of Breast Tumours From Diathermy Smoke By Differential Ion Mobility Spectrometry

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Background:
Breast cancer is the most frequent cancer in women worldwide. The primary treatment is breast-conserving surgery (BCS) or mastectomy with an adequate clearance margin. Diathermy blade is used extensively in BCS. Surgical smoke (SS) produced as a side product has cancer-specific molecular features. Differential mobility spectrometry (DMS) is a rapid and affordable technology for analysis of complex gas mixtures. In our study we examined SS from malignant and benign breast tissue created with a diathermy blade using DMS.

Method:
Punch biopsies of 4 mm diameter from breast cancer surgical specimens were taken during gross dissection of fresh surgical specimen and placed in a well plate. The measurement system is a further developed model of a custom-built device called automatic tissue analysis system ATAS. Each specimen was incised with a diathermy blade and the surgical smoke was analyzed using DMS.

Results:
We examined 106 tumour samples from 21 breast tumours. Benign samples (n = 198) included connective breast tissue (n = 82), adipose tissue (n = 88) and vascular tissue (n = 28). The classification accuracy when comparing malignant samples to all benign samples was 87%. The sensitivity was 80% and the specificity was 90%. The classification accuracy of tumours to ductal, lobular and invasive micropapillary was 80%.

Conclusion:
Benign and malignant breast tissue can be identified with ATAS. These results lay foundation for intraoperative margin assessment with DMS from SS.
Congenital Breast Asymmetry: A Crossroads Between Aesthetic And Reconstructive Breast Surgery

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Introduction:
Breast symmetry is an integral part of feminine beauty and marked asymmetry results in low self-esteem and poor quality of life. Surgical treatment requires high surgical skills and an increased sense of artistry; thus a secondary operation to further restore breast symmetry is often needed.

Materials and Methods:
Fifty four women with breast asymmetry of various degrees that underwent surgical intervention were recorded. An analysis of patients' demographic data, operative technique and method of symmetrization, reoperation and complication rate was conducted.

Results:
Women with a mean age of 29 years (18-45) were surgically treated for breast asymmetry, during the last 8 years. Patients suffered from various degrees of asymmetry and tubular breasts were consistently the most common feature (81%) in our series of patients. In half of our patients the surgical intervention included both breasts. Implant-based operations were the mainstay of surgical approach and the volume added ranged from 200-320 cc. Breast-expanders were used in one patient and two patients were treated exclusively with lipotransfer. In eighteen women (33%) a secondary operation was necessary to achieve a more aesthetically pleasant result. Areola widening (5/54), hypertrophic scars (2/54) and infection that required implant exchange (1/54) were the recorded complications.

Conclusion:
Breast asymmetry consists one of the most challenging problems in breast surgery. Tubular breasts comprise the main deformity and this is in total agreement with bibliographic evidence. Secondary operation is a common practice in patients with mild or severe asymmetry and should be considered in every woman that undergoes breast symmetrization.
Autologous Breast Reconstruction: A Retrospective Analysis Of The Last Two Years

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Breast cancer is a common malignancy in women with significant physical and psychological morbidity. Immediate or delayed breast reconstruction should be offered to all patients after total mastectomy. Breast reconstruction with autologous tissues can achieve excellent results, although the risk of flap failure cannot be neglected.

The authors report their experience in breast reconstruction with autologous tissues between January 2016 and December 2017. 18 women were submitted to immediate reconstruction and 25 to secondary reconstruction; a bilateral reconstruction was performed in one case. In total, we performed 20 reconstructions with pedicle flaps, and 24 with free tissue transfers. The latissimus dorsi myocutaneous flap was the most common pedicle flap used in breast reconstruction, with 13 cases; transverse rectus abdominis muscle (TRAM) flaps were performed in the remaining cases. Regarding free flaps, the deep inferior epigastric artery perforator (DIEAP) flap was used in 22 reconstructions, and in two cases we performed a transverse upper gracilis (TUG) flap. In the pedicle flap group there were no total flap failures, but partial necrosis occurred in 10% of the cases, which was handled with surgical debridement, dressings and antibiotherapy. In the free flap group, we report 2 cases of total flap failure due to venous congestion after unsuccessful surgical revision. Five free flaps were salvaged after anastomosis reexploration. The donor site morbidity was lower in the free flap group.

Mastectomy defects can be efficiently treated with autologous tissues, which can achieve excellent functional and cosmetic results, with a low complication rate. The DIEAP flap is nowadays the gold-standard for breast reconstruction; however, other options like the TUG flap or pedicle flaps should also be considered in selected cases.
The Impact Of Postmastectomy Radiotherapy On Two Stage Tissue Expander-Implant Breast Reconstruction

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Background:
Postmastectomy Radiotherapy (PMTR) is increasingly indicated in patients with node positive breast cancer. The purpose of this study was to compare the outcomes between irradiated and non irradiated expander-implants breast reconstruction.

Materials:
The medical records of 63 patients who underwent a two stage breast reconstruction were recorded. The patients were first classified into those who received PMTR and those who were not. Patients who received PMTR were then classified as having undergone tissue expander-implant exchanges early (<6 months after PMTR) and late (>6 months after PMTR).

Results:
63 patients were identified as having undergone 78 two stage tissue expander-implant breast reconstruction. 32 reconstructions received radiotherapy and 46 reconstructions were not irradiated. There was a significant difference in overall complication and reconstruction failure rate between the two groups. 10 reconstructions underwent exchanges in less than 6 months after PMTR and 22 underwent exchange in more than 6 months after PMTR. There was no significant difference in overall complication rate, although patients who underwent exchange earlier had a higher rate of infection and those later a higher rate of capsules contracture.

Conclusion:
PMTR remains an undesired event when pursuing an implant-based reconstruction, although it is not a contradiction. Technical strategies to prevent complication described now allow better results, should be known and improved in the future. However the timing of exchange in the setting of PMTR does seem to affect the overall complication rate, although it may impact the type of complication encountered.
Breast Surgery
Broken capsule 20 Years after Breast Implant without rupture of the prosthesis
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Purpose:
Case report of a female patient, age 49 years, after 20 years of breast implant inclusion presented capsular rupture at the Magnetic Resonance Examination.

Method:
Case report of a female patient, age 49 years, after 20 years of breast implant inclusion presented capsular rupture at the Magnetic Resonance Examination.

Results:
The patient H.V.M.F., At 42 years of age was submitted to inclusion of breast implant by areolar incision in the subglandular level, and implant with size of 155cc. After 20 years of surgery, in a routine gynecological visit the patient presented the complaint of stiffness of the left breast and an MRI of the breasts was requested.

RNM Award:
Images suggestive of left intracapsular rupture.

Conclusion:
We note that the patient must have made a silent rupture of the fibrous capsule without compromising the implants, and as she did not notice the rupture of the capsule she lived with fibrosis tissue with scarce vascularization with necrosis of the fibrous tissue
Mammary Implants, One Size Fits All? - A Retrospective Study
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Background:
Implant sizers are normally used intra-operatively to estimate required implant size following mastectomy, however mammographic measurements can aid in estimating breast volumes pre-operatively. But calculations involved are either too complex or require special parameters, like compression thickness, to make it practically popular. This audit aims to simplify the formula to allow easy estimation of implant size using mammography pre-operatively, thereby guiding hospitals to tailor the amount of required implants.

Methods:
This was a retrospective study of 131 patients undergoing non skin sparing mastectomy with immediate reconstruction from 2015 to 2017. We excluded patients who were D cup or larger, underwent skin reducing mastectomies, those who had flap based construction and those who already had implants insitu. The mammograms were interrogated and the width and height on the cranial-caudal view was recorded. The estimated implant size was then calculated from the following formula: Estimated implant size(ml) = \(\pi \times \text{Height(cm)} \times (\text{Base Width(cm)}-3)\). From our local database the actual implant size was then retrieved and results were then analysed.

Results:
Following exclusion of the criteria 97 patients were analysed. The mean implant size used in within the patient was 286ml and the mean calculated implant size was 318ml. The range of implant sizes used was from 215ml to 415ml. 77% of the patients had the implant size estimated within 100mls, 51% of patients had their implant size accurately estimated within 50mls and 30% of patient predicted within 30mls.

Conclusions:
This formula using the cranio-caudal mammographic view is a practical and quick was of estimating implant sizes pre-operatively. However the formula will require further work to increase sensitivity and give an accurate estimation in tighter range.
Breast Surgery - General
The McKissock Vertical Bipedicle Technique: A Reliable Method of Reduction Mammoplasty in the Treatment of Gigantomastia and in Balancing the Contralateral Breast in Oncoplastic Mammectomy.

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Aim:
To present our experience with the McKissock vertical bipedicle technique in the treatment of gigantomastia and for the symmetrization of the contralateral breast in cases of resection of breast cancer and immediate reconstruction.

Materials and Methods:
126 female patients were subjected to the McKissock reduction mammoplasty procedure in our institute in the last 5 years. Out of these, 34 were treated for gigantomastia (ages from 35 to 58 years, ) while the remaining 92 (ages from 38 to 64 years, ) received the procedure in order to construct a symmetric contralateral breast after the resection of breast cancer with simultaneous reconstruction in one side. 3% of the total had diabetes mellitus (3 non insulin-dependent, 1 insulin-dependent) and 15% (19 patients) received medication for hypertension. The procedure included the initial de-epithelization of the vertical bipedicle, the lateral and medial wedge excisions and the suture of the lateral breast flaps over the bipedicle after the positioning of the nipple in its new site.

Results:
The final cosmetic and functional results as far as the appearance and symmetry of both breasts and the eradication of symptoms of increased weight and vertebral column problems were concerned were very satisfactory in all of our patients. All 19 hypertensive patients received a soft silicone suction drain to reduce the possibility of seroma formation after surgery. No serious trauma infections were observed except for seven patients with cellulitis (1 with IDDM and 1 with NIDDM) that were treated conservatively.

Discussion:
The McKissock procedure has proven to be a reliable method of breast reduction in the treatment of both gigantomastia and for the symmetrization of the contralateral breast in oncoplastic breast surgery. The method is relatively easy to apply and produces very satisfactory cosmetic and functional results with minimal postoperative discomfort and minor complications.
Role Of Lipomodelling In Patients Undergoing Reconstructive Breast Surgery
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Lipomodelling is one technique, originally described over a century ago, to provide an effective way of restoring and even improving the look and aesthetics of the reconstructed breast.

We collected data on 35 patients who have undergone lipomodelling from January 2014 to December 2017. All the patients underwent lipomodelling following implant-based breast reconstruction. Four patients in our study group had bilateral lipomodelling, two required 3 sessions and nine patients required 2 sessions. 3 of our patients developed postoperative complications (2 patients fat necrosis and 1 patient oil cysts.) 30 Patients (86%) were satisfied with postoperative cosmetic outcome.

Lipomodelling offers an additional tool to refine breast reconstructive surgery. With the added advantage of being autologous, the procedure is safe and effective.
Best Breast Concept - Secondary Breast Reconstruction Using 3D Template Enhanced Innervated Free DIEP Flap

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Autologous breast reconstruction has become the golden standard of reconstruction after oncologic treatment for breast cancer. Its importance is even more profound in cases of secondary breast reconstruction, where there’s a deficiency of soft tissue and skin envelope and in some cases even additional tissue damage due to radiotherapy. For the purpose of achieving a better aesthetic result, the principle of 3D template enhanced secondary breast reconstruction was developed at our department. In recent years the concept of innervated autologous breast reconstruction has evolved. By combining the advantages of both methods we want to pursue the reconstruction of a breast as similar to the pre-oncologic breast as possible - the best breast concept.

To pursue the concept patients, who are candidates for secondary autologous breast reconstruction, will be invited to participate. The breast will be reconstructed with autologous tissue (deep inferior epigastric perforator flap) using 3D template from the contralateral healthy breast and additionally coaptation of the anterior branch of the 3rd intercostal nerve with the dominant lateral intercostal nerve innervating the DIEP flap will be performed. To evaluate the results, patients will be requested to complete the BREAST-Q questionnaire before the reconstruction and at the end of the follow up. The sensibility of the flap will be tested on predefined areas of the reconstructed breast in intervals of 6, 12 and 24 months after the reconstruction.

According to previous studies sensibility of the reconstructed breast after innervated autologous breast reconstruction contributes significantly to the satisfaction of patients. In selected patients breast reconstruction using 3D template from the contralateral healthy breast can produce results that are superior to traditional methods of autologous tissue shaping, as in the cases of secondary breast reconstruction the weight of the removed breast and postmastectomy skin envelope is not available.

With the advantages of both methods combined, we could get one step closer to the ideal reconstructed breast. We would like to present the preliminary results of our best breast concept.
Management Of Gynecomastia – Changes In Psychological Aspects After Surgery - A Systematic Review.

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Background:
Gynecomastia affects up to two-thirds of the male population. For many patients, the psychological impact of the disease is substantial. Surgical treatment is indicated when medical treatments fail. Until now, most published research on the subject has focused on how effective surgical treatment is on correcting the cosmetic appearance of the breast. Little is known about the effect of surgical treatment on the psychological aspects of the disease. The aim of this systematic review is to identify the psychological domains affected by the disease and the effect of surgical treatment on these. This is the first systematic review on this subject.

Methods:
A systematic search of the published literature was performed. All studies on the subject were evaluated for inclusion. Six studies were included in the review.

Results:
Several of the included studies reported improvement in Quality of life and on several psychological domains, after surgical treatment for gynecomastia. Among these domains were; vitality, emotional discomfort, limitations due to physical aspects and limitations due to pain.

Conclusion:
Surgical treatment of gynecomastia seems to be beneficial for several psychological domains. Among these are vitality, emotional discomfort, limitations due to physical aspects and limitations due to pain. There is a trend of improvement in Quality of Life and psychological health. The results are, however, based on data for a patient population in their mid-twenties and are therefore not representative of all men affected by gynecomastia. Future studies should include data from older individuals affected by gynecomastia and utilise valid tools of psychological measurement in order to better quantify the effect. The older patients affected by the disease have been overlooked in the current research. More data on this subject could improve the pre-operative evaluation of these patients and help identify the patients that will benefit from treatment.

Sollie M. Management of gynecomastia— changes in psychological aspects after surgery— a systematic review.

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Patient Protection Issues: The Use Of Prophylactic Antibiotics And Drains In 126 Patients Undergoing Reduction Mammaplasty In Our Institute In The Last 5 Years.

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Aim:
To present our experience and results with the use of routine antimicrobial prophylaxis and with the differential use of drains in female patients that underwent reduction mammaplasty in our department.

Materials and Methods:
In the last 5 years 126 patients were subjected to vertical bipedicle reduction mammaplasty to treat gigantomastia (34 patients, ages from 38 to 70 years, mean 52 years) or to balance the contralateral breast after the resection of breast cancer with simultaneous reconstruction in the other side (92 patients, ages from 48 to 75 years, mean 59 years). 3% of the total (4 patients) had diabetes mellitus (3 non insulin-dependent, 1 insulin-dependent) and 15% (19 patients) had hypertension, all well controlled under pharmacological treatment. All hypertensive patients had their lateral flaps sewn over a soft suction drainage that was left in place for 2-4 days postoperatively. All patients received prophylactic treatment with cefoxitin or cefuroxime (2nd generation cephalosporins) for the prevention of postoperative infections.

Results:
No major complications like pyogenic infections, wound dehiscence or flap necrosis occurred. Seven patients, one of whom with IDDM and another with NIDDM presented cellulitis from 2 to 5 days postoperatively. All were successfully treated conservatively by prolonging the administration of antibiotics or by changing to another regimen. No significant postoperative seromas were witnessed in our series.

Discussion:
The routine use of one to three doses of prophylactic antibiotics seems to have eradicated all serious infectious complications in our experience with the McKissock operation. Minor infections can thus be successfully treated with the prolongation of the same or the implementation of another regimen. The selective application of negative pressure drainage has also helped in minimizing postoperative seromas. Overall the final cosmetic and functional result was very satisfactory, as a result of the routine or selective application of these patient-protective methods.
Combination Of Periareolar Mastopexy And Skin-Sparing Mastectomy In Female To Male Transsexual Surgery

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Abstract Background:
Transsexual patients should undergo different surgeries to reassign the other sex phenotype. Breast surgery and chest wall contouring is an essential operation in this way. The main goal of these operations is to produce a masculine chest wall. In this study we evaluate the results of combination of periareolar mastopexy and subcutaneous mastectomy in these patients.

Methods:
This case series included 32 patients underwent periareolar mastopexy and subcutaneous mastectomy between 2016 and 2018. All the patients had grade 0-1 ptosis and A or B cup size. The outcome including patient satisfaction and complications such as nipple and skin flap necrosis, nipple sensitivity and secondary surgical rate were evaluated.

Results:
All patients underwent periareolar mastopexy and skin-sparing mastectomy. Mastectomy average weight was 245 gram (185-340). In 23 patients (71.87%) results was completely favorable regarding contour and scars. 7 patients (21%) had contour deformities and lower pole excess tissue that needs another periareolar doughnut excision. In 2 patients partial nipple-areola necrosis with depigmentation and excess skin caused unfavorable results.

Conclusion:
Combination of periareolar mastopexy and subcutaneous mastectomy is a good surgical approach with acceptable aesthetic results in patients with grade 1 and cup A or B size.
Quantifying Fluid Collections In Breast Reduction Surgery In The Breast That Is Not Drained
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Background:
The use of closed suction drainage in primary breast surgery can be omitted without an increase in complications and therefore has shown not to be necessary in qualitative studies. Thus far no quantitative study has been done to study the fluid drainage without drains. Closed suction drainage exerts a considerable amount of pressure on tissues and might increase drainage, therefore the study is aimed to demonstrate what happens with fluid collections in the breast that is not drained and compare that to the breast that is drained in the same patient as control.

Methods:
A group of 12 female patients had breast reduction surgery, without a drain placed in the left breast and drain placed in the right breast acting as control. Drains was removed when less than 30ml of fluid drained per 24 hours. The total drain fluid volume was calculated on the right breast, acting as control. To quantify the residual fluid volume remaining in the right breast after the drain was emptied, a sonar was done and the amount added to the total volume of fluid output. The left breast without the drain had a sonar done at the same time to compare if omitting drains had an influence on the output, and to quantify the time it takes for fluid to resolve in the left breast without the drain. Sonar measurements was done on day 1, 2, and 3 post operation and continued on days 7, 14 and 3 months, to study the residual collections until they fully resolved. The total output of the left breast with the drain was compared to the total output of the right breast that did receive a drain.

Results:
It is concluded that by having a drain inserted, the fluid drainage increase by over 8-fold over the 1st 72 hours, until the drain was removed compared to the side without the drain. Whereby the residual fluid collections increase again on day 14 and reabsorbed completely by 3 months. Omitting a drain does not increase complication rates, unless total breast tissue excised exceeds 2000g per side. Inserting a drain does however increase fluid output.

Conclusion:
Closed suction drainage exerts a considerable amount of pressure on breast tissue and increase fluid drainage. It is safe to omit drains even in large reductions that does not exceed 2000g per side. Eliminating dead space by drains is not necessary.
Algorithm For Treatment Of Poland Syndrome

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The Poland’s Syndrome (PS) was initially described for Alfred Poland in 1841 and is characterized by a set of congenital alterations that involves the chest wall and the ipsilateral superior member. It is a rare illness whose etiology is still unknown. However, studies suggests that it can still have genetic influence or, that extrinsic factors during the pregnancy, can come to intervene with the process of migration of the pectoral major muscle and the separation of the fingers during this period. We defend a detailed clinical evaluation of all the PS cases, in view of the great number of physical alterations and corroborating them with the use of image studies that can be associates with the disease, becoming necessary to discriminate this entities into a degree presentation.

In this study 38 patients were evaluated, with ages between 12 and 53 years, with different levels of thoracic and superior limb compromising. In all the patients were evaluated firstly with simple x-rays of thorax and conventional thoracic CT, complemented in some cases with tridimensional reconstructions from the shape and volume of the cutaneous tissue, bone tissue and interns organs, furthermore the thoracic helicoidal and magnetic nuclear resonance were also indicated in the severe cases. Image diagnosis of thoracic cage alterations seems to be indispensable for treatment, planning and precise surgical approach. Basing in the analysis of the exam complementing the clinical evaluation, the authors suggest the reunion of the cases in different levels depending in the disease presentation in a degree classification. An algorithm for the planning and the surgical treatment also it is presented.
Abdominal Free Flap Breast Reconstruction Outcomes And Cost Analysis Following Implementation Of An Enhanced Recovery Programme

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Introduction:
The deep inferior epigastric artery perforator (DIEP) free flap is considered the gold standard for autologous breast reconstruction. However, its economic viability remains controversial. We present the outcomes and cost analysis of abdominal free flap breast reconstruction (FFBR) at a single hospital following implementation of an enhanced recovery programme (ERP).

Methods:
All abdominal FFBRs performed by the senior authors (CD and SH) were evaluated since implementation of our ERP (2017) and compared with our previous study (2010-2014). Outcomes including hospital stay and complications were retrospectively correlated with patient demographics, comorbidities, tumour characteristics, use of adjuvant therapy, reconstruction type, surgical technique and timings. Actual costs were compared with reimbursement from Health Resource Group tariffs associated with each episode of care. Cost estimates for staffing, consumables, equipment, overheads and inpatient bed stay were provided by our finance department.

Results:
A total of 217 patients (including 45 on our ERP) with mean age 52 years (range 28-79) underwent 246 FFBRs (29 bilateral, 188 unilateral; 139 delayed, 107 immediate). This included 3 transverse rectus abdominis myocutaneous (TRAM), 10 muscle sparing TRAM, 6 superficial inferior epigastric artery and 227 DIEP free flaps.

Prior to our ERP, the mean total theatre time was 331 min (unilateral delayed), 339 min (unilateral immediate) and 452 min (bilateral). Average inpatient stay was 4.4 days. Complications occurred in 31 patients (18%) including 3 flap failures (1.6%).

Following implementation of our ERP, there was no significant difference in complications or flap failure. The mean total theatre time was significantly less (p <0.01) at 277 min (unilateral delayed), 297 min (unilateral immediate) and 378 min (bilateral). Average inpatient stay was also significantly less at 3.7 days (p <0.01). Compared to received reimbursement, the average actual costs for unilateral delayed (£3883), unilateral immediate (£4112) and bilateral (£5128) FFBRs resulted in net profits of £3555, £3327 and £2444 per case respectively.

Conclusion:
Our study allowed us to identify areas to improve service delivery and efficiency. Our ERP has improved outcomes and reduced costs.
Burns
Dr Janžekovic Pioneering Work In Burn Care
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Aims:
Global burns surgery school is based on prof. Zora Janžekovič surgical principles of the treatment of the burn wound. Primary excision in latent infection time is well determined, as well as a secondary burns excision after manifest infection time.

Methods and Results:
Primary excision, followed by immediate skin grafting, is a mainstay in treatment of demarcated deep burns. The optimal time for excision is the 3rd – 4th day after injury, when primary changes in the vessels are diminished and infection in the ducts of adnexa is still latent. The skin is oedematous, thus excision is easier to perform. Consequently, we convert a potentially septic wound into an aseptic one and prevent burn disease. Secondary necrectomy is applied when infection drops down, usually on 19th – 20th day after the injury. Thermal destruction of superficial layers of the skin endangers the viability of the remaining deeper layers. Rapid surgical removal of the necrotic layer and immediate covering with autografts prevents the dermis from infection and additional thrombosis; therefore all the biological capacities of the skin are preserved. A kind of complete morphological regeneration can easily be asserted. Late surgery has a higher incidence of infection.

Conclusions:
The physiological function and appearance of the skin after spontaneous healing of a thermal injury which has affected the dermal zone of the skin seems to be inferior when compared with results achieved by rapid necrectomy and immediate grafting in thermal burns. Clinical and theoretical reasons for such statement are obvious: necrosis- due to infection and thrombosis- advances into the deep layers of the dermis, severe pains, fever and deterioration of general condition develop. Healing is delayed and even conversion of a dermal into full thickness burn may occur. The scar after the spontaneous healing of a dermal burn is disfiguring due to fibrosis, with possible development of keloids and contractures.
Deprivation And Time To Heal In Paediatric Burns Patients In The UK
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Background:
There is an increased incidence in sustaining a burn injury with deteriorating deprivation. The cause of this is unknown, but may be linked to safety education, household overcrowding and geographical barriers such as distance to healthcare, resulting in a lack of engagement with healthcare services. However, it is not known whether deprivation is correlated with delayed healing from burn injuries.

Aim:
Our study aimed to assess whether there is an association between deprivation and length of time to heal following a burn.

Methods:
Burns are often heterogeneous in terms of depth, therefore, this was minimised by only assessing superficial partial thickness burns. The effects of chronic diseases on healing, such as diabetes, were negated by excluding any such patients. Using the International Burn Injury Database (iBID) data from Sheffield Children's Hospital, we identified patient’s sustaining superficial partial thickness burns over a 3-year period (9th April 2013 – 30th March 2016). Length of time to heal was recorded on the nursing discharge documents. The Index of Multiple Deprivation was used for the deprivation measure (1= most deprived; 10= most affluent). Only postcodes from within the Sheffield city boundary were included in the study. The deprivation scores for each postcode are based on the most up to date census data. Data analysis was performed using Excel 2010 and Pearson’s Rank Correlation identified any relationship between the variables.

Results:
383 patients met the inclusion criteria and had adequately documented information on the iBID system. Median Index of Multiple Deprivation was 2, with 188 patients living in the most deprived areas (IMD 1). Median TBSA was 1% (Range 0.1 – 27%). The median length of time to heal was 9 days (Range 2-42). There was no significant correlation between the Index of Multiple Deprivation score and length of time to heal ($r = -0.62$ with a p-value of 0.225).

Discussion:
It may be assumed that patients from increasingly deprived backgrounds may take longer to heal following a burn injury due to increased non-attendance at follow-up appointments, poorer nutrition and health in general. However, this study found no correlation between deprivation and length of time to heal from a burn. We recommend that further research into time to heal should focus on specific factors such as presence of an infection, nutrition status, ethnicity and compliance with standard burns care.
The Factors That Influence The Course Of Treatment And Outcome In Major Burns In The Last 20 Years In One Of Two Slovene Burn Centers

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Introduction:
Burns are a common cause of injury and their treatment is costly. The severity of burns depends largely on the depth of tissue destruction and the amount of body surface affected. Major burns of total body surface area (TBSA) 20 percent and above require treatment in burn centres because of their complexity. The purpose of our research was to identify how different factors influence the treatment of major burn wounds and the outcome of treatment.

Methods:
We performed a retrospective database analysis in University medical centre Maribor between the years 1994 and 2014 inclusive, and included burns that accounted for 20 or more percent of TBSA. We analysed selected components: age and gender, causes of burns, burn degree, areas burned, inhalation injury, type of surgery, treatment with antibiotics, prevention of thromboembolic events with low molecular weight heparin, comorbidity, associated conditions, development of complications after burns, length of hospitalization, treatment in the department of perioperative intensive care, mortality, causes of death and audit operations.

Results:
Statistical data analysis showed the highest incidence of major burns in men aged between 40 and 49 years, most often due to fire. The extent of burned TBSA in our patients was from 20 to 100 %, on average 43 %. The most common area for a burn wound were hands and torso, followed by feet and face. Less than a quarter of patients experienced respiratory burns. Rare patients have had an escharotomy performed, and the vast majority had at least one necrectomy with skin graft cover. Almost all patients received antibiotic therapy; only rarely thromboembolic prevention was not applied. Half of patients had a concomitant chronic illness. The average hospitalization lasted 34 days. Almost half of patients needed treatment at the perioperative intensive care department, with a survival rate of 62 %. The most common causes of death were septic or toxic shock and cardio- circulatory failure. Only 7 % of patients needed a scar revision operation.

Conclusion:
The majority of major burns was recorded in the group of middle-aged men. But in the elderly women are predominant. Because of concomitant illness and other risk factors elderly women as well as men are more likely to have a fatal outcome at a relatively smaller percentage of burnt surface area compared to younger population. Preventive work for minimizing the occurrence of major burns should therefore be targeted at both middle-aged men and older women.
The Diagnostic Value Of Sofa-Score In Critically Ill ICU Burn Patients
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The clinical appearance of burn disease is very similar to SIRS or sepsis. The release of inflammatory mediators, generalized increases in capillary permeability, reduced tissue perfusion, and subsequent organ damage as well as a generalized decrease immune activity result in a complex systemic mediator-mediated reaction.

Sepsis is the most common cause of death of patients with severe burns. It was defined as evidence of at least 2 SIRS criteria and an infective focus or pathogen in blood cultures.

In February 2016 a new definition of sepsis, which was defined as a life-threatening organ dysfunction caused by a dysregulating body response to infection, was introduced. The Sofa score contains specific parameters of 6 organ systems for evaluating the diagnosis of sepsis: Horowitz score, Glasgow Coma score, mean arterial blood pressure, thrombocytes, and creatinine. Thus, the early detection of sepsis is of particular importance in patients with severe burn injuries. In particular the early differentiation between inflammatory disease and sepsis / SIRS is difficult.

Retrospectively, all data were analyzed during the period 2014-2015 from the electronic patient information system. During this period, 296 patients with burn injuries were introduced to the burn unit of Hannover medical school, 136 of them had burn injuries more than 10% body surface 2a-4°. In this group, 13.6% showed one or more septic events in the course of the intensive medical treatment. Already at admission, all patients who had developed sepsis showed at least 2 of the 4 SIRS criteria and 64% of at least 2 sofa score criteria.

The early detection of sepsis is of great importance for an in time and appropriate therapy. Due to the pathophysiological changes of the body function by severely burnt patients, which usually include both the SIRS and the sofa score criteria (> 2 points) from the outset, the diagnosis of sepsis associated with burns is more difficult in this patient group. Further criteria are needed to detect sepsis in time by patients with burn injuries.
Video Demonstrations Of Effective Debriefing Techniques In Burns Simulation: Dealing With Difficult Situations
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Objectives:
Five representative HD video demonstrations of effective techniques to deal with difficult situations which may arise during a burns simulation debriefing session with a participant: “Silence”, “Upset”, “Denial”, “Dominance” and “Uphill” (“SUDDU”). The participant may: remain quiet, get upset, deny the actual debrief, dominate the discussion, be in a higher hierarchy than the debriefer.

Methods:
Video recordings of the scenarios are used to facilitate feedback to the trainees.

Conclusions:
We have devised an approach, named “SUDDU” to manage difficult debriefings.
Video Demonstration Of A Complex Polytrauma Burns Simulated Scenario: Conflict Resolution Within The Multidisciplinary Team.

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Aims:
To educate on methods of conflict resolution within the multidisciplinary burns team within the context of a simulation.

Background:
The consequences of unresolved conflict can be devastating. Workplace conflict was shown to be a factor in patient outcomes; higher death rates correlated with higher levels of conflict between nurses and physicians. Evidence suggests that most of perinatal deaths and injuries were the result of problems with organisational culture and communication among caregivers. Also, workplace conflict was linked to medication errors. Unresolved conflict takes a toll on workers’ physical and emotional health, as well as on relationships with their family. Policy concludes that healthy work environments are essential to ensure patient safety.

Methods:
We created a high-definition video as an example of demonstrating conflict within the burns team members. The clinical scenario is a 26-year-old male who was trapped in a fire, extricated by the paramedics and taken to the Emergency Room 4 hours later. The conflicting priorities within the trauma team are: a. Orthopedics: acute compartment syndrome of the upper and lower limbs, which results in rhabdomyolysis-induced acute kidney failure, multiorgan failure, death – need for fasciotomy, b. General surgery: blunt abdominal trauma, abdominal compartment syndrome, hepatorenal failure, c. Burns: extensive full-thickness burns to the entire body, burns shock, death, hypothermia, fluid resuscitation, need for escharotomy, d. Cardiothoracic: hypoxia, cardiogenic shock, cardiac arrest due to toxins, emboli

Results:
Six critical factors to creating healthy work environments include leadership development and effectiveness, empowered collaborative decision making, work design and service delivery innovation, values-driven organizational culture, recognition and reward systems, professional growth and accountability. These elements are also the building blocks of a successful conflict resolution program.

Conclusions:
The following six strategies are used to resolve conflict: 1. agree on a common goal: patient care first, 2. change the pronouns to "we", 3. listen actively and position equally, 4. set ground rules for the discussion. It’s important to restore professionalism and respect to the dialogue, 5. limit the number of people in the discussion to reduce opportunities for destructive accusations or pointless arguments, 6. think prevention, 7. Establish a shared mental model regarding the patient’s condition based on objective data. Finally, always hold the basic assumption true: everybody within the team is capable, intelligent and striving to do their best to improve.
Hand Burns Surface Area: A Rule Of Thumb
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Introduction:
Rapid estimation of acute hand burns, and any burn <1% body surface area, is important for communication, standardisation of assessment, rehabilitation and research. Use of an individual’s own thumbprint area as a fraction of their total hand surface area was evaluated to assess potential utility in hand burn evaluation.

Methods:
Ten health professionals used an ink-covered dominant thumb pulp to cover the surfaces of their own non-dominant hand using the contralateral thumb. Thumbprints were assessed on the web spaces, sides of digits and dorsum and palm beyond the distal wrist crease. Hand surface area was estimated using the Banerjee and Sen method, and thumbprint ellipse area calculated to assess correlation.

Results:
Mean estimated total hand surface area was 390.0cm² ± SD 51.5 (328.3-469.0), mean thumbprint ellipse area was 5.5cm² ± SD 1.3 (3.7-8.4), and mean estimated print number was 73.5 ± SD 11.0 (range 53.1-87.8, 95% CI 6.8). The mean observed number of thumbprints on one hand was 80.1 ± SD 5.9 (range 70.0-88.0, 95% CI 3.7), chi-squared = 0.009. The combined mean of digital prints was 42, comprising a mean of two prints each on volar, dorsal, radial and ulnar digit surfaces, except volar middle and ring (3 prints each). Palmar prints were 15 (11-19), dorsal 15 (11-19), ulnar palm border 3, first web space 2, and second, third and fourth web spaces one each. Using the palmar surface of the hand as 0.5% of total body surface area, the area of one thumbprint was approximated as 1/30th of 1%.

Conclusions:
Hand burns are regarded as complex burns and often require specialist referral. Until now, it has not been possible to differentiate between burns of the hand – these injuries are often arbitrarily estimated as, for instance: 0.5% or 0.1% or <1%. We have now developed a much more accurate, sensitive, standardised and reproducible tool to evaluate and document burns of the hand in adults. Accurate evaluation of the size of hand burns, and of all burns less than 1% total body surface area, is an essential step on the path to optimising outcomes through ongoing research and evaluation of service provision.
A Rule Of Thumb For Hand Burns: Use In Clinical Practice
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Introduction:
Hand burns are often complex injuries, requiring referral to a specialist centre. The patient's thumbprint is a rapid means of accurately assessing surface area. This study aimed to establish categories of hand burn surface area in order to guide treatment of these injuries, referral to therapists, and assessment of outcomes.

Methods:
A retrospective review of prospectively gathered data and photographs of burns of the hand was performed. 16 burns involving the hand and wrist among 14 patients referred to a specialist centre were evaluated for surface area according to thumbprint size by two clinicians, and categorised. Demographics, burn mechanism, side of injury, burn thickness, percentage total body surface area of burn using 1 thumbprint (1T) = 1/30th of 1% total burn surface area (TBSA), and an entire hand comprising 80 thumbprints, were recorded. The TBSA recorded by the burns clinician in the clinical record was compared with that calculated by the thumbprint method. The clinician's non-dominant hand was used a template for estimating the burn surface area for all hand burns. For burns less than three thumbprints, clinicians simply pressed their own dominant thumb against their own non-dominant hand to estimate the thumbprint area. In hand burns greater than three thumbprints, or in irregular-shaped areas of burn, an area corresponding to the burn was marked with pen on the clinician. In larger hand burns, involving multiple confluent areas, the rule of thumb diagram was used to calculate the cumulative areas of the burnt surfaces.

Results:
Mechanisms included 8 scalds, 2 flame, 2 electrical, 1 contact, and 1 chemical burn. 6 patients were male, and 8 female; 7 had left hand burns, 5 right hand burns, and two were bilateral. 12 were partial thickness burns and 4 full thickness. The assessment of burn surface area in the clinical record was recorded as either “1%” or “<1%” in 9 of 16 cases. In contrast, the surface area was less than 1 thumbprint (T) in 6 burns, 2 were between 1 and 5T, 2 were 5-10T, 3 were 10-20T, 2 were 20-50T and 1 greater than 50T. Median thumbprint burn surface area was 1.5T (interquartile range [IQR] 0.33-12; range 0.20-84). This corresponded to a median %TBSA of 0.05% (IQR 0.01-0.40%; range 0.007-2.80%).

Conclusion:
Hand burns surface area varies widely, and thumbprint evaluation to assess surface area involvement, with distinct categories, provides a more accurate, practical and clinically relevant method of estimation.
Released Of Post-Burn Contracture Of Fifth Fingers With Full Skin Graft. A Case Report
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Introduction:
Post-burn finger contractures are still a common event in our surgical work. They presents after deep hand burns. The treatment and prophylaxis of these post-burn deformities are a crucial moment in the treatment of patients with burns.

Patient:
We present a case with post-burn dorsal (extensor) major contractures of fifth fingers (about 150°), of which released in two stages reconstruction with the full skin graft.

Conclusion:
Managing of post-burn hand deformities can be a long and complex procedure. Timely wound closure and the development of an individual programme for surgical treatment of post-burn finger deformities are crucial for optimal outcomes in patients with burns.

Keywords: post-burn contractures, repair, skin graft, rehabilitation.
Benefits Of A Burns Smartphone App For Training In A Regional Burn Centre
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Introduction:
A validated smartphone app for assessing burns surface area and fluid resuscitation has potential for improving the quality of training and communication in a modern regional burns centre. The use of a burns app may facilitate provision of evidence for logbook review by trainees undertaking assessment of burns and fluid resuscitation, as well as keeping consultants informed of all burns evaluated in a burns service, and facilitating training through workplace based assessments.

Methods:
A new implementation session to enhance utilisation of the tool was organised as a way of gradually educating trainees in the routine use of the technology. One hundred and five consecutive patients with burns were selected for retrospective review of adherence to a new standard operating protocol in the department which requires trainees to share their smartphone app assessment with both the on-call and lead burns consultant. Emails received by the lead consultant were collated.

Results:
In 27 of 105 (26%) consecutive burns attendances, the completed smartphone app assessment was received by the lead consultant via email, enabling early recognition of the acute burn attendance, and supplementing workplace based assessments and feedback to trainees.

Discussion:
All plastic surgery trainees require evidence of burns resuscitation competence. A standardised approach to demonstrating competence, integrating the existing technologies for workplace based assessments and the app, shows significant promise as well as streamlining the assessment process and enhancing communication between team members. The advantages include: ensuring a timely, accurate assessment; multiple trainees can demonstrate assessment of TBSA and fluid resuscitation to help deal with the issue of limited numbers of burns for logbooks; the accuracy of assessments by trainees is likely to be improved if formally appraised on each occasion. Discussion with trainees revealed some limitations, such as lack of awareness, and unfamiliarity with the technology.

Conclusions:
Use of a burns app can help to coordinate communication of acute burn presentations between trainees and consultants, support communication, facilitate workplace based assessments and logbook review, and review quality of care of new presentations at a convenient time.
Video Demonstrations Of The Burns Algorithm In Simulation With Hybrid Standardised Patients: The Incorrect And Correct Methods

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Aims:
To present the incorrect and correct method of assessing a severe burns scenario in simulated scenarios with hybrid standardised patients.

Methods:
A review of the literature was carried out. High-quality video recordings depict the state of the art methods of managing a burns patient. The scenario consists of a burns victim with 45% Total Body Surface Area (TBSA) who was electrocuted and got trapped in a burning building. He jumped out from the fourth floor. Other concomitant trauma is present. He is being transferred by ambulance to the Emergency Department of a District General Hospital. The incorrect method demonstrates the following mistakes to be learned: emergency unpreparedness, disorganised approach to the patient without following the ‘ABCDEF’ approach (airway, breathing, circulation, disability, exposure, fluids), lack of necessary equipment and protocols, disorganized team communication which results in a patient arrest. Cardiac arrest ensues, and it is being managed inappropriately. There is no official documentation and no evidence of auditing patient outcomes. In contrast, the correct method is based on the Resource Crisis Management principles: clear communication amongst team and paramedics, effective leadership, correct resource utilization, situational awareness, problem solving, technical expertise (primary and secondary survey, intubation in inhalation burn, escharotomies, ALS resuscitation, transfer of care in an accredited specialized Burns Unit).

Results:
Simulation assists in burns education of the trainees and of the members of the multidisciplinary team. The final beneficiaries are patients who suffer from burns. The standardised approach sets the high standards of practice which in turn improve patient outcomes.

Conclusions:
Video recording debrief during simulation education facilitates better insight of the intricacies of the human behavior during the burns resuscitation process.
Chest, Trunk and Pelvis
Custom-Made Silicone Prostheses For Pectus Excavatum And Poland Syndrome: Clinical Outcomes Of A Further 26 Cases And Updates To Manufacturing Technique

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Introduction:
Chest wall deformities may be managed with skeletal manipulation, which risks life-threatening complications. Our tertiary referral unit adopts the less invasive surgery of custom-made prostheses, manufactured from silicone elastomer using 3D computed tomographic reconstruction and 3D-printed thoracic models.

Methods:
All patients undergoing custom-made implants between January 2010 and March 2017 were identified from the prosthetic department records. A retrospective review of the clinical records was performed. Mean follow up period was 1.8 years. A comparison was made with our earlier results from 1995 to 2009.

Results:
Twenty-six patients underwent insertion of custom made implants for chest wall deformity. Pectus excavatum was present in 50% (n=13), and Poland syndrome 42% (n=11). All 11 female patients required 3D reconstruction and 3D printed models, but only 3 of 15 males. Four underwent simultaneous bilateral breast augmentation, and three had staged breast augmentation. Seroma occurred in 27% (n=7), and hypertrophic scar in 12% (n=3). Reoperation rate was 23% (n=6), including autologous fat graft in two patients. Surgical suction drains were used in 42% (n=11) patients, of whom 36% (n=4) developed seroma, compared with 17% (n=2) of those without drains (p=0.08).

Conclusions:
Custom-made prostheses are an effective and safe option for patients with chest wall deformities. The majority have a short postoperative inpatient stay (81%) and are satisfied with the outcome (77%). Seroma was the commonest complication (27%), and drains did not reduce seroma risk. Single dose intravenous antibiotic prophylaxis is adequate. A minority of patients opt for further aesthetic procedures.
Cleft Lip and Palate - Round Table
Autologous Free Fat Transfer In Patients With Velopharyngeal Insufficiency
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Introduction:
This presentation aims at reporting our initial experience and preliminary results of autologous free fat transfer to improve speech and hypernasality in patients with velopharyngeal insufficiency as a sequela of cleft lip and palate repair.

Material - Method: To date 2 patients with a mean age of 25 years (23 and 27 years) were treated with this method. Both had initially received multiple procedures elsewhere for cleft lip and palate repair. We recorded the number of free fat transfer sessions, anatomical places of placement and volumes injected, in-patient stay, occurrence or absence of complications and effectiveness of this operation in terms of clinical speech evaluation, functional velopharyngeal closure measurements and speech improvement percentage by an Ear, Nose and Throat specialist.

Results:
2 autologous free fat transfer sessions per patient were performed (at an interval of 1 month and 2 months respectively). Mean hospitalisation time was 1 day per operation. Following liposuction, autologous free fat was transferred to the following anatomical areas: a) Passavant's ridge, b) uvula, c) palatopharyngeal and palatoglossal folds. The volume of fat injected varied from 6.5 cc to 8 cc per session. Postoperative periods were uneventful for both cases in each session. On clinical examination, improvement in speech was noted as well as a reduction in hypernasality, with an improvement in articulation and audibility of consonant words, which were also reported by the patients' relatives. This was confirmed by objective nasendoscopy velopharyngeal closure measurements both during speech and deglutition.

Conclusion:
Augmentation pharyngoveloplasty - of the posterior pharyngeal wall and velum, with autologous free fat transfer in patients with velopharyngeal insufficiency is a safe and innovative alternative, particularly for small to medium degrees of structural velopharyngeal dysfunction.
Craniofacial Surgery
Resorbable plates are commonly used in paediatric craniofacial surgery. Craniosynostosis (CS) is the premature fusion of cranial sutures and has an incidence of 1 in 2,000 live births. The traditional use of metal plates and screws has largely been abandoned due to complications in favour of Resorbable plates. A number or commercially available resorbable plates exist, including the newer Inion resorbable plate, which vary based on their composition of the resorbable material. This study is the first to examine the use of Inion plates in paediatric patients undergoing cranial vault syndrome and the aim is to estimate the complication rate and examine factors associated with development of complications.

This was a retrospective cohort study, in the National Paediatric Craniofacial and Reconstructive Surgery Centre (NPCC) at the Children’s University Hospital in Temple Street (CUH) from 2008-2016. Following ethical approval, we identified 182 patients from the departmental database, who underwent cranial vault reconstruction due to CS, or following tumour excision, dermoid excision or calvarial trauma. All procedures were performed by the same surgeon. Participants were included if Inion plates were inserted. Complications were identified from medical notes and were further subdivided as potentially arising as a direct result of resorbable plate use. A number of key variables, thought to influence the development of complications including presence of an underlying genetic diagnosis (syndromic patients) and number of plates used was recorded. Gender, age at surgery, operating time, blood loss and weight at surgery, were also recorded. Logistic regression was performed to examine association between these key factors and complications.

The overall complication rate was 10.5% (n=18). Of the complications, 42% were classified by the surgeon to be directly related to the plate (4.1% of total sample). Syndromic patients accounted for 19.44% (n=36) of the cohort, and 16.7% (n=6) experienced complications. In multivariate logistic regression the presence of underlying genetic disorder (aOR 1.71, 95% CI 0.57-5.19, p=0.34) and the number of plates used (aOR 1.14, 95% CI 0.94-1.38, p=0.17) were not significantly associated with an increased odds of complications, adjusting for male gender, which was associated with a reduced odds of developing a complication (aOR 0.30, 95% CI 0.10-0.86, p-value=0.03).

Complication rate using Inion plates is similar with other fixation devices reported in the literature, and thus Inion plates appear to have an equivalent safety profile. Gender was the only factor significantly associated with complications, with females at higher risk.
Low Cost 3-D Printed Patient Specific Skull Models In Surgical Counseling And Education Of Parents Of Craniosynostosis Patients: A Comparison With The Conventional Visual Explanation Modalities

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Craniosynostosis is a complex craniofacial deformity. Its management and care requires a multidisciplinary team in its approach. Whether syndromic, or non-syndromic, it is a rare deformity. To our knowledge, there have been no studies in Saudi Arabia tackling the deformity demographics, Genetics, or comprehensive care. This is a prospective cross sectional study via a questionnaire to both parents aiming at collecting demographic data and family comprehension of the procedure and surgical planning. Methods: We used 3D printed modeling on an office based 3D printer to create patient specific models after CT scan was done preoperatively for each patient. Validated questionnaires were used prior to surgery (using Likert scale). They were handed out to both parents separately, once after conventional explanation using 3D CT scans, and the second after using the 3D model. Each parent was his own control. Results: In regards to the cost of producing the 3D model, all costs were calculating including electricity and material cost. Our mean cost was 5.2 $. In regards to results, we found that there was statistical significance in the effect on families decision for surgery and understanding of complications between both methods of explaining the procedure. Conclusion: desktop 3D printing is a a cheap model that is readily available and affordable and can provide valuable information to families. The beneficial effect of using and patient specific 3D model was shown on parents education and decision-making process. When subjects were asked if others parents are to be counseled about the child condition and operative course 85.7% choose the 3D model explanation technique.
Sin? Salvage? Or Final Solution? Alloplastic Reconstruction In Hemifacial Microsomia (HFM)  
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Introduction: Skeletal reconstruction in severe grades of HFM continues to be challenging. Traditional techniques of autografts and osseous distraction for reconstruction of the glenoid fossa, condyle and ramus often fall short of expectations and can create new problems. This Intercontinental study analyzes the role of alloplastic skeletal rehabilitation in severe HFM.  

Methods: 9 consecutive skeletally mature HFM patients with failed traditional reconstructions were successfully treated with virtually planned alloplastic reconstructions (10 joints) and simultaneous orthognathic surgery. The glenoid fossa, condyle, and ramus on the affected sides were reconstructed with custom designed titanium implants. All patients achieved occlusal stabilization, normalization of posterior facial height and sagittal mandibular projection, and maintenance or improved interincisal opening. There were no major complications or repeat surgeries. Follow-up ranges 6-50 months.  

Discussion: Theoretically autogenous reconstructions in HFM are preferred. In reality, however, traditional reconstructions are often unsuccessful at achieving ideal face proportions and often create secondary problems including ankylosis. The central problem is that traditional techniques in severe grades of HFM cannot supply adequate 3-dimensional bone and do not create a stable fossa to assure a secure centric relation (CR).  

Alloplastic reconstruction allows for precise vertical reconstruction of the ramus and condyle, and sagittal repositioning of the mandibular body. The glenoid fossa component is firmly anchored to the skull base assuring a stable CR on the reconstructed side. The longevity of these exact alloplasts for TMJ reconstruction exceeds 25 years.  

Conclusion: With the consistent functional and aesthetic success obtained in this series of difficult HFM patient’s with alloplastic reconstruction, the question becomes: Is this still a Sin, Salvage technique, or should this become our Final Solution?
Ear, Lip, Eyelid Reconstruction
Surgical Reconstruction Of The Lower Lip With Local Flaps After The Resection Of Carcinoma. Our 8-Year Experience.

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Aim:
The aim of this work is to present our experience in the last seven years in the surgical resection and reconstruction of carcinomas of the lower lip with the use of local flaps.

Material, Methods:
In the last seven years we operated upon 22 patients who suffered from carcinoma of the lower lip. The reconstruction of the lower lip after the resection of the tumor was performed with the use of local flaps like the Karapandjic and Estlander flaps. Our postoperative functional and oncological results were very satisfactory. We had no postoperative complications in our patients and, equally importantly, we did not encounter any form of tumor relapse in any of our patients during a follow up of 5-16 months.

Discussion:
The reconstruction after the resection of cancer of the lower lip can be performed with the primary suture of the lip after a simple wedge resection, or with the use of local flaps. The reconstructive technique is chosen in each different patient based on the size of the malignant tumor, on its extent in the lower lip, and finally on the sufficiency of normal tissue for a primary closure and reconstruction under no tension. In our patients we extensively used local flaps even after the resection of smaller neoplasms with the purpose of always achieving normal resection limits as well as of performing a reconstruction with no tension and with the best possible postoperative functional result for the lower lip.

Conclusions:
The liberal use of local flaps after the resection of cancer of the lower lip is, according to our experience, the best method of treatment of these patients, with the best functional and oncological results. The use of local flaps does not produce any significant additional surgical trauma and therefore it does not in any way aggravate the clinical course of the patient. The surgical technique is relatively easy to apply and ensures a clearly better functional result for the lower lip after the complete healing of the surgical wound.
3D Printing Model For Unilateral Microtia Reconstruction
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Purpose:
Microtia is a congenital external ear deformity that occurs in about 1 of every 5000 births. Carving an auricular cartilage framework from autogenous cartilage, (the most common technique for auricular reconstruction)is one of the most challenging skills for the reconstructive surgeon to learn. Tackling microtia can be tricky. Options for patients include reconstructive surgery, which can involve approaches like taking the patient's rib cartilage to create a new ear, sculpting an artificial ear from plastic/bovine/porcine/human cadaveric costal cartilage or dental material. These materials poorly represent the geometry, texture and size of the harvested costal cartilage presented to the reconstructive surgeon. We present our experience and evaluate our results with a new model of three-dimensional scanning and printing of each patient's healthy ear for microtia reconstruction.

Materials and Methods:
Children with congenital microtia are getting a three-dimensional scanning and printing of the healthy ear in order to create a mold as a reference model during the reconstruction of the cartilage scaffold. The material used is an object photopolymer overlayed with bronze, able to withstand high temperatures up to 123oC without alteration of its shape.

Results and Conclusions:
The mold is sterilized in order to be available during surgery. 3D scanning and printing model for unilateral microtia help us to reconstruct the cartilage scaffold more quickly and having a better image of the ear anatomy instantly during surgery.
The Trap Door Reconstruction Of The Auricle After The Resection Of Cancer Of The Pinna And Concha Of The Ear: Our Experience With 15 Cases In 14 Months.
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Introduction:
The trap door flap is a very useful technique for the restoration of full thickness defects of the pinna and the concha of the external ear. Skin cancer of the external ear is not so rare and is believed to be due to the exposure to the ultraviolet irradiation of the solar rays. It often affects the antihelix and the concha and is best excised along with the underlying segment of the auricular cartilage. This excision usually creates a total thickness circular or oval defect of the auricle, that is best reconstructed with the use of the postauricular pedicled Trap Door Flap.

Aims:
This study is aimed at presenting our excellent results with the use of the Trap Door Flap technique for the reconstruction of the auricle after the resection of skin tumors of the external ear en bloc with the underlying segment of ear cartilage.

In 2017 and in the first two months of 2018 we operated upon 15 patients, 11 men, from 55 to 79 years old (mean 64 years) and 4 women, from 52 to 79 years old (mean 62 years). All these patients had basal cell cancers (BCCs) of the antihelix and/or the concha of the external ear and were subjected to a full thickness excision. The trap door flap was then prepared and elevated (fig. 3), always designed to match the auricular defect. All cases were performed at the day care facility of our hospital and were dismissed a few hours after the operation.

All patients had an excellent course without any complications of any kind. The sutures were removed in between the 5th and 7th postoperative day. Both the cosmetic result of the auricle and the scar of the donor site were very satisfactory in all cases. All patients remain disease free and asymptomatic with a complete follow up ranging from five to fourteen months after the operation.

Discussion:
The correct resection of skin tumors of the auricle demands the en bloc resection of the underlying auricular cartilage in most of the cases. The postauricular “Trap Door Flap” has proved to be the most valuable and reliable alternative for this type of reconstruction. The technique is easily reproducible, produces less patient discomfort since the operation involves a single area of the body, and gives excellent cosmetic and functional results with scarcely any postoperative complications.
High-Performance Protocol In Otoplasty
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Introduction:
Bullying is an increasing problem in modern society with severe psychological and social
damage to its victims. There is a special concern when it comes to anatomical disorders
such as prominent ears that can be treated with Otoplasty. The average cost for this surgery
in Brazil is between US$ 1,500,00 and US$ 4,500,00. Brazil, a developing country, has a
large population with a low economic status that hinders access to plastic surgery, even for
minor surgeries. In order to enhance the accessibility to Otoplasty we have created a High-
Performance Protocol that includes: low cost, fast execution and low recurrence rate.

Method:
In 2010, a non-government organization was created specializing in Otoplasty for patients
as young as 7 years old who have an aesthetical complaint or is a victim of bullying. Our
technique corrects the 3 parts of the ear. The surgeries are performed in an outpatient
setting with a minimal charge for material and medication. The procedure is done with local
anesthesia and light sedation allowing maximum comfort for the patient and the surgeon.
There is no hospitalization.

Results:
From 2010 to 2017, we have performed 15,000 surgeries in 14 cities with 21 different
surgeons, all following the High-Performance Protocol. Patients only payed US690,00 for
total cost. The High-Performance Protocol can be reproduced any time despite location,
surgeon or anesthetist. The average cost for material and medication for these surgeries is
US$ 76,90. The average surgical time is 40 minutes. Of these 15,000 surgeries, we had a
recurrence rate of 3%, and even a lower rate of complications such as hematomas,
infections, skin/cartilage necrosis, allergic reaction, hypertrophic/keloid scar, cartilage
irregularity and late sensitivity changes.

Conclusion:
The High-Performance Protocol emerges as an option to increase accessibility for Otoplasty
by lowering the average cost, surgical time and recurrence. This protocol will allow surgeons
to increase the number of low income patients who need this surgery and help prevent
bullying in this population.
Tarsococonjunctival Flap For Lower Eyelid Reconstruction After Tumor Resection

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Introduction:
Eyelids are delicate structures that lubricate and protect ocular surface¹ and any tissue loss may lead to severe complications. After radically resecting a tumor², it is up to the plastic surgeon to face the challenge and reconstruct eyelids aiming both best functional and cosmetic results. New lower eyelid can be built using normal lid structures as described in tarsococonjunctival flaps³.

Method:
This retrospective study reports a series of patients operated in a high complexity oncology center by a single plastic surgeon who resorted to tarsococonjunctival flaps associated with skin grafts to repair large lower eyelid full-thickness defects after tumor resection. All 15 patients were attended at the outpatient clinic at Hospital de Cancer de Barretos from June 2015 to June 2017. The study complied with Hospital de Cancer de Barretos Ethics Committee guidelines. Surgical technique performed was the tarsococonjunctival flap to reconstruct posterior lamella associated to skin graft to reconstruct anterior lamella. Data were collected on patient demographics, lesion histology, defect size, postoperative complications and patient satisfaction.

Results:
Surgical piece mean size (length x height) was 1.69cm x 0.99cm and basal cell carcinoma was the most common pathology (80%). Mean follow-up was 11.4 months. Epiphora (26.7%) and eyelid margin hyperemia (20%) were the most frequent complications and revision was required in one case (6.7%). All patients declared satisfaction. Conclusion: Plastic surgeons must aim not only the cure but also find paths to assist patients rebuilding a lower eyelid that will be approximately authentic in role and complexion. Tarsococonjunctival flaps associated with skin grafts to repair large lower eyelid full-thickness defects after tumor resection was suitable in this series of cases, although not exempt of complications.

Bibliography:
Education and Training
Trainees In Plastic Surgery Training- A Retrospective Audit
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Background:
Core Surgical Trainees (CST) undertake a two year training programme in the UK which provides training in a range of surgical specialities. Completion of core surgical training is dependent on completion of a set of global objectives, which include completion of membership exams, audit and research work and attainment of surgical experience (evidenced in a surgical log book and by assessments [1]). The Joint Committee for Surgical Training (JCST) states that all CST should attend three consultant supervised sessions of 4 hours each week (40% of our total working time)[2] [3] and one clinic (8% of working time). Increasing service provision demands due to rota gaps [4] had led to training opportunities being compromised [2], affecting not only training, but moral and job satisfaction as well [5]. We aim to review and improve this through our audit.

Method:
We carried out a retrospective study of the training opportunities available to the senior house officers at Queen Elizabeth Birmingham plastic surgery department by documenting service provision and training opportunities from October 2017 to December 2017. Data was collected via weekly rotas and recorded on a spreadsheet. Our findings were presented to the junior doctor forum to highlight the discrepancies in our training opportunities. Following this we re-audited for the following two months using the same database, and analysed the data.

Results:
Our initial loop over the initial 4 month period reveal 36.34% of our working time was dedicated to theatre and 3.68 % of our working time was allocated to clinic. Following intervention our theatre time was 43.7% and clinic time 6.0%

Conclusion:
We have demonstrated that our current training model within this hospital is below the standard set by JCST, however following discussion at our doctors forum we have managed to increase our allocated theatre time to above the recommended standard of 40%. In the current climate, training often takes a back foot as the demand for service increases ever more. We must recognised that training is important for career progression and we have highlighted that through increased awareness the balance can be redressed.
Reporting Time Horizons In Randomized Controlled Trials In Plastic Surgery: A Systematic Review

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Background:
Current guidelines for randomized controlled trial (RCT) reporting do not require authors to justify their choice of time horizon. This is concerning, as the time horizon when an outcome is assessed has important implications for the interpretation of study results, and resources allocated to an investigation. Therefore, this study seeks to examine the standards of time horizon reporting in the plastic surgery literature.

Methods:
This is a systematic review of plastic surgery RCTs published within the last 4 years. The MEDLINE database was searched to yield relevant studies. All studies included were English language, prospective, non-pharmaceutical RCTs, comparing two plastic surgical interventions. Studies were classified into plastic surgery domains, and information regarding study population, time horizon reporting, and justification of chosen time horizons, was extracted.

Results:
The search retrieved 720 articles, of which 103 were eligible for inclusion. Time horizons were reported as either a standardized time point at which all patients were assessed, a follow-up duration range, or were not reported at all. Although most studies (85.4%) reported a standardized time horizon, the majority (85.4%) failed to provide a valid justification to support their selection of time horizons.

Conclusion:
Clinical investigators failed to justify their choice of time horizons in the majority of published RCTs. To limit heterogeneity, time horizons for given interventions should be standardized to improve validity of outcome assessments, enable future pooling of results, and increase research efficiency.
Filling The Gap In Hand Trauma Education: Results From A Pilot Multidisciplinary Hand Trauma Course
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Introduction:
Hand trauma is common. Approximately 1.36 million patients attend Accident and Emergency departments with hand injuries each year in the United Kingdom alone. It affects all age groups but often those of working age. Correct management relies on a reliable working knowledge of complex anatomy involved and incorrectly managed hand trauma may result in significant morbidity, disability and loss of productivity. Unfortunately, hand trauma management is rarely taught in medical or nursing training, highlighting the need for targeted training and education of these front line medical practitioners.

Methods:
A one day hand trauma course was designed to address three key areas: hand anatomy, diagnostic skills and immediate management of hand injuries, including splint application. The target audience were nurse practitioners working in A&E, junior doctors working in A&E and plastic and orthopaedic juniors. To objectively assess the impact of the course a pre- and post course multiple choice question (MCQ) assessment was used. Subjective feedback was obtained via a questionnaire. The course was awarded 5 Continuing Professional Development points from the Royal College of Surgeons of Edinburgh and funded by a grant from the hospital charity.

Results:
Average pre-course MCQ mark improved from 51% to 74% on post-course testing (p < 0.001). Subgroup analysis of doctors and nurses demonstrated both groups improved significantly, and to the same degree. Doctor’s average marks increased from 60% to 83.7% (p < 0.001) and nurses’ marks from 42.4% to 65.4% (p < 0.001). Subgroup analysis of anatomy and clinical questions demonstrated and significant improvement overall, and by doctors and nurses when analysed separately. 100% of candidates felt the course would improve their clinical practice and 90% agreed or strongly agreed they had improved the ability to manage hand injuries. 100% either agreed or strongly agreed the course had improved their ability to identify hand injuries, 90% agreed or strongly agreed they had improved their ability to perform a hand examination. 100% would recommend it to their colleagues.

Conclusions:
Currently there is a gap in hand trauma training and education for front line practitioners. Our pilot course demonstrates that a one-day, multidisciplinary, hand trauma course is an appropriate and feasible approach to improve the delivery of care to patients with hand trauma. We plan to develop this course into a regular regional training course.
An Evidence Based Supermicrosurgery Training Curriculum: Competency Thresholds In Clinical Submillimeter Microvascular Surgery

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Background:
Supermicrosurgery (SM) involves operating on vessels with calibers from 0.3-0.8 millimeters. Supermicrosurgery requires skills beyond those of conventional microsurgery. Current microsurgery courses do not prepare a junior surgeon for such a challenge. Several models have been developed to assist in the early learning curve, but their true purpose, benefit and validation have not been addressed. This study demonstrated the challenges and competency thresholds entailed in SM and systematically summarizes the existing SM simulation models, and their likely impact on microsurgery training for small-caliber vessel-based procedures is assessed.

Methods:
An electronic literature search was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. From the literature search 90 potential articles from MEDLINE and 300 articles from other databases were identified and screened. Twenty-five studies were screened against the inclusion criteria by two independent reviewers for a final critical analysis. Further technical aspects regarding the microsurgeons trends towards errors and pearls of wisdoms are reported along with suggestions for optimal clinical SM practise.

Results:
Thirty-six articles were included in the reviewing process and 15 SM simulation-training models were identified. The simulation models were classified as non-biological or biological and as ex-vivo or in-vivo. None of these models demonstrated validity. However, critical analysis of the full-text articles established the clinical correlation of each model along with the specific skill demonstrated. A novel ladder-based curriculum was established. Further, an expert’s questionnaire generated a likert scale and the clinical impact of each SM simulation training model.

Conclusion:
This is the first review to highlight the clinical relevance of SM models and the need for validation. Currently, a variety of training models in SM appear to enable the acquisition of specific skills, and the clinical impact of a selection is recognized in a proposed SM simulation training curriculum.
The Role Of The “Micropump” In Flow-Enhanced Non-Living Microvascular Simulation Training: A Feasibility And Optimization Study.

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Background:
The absence of physiological flow in high fidelity non-living simulation microvascular training models renders them inferior to living animals and presents a barrier for patency testing or objective end-product assessment. The micropump, a novel flow-capable simulation apparatus, improves physiological fidelity of non-living simulation training models. This study aims to demonstrate the feasibility of using the micropump in various microvascular tasks as an objective end-product assessment tool to assess physiological outcomes and further evaluate its potential in simulation training while validating learning curve progression in specific tasks in microsurgery skills acquisition.

Methods:
All microvascular anastomoses that were performed during this study were evaluated using a prototype of the micropump apparatus with intra-venous cannulas to allow easy connection to the micropump apparatus. A series of simulation tasks was performed using different caliber, type and texture of vessels. Each microvascular simulated anastomosis was assessed for the end-product outcome using the three-stage approach; phase 1 – Expert's observation of external anastomosis surface, phase 2 – confirmation and measurement of physiological flow pre- and post-anastomosis using the transonic flowmeter Aureflow, phase 3 – intimal suture line evaluation. A face validity questionnaire about each task was completed by each operator to assess translational validity of simulation models and tasks performed.

Results:
The pump was successfully used to demonstrate subjective clinically relevant flow capable simulation tasks and provide objective end-product assessments in all performed anastomoses. The pump was used in end-to-end anastomosis of artery and vein; flow feasibility under a variety of vessel specifications such as type, size and texture; vein grafting and vessel discrepancy; establishing the early learning curve in microvascular coupler application. The pump was also used with enhanced microvascular flowmetry to establish competency thresholds in microsurgery training and further evaluated the reliability of coupler application during early learning curve.

Conclusion:
The micropump offers a high-fidelity flow-capable non-living simulation model for microvascular anastomosis training which could potentially replace living animal models. This study demonstrated feasibility of a useful and ethical end-product assessment tool that objectively enhances training in several microvascular end-to-end anastomotic tasks in non-living simulation models.
Www.Aesthetictraining.Org.Uk: A Novel Website To Augment Exposure To Aesthetic Training For Plastic Surgery Trainees.

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Introduction:
Aesthetic surgery training is integral to the plastic surgery curriculum. In the United Kingdom, aesthetic surgery competency is set at 100 procedures, as recommended by the Joint Committee of Surgical Training. Accreditation for aesthetic practice is on the horizon. A recent national survey amongst plastic surgery trainees highlighted the declining exposure to aesthetic procedures in the NHS. Concerns were raised regarding the achievement of Certificate of Completion of Training competencies in aesthetic surgery during the training period, with 67% of trainees considering an aesthetic fellowship upon completion of training.

Method:
In collaboration with a private hospital in Yorkshire, we have designed an online platform that facilitates trainee engagement and access to aesthetic procedures performed in the private sector. It affords trainees, trainers and hospital administrators a real-time diary of operations scheduled, whilst respecting information governance. Trainees will be able to identify operations of interest by name or by date of availability, and ‘book’ into the case. Through the website, an email will be sent to the consultant responsible for the case, informing them of the trainees’ interest. Consultants will retain the right to vet suitability of trainees via a hyperlink. Trainees’ profiles will include Specialist Training level, and mandatory documentation including Disclosure & Barring Service documents, General Medical Council certification, Medical Indemnity certificate and Occupational Health status.

Results:
The website was launched at the beginning of January 2018 and initial feedback from all parties has been extremely positive. The second phase to scale nationally has begun. Since its conception, there has been an increase in trainee attendance in the private sector lists. A formal quantitative study of this is ongoing.

Discussion:
Reduced training opportunities in aesthetic surgery are not confined to the U.K., the U.S. and Canada demonstrating a similar global phenomenon. Ongoing fiscal limitations continue to affect the number of aesthetic procedures performed in the National Health Service, driving these into the private sector. Greater trainee engagement either by formal aesthetic rotations or through increased contact via this novel website is recommended to secure a generation of plastic surgeons competent in aesthetic surgery and the transferrable skills this affords.

Conclusion:
This is the first online platform to be introduced in the U.K., that will ensure that training opportunities remain readily available and that standards are maintained. Ultimately, we hope to improve aesthetic training for plastic surgery trainees nationally.
Acquisition Of Non-Technical Skills In Living Training Models In Microsurgery.
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Background:
In current literature, there is controversy around which modalities account for the best microsurgical training. Many studies are investigating the role of living and non-living models in the education of the trainee microsurgeon. One major difference between these two broad categories is the fact that there is no circulation of blood in the cardiovascular system in the ceased specimens. Thus, the trainee microsurgeon is unable to practice intra-operative hemostasis and post-surgical assessment of the patency of the anastomosis, which means survival of the reconstructed flap.

Objectives:
Presentation of the advantages of the living training models versus non-living ones in the development of non-technical skills.

Methods:
An International literature review was conducted to investigate if high-fidelity models, such as the live rat model, are superior compared to low-fidelity models.

Outcomes:
Using both living and non-living models offer the opportunity to reach the highest level of competency needed in microvascular free tissue transfer; each modality offers a unique skill set to the trainee microsurgeon. However, training with live rats is the status-quo in laboratory microsurgery. It is considered the 'gold standard' in the current microsurgical training.

Conclusions:
The step-wise approach consists of simple low-fidelity models, to begin with, and as the resident builds and consolidates new competencies, the trainee may then upgrade to more complex exercises with live models. The combination of all pedagogical entities guarantees enhanced results in microsurgical education. Trainee satisfaction was higher in the high-fidelity model. This finding emphasises the significance of the psychological aspects of education. Emphasis is placed on the right mindset, frustration management, interim practical sessions, other confounding factors which determine a superior outcome.

The living model offers the chance to develop non-technical competencies, such as decision-making competencies and stress management during completion of tasks in microsurgery. Several examples of non-technical skills include: communication with instructor and colleagues, observation and learning from others, time management, recognition and control of intra-operative distractions, colleague interaction, reflective practice, management of variability, deviation from the initial plan, flexibility, consolidation of ethical practice, i.e. administering anaesthesia and assessing for pain, respond to painful stimuli in the animal. As per the 'Dreyfus and Dreyfus' model of learning theory, 'knowledge, the standard of work, autonomy, coping with complexity and perception of context' are the constructs of a well-rounded surgeon.
Establishing Higher Surgical Plastic Surgery Training In East Africa; Development Of A Recognized Course Within An Expanding GDP Economy.
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Introduction:
The Island of Mauritius has a national population approaching 1.4 million. With a high incidence of road traffic accidents, life changing and fatal injuries are common place. Currently, no government supported plastic surgery unit exists within the island. Thus, a serious lack of reconstructive options presents a high incidence of amputation. An official collaboration between Bedford Hospital and the University of Mauritius aims to increase national awareness of plastic and reconstructive surgery, encouraging young clinicians to consider pursuing a career in our specialty, and subsequently provide a much required service to the population. At Present, an official specialty training pathway does not exist.

Method:
Supported by the University of Mauritius, authors provided the first of several courses, mirroring the Plastic Surgery FRCS curriculum. The initial phase provided lectures covering basic plastic surgery principles, supported by practical skills sessions in suturing, tendon repair and local flaps. The course was available for medical students, junior doctors and local specialists.

Results:
Excellent feedback from students and University of Mauritius faculty has been received. Course success was widely covered within national media.

Conclusion:
This represents the first stage in a seven year plan in the development of a Plastic Surgical service for the citizens of Mauritius. In subsequent years, authors shall cover the FRCS curriculum in its entirety. The course will include online modules, visits to UK plastic surgery units coupled with formal competence assessments. Currently, supported by the School of Medical Education, delegates completing the full 6 years will be awarded an MSc.
Development Of A Structured Burns Simulation Course With A Focus On The Acquisition Of Non-Technical Skills.

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Background:
Development of non-technical skills in surgical training is not emphasised enough and it is not clearly understood. Non-technical skills are not explicitly addressed as part of the formal curriculum in surgical education. These skills are important because current evidence suggests that medical errors are attributed more often to miscommunication, disorganisation, inadequate synchronised team effort or cognitive failure rather than technical expertise. The Harvard Instructor Simulation course, which the author has completed, emphasizes the principles of Crisis Resource Management (CRM). The key elements of the CRM are: knowledge of working the environment, anticipation and planning, calling for help early, leadership and followership, distribution of workload, mobilising all available resources, effective communication, use of all available information, prevention and management of fixation errors, double checking, use of cognitive aids, re-evaluation, good teamwork, wise allocation of attention (attentional capacity), setting priorities dynamically.

Objectives:
Proposal for a newly-developed OSCE-type course (objective structured clinical examination) which emphasises non-technical skills in the management of a burn patient using simulation and standardised patients: cognitive skills (situational awareness, decision-making), behavioral skills (communication and teamwork, leadership). The aim of the project is to improve measurable skills in the non-technical domain with the view of enhancing patient care in burns.

Methods:
The participants of the course would be medical students, General and Plastic Surgery residents and Attendings, pediatricians, Intensive Care professionals, nurses, and health allied professionals within the multidisciplinary burns and trauma team. After completing the course, we aim to help the participants increase their understanding and awareness of the non-technical skills, enhance their appreciation of the significance of non-technical skills in the clinical setting and provide areas for them to develop through positive and objective feedback via the Non-Technical Skills for Surgeons (NOTSS) assessment tool. Video recordings of the scenarios and roleplays are used to facilitate feedback to the trainees.

Outcomes:
The final beneficiaries from this simulation course will be the patients receiving treatment from qualified and appropriately-trained medical practitioners.

Conclusions:
A novel assessment tool, known as Non-Technical Skills for Surgeons (NOTSS) can be applied in assessing trainees' non-technical skills in the management of the patient with burns in a simulated scenario. There is much more work to be done in teaching and consolidating non-technical skills to improve better patient care through in-depth understanding of the shortcomings of surgeons' human nature and fallibility. Future research should focus on integrating CRM training in the formal medical education.
Towards A Safer Consistent Practice In Aesthetic Medicine - Competency Based Assessments Of Health Education England Key Modalities
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Non-surgical aesthetic procedures are currently mostly unregulated worldwide. The requirements for qualifications and authorised training courses are not sufficient for practitioners whom may perform non-surgical procedures, which, in turn, gives a very little protection to the society. To prevent any future crisis, Health Education England published reports in 2015 to standardise qualifications requirements and accredited training programs available, which are focused on five different modalities; Botulinum toxins injection (BTs), Dermal fillers (DFs), Lasers, Intense Pulsed light and Light Emitting Diode therapy (LIPLED), Chemical peels and skin rejuvenation (CPSR) and Hair restoration surgery (HRS). Specific knowledge and skills required for each procedure were discussed in the reports. However, holding qualifications and attending some training courses do not solely guarantee safe and effective clinical outcome. Global rating scale and or hand motion analysis are essential tools to measure and follow skills and competencies along trainees’ learning curves. In this paper, objective assessment tools have been produced for each modality which can potentially be used in the objective structured assessment of technical skills (OSATS) settings. These include modified global rating scales and detailed checklists based on modified standard operating procedures (SOPs) format. In this way, applicable clinical knowledge and technical skills competency can be objectively assessed towards safer practice.
Face Reconstruction
The “Snail Flap”: A Local Flap Based On Fibonacci Sequence As A Reconstructive Technique After Excision Of Skin Tumors Of The Scalp.
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Introduction:
Scalp reconstruction after skin tumor ablation can be a challenging task due to the special tissue characteristics of this region. Achieving the optimal cosmetic result without compromising the safety of oncologic surgery remain the basic reconstructive goals. Primary closure is the simplest option providing hairy coverage but is not feasible for larger defects and carries a higher risk of wound dehiscence. On the other hand, a split-thickness skin graft is a common choice as it can be even used in large defects; however, unavoidably results in a color mismatch and a non-hair “patchwork” appearance. In a pursuit of a better appearance, several types of local flaps with various design patterns have been described.

Patients & Methods:
In the present study, we introduce the “snail flap” as a new approach for the reconstruction of defects on the scalp after extirpation of skin tumors. More specifically, this technique was applied in 10 patients (6 females and 4 males) with age ranging from 51 to 84 years and a post-operative follow up from 1 to 6 months. 11 malignant skin lesions (7 BCC and 4 SCC) have been excised down to the pericranium leaving circular skin defects with a diameter up to 7 centimeters. A larger semi-circular geometric incision is designed tangential to the defect according to Fibonacci’s golden spiral. After adequate undermining, the flap is pivoted about a base with a width similar or slightly larger compared to the diameter of the defect (from 1:1 to 1:2 scale) and the tip is curled and secured with the less possible tension.

Results:
The flap survival rate was 100% with minor complications including 2 incidents of minimal flap necrosis and 1 over-granulating scar. Alopecia was practically undetectable and confined just over the scar. In one patient an area of baldness was unfortunately transposed anteriorly with the flap rotation but generally, the aesthetic outcome was deemed very satisfactory from the surgeon and the patient in all cases.

Conclusion:
The “snail flap” is generally a whorl pattern rotation local flap and our study aims to add this technique in the plastic surgeon’s armamentarium as a safe option for the reconstruction of small and moderate-sized skin defects of the scalp with minor post-operative complications and excellent aesthetic outcome.
Incidence And Severity Of Maxillofacial Injuries During The Syrian Civil War Among Syrian Soldiers And Civilians

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Purpose:
To evaluate the severity of maxillofacial wounds and our surgical approaches in the Syrian Civil War, that emerged during the spring of 2011, among Syria’s government and civilians.

Patients and Methods:
This is a retrospective cohort study of patients recorded in the Registry of Turkey’s Border Hospitals during the Syrian Civil War. Data refer to all general hospitals throughout the country. Data were analyzed according to the etiology of the injury, severity of trauma using the Injury Severity Score, trauma location, and duration of hospital stay. Cases with multiple injuries that included maxillofacial injuries were separated and further analyzed according to the above parameters, while only superficial facial soft tissue lacerations were excluded from the study.

Results:
Maxillofacial injuries were found in 112 of the 956 wounded. Patients with maxillofacial injuries ranged in age from 6 to 80 years (mean age, 30.5 ± 18.7 years). Greater than 70% of the injuries required more than 3 hospitalization days. Mortality rate of the maxillofacial injured was 3.7%. Most of the maxillofacial injuries (98; 87.1%) were combined with other organ injuries; 88 (78%) patients also had dental injuries.

Conclusion:
In the Syrian Civil War, the incidence and severity of true maxillofacial injuries, without dental injuries alone, were relatively low compared with previous reports of other conflicts. However, because most injuries involved multiple organs, special attention is required when planning and providing emergency, as well as secondary and tertiary medical care to war wounded.
Orbital Immature Teratoma: A Rare Entity With Diagnostic Challenges

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Childhood orbital teratomas are congenital lesions that present most often at birth with progressive, severe unilateral proptosis. Due to the rarity of such tumors, the diagnosis is often missed with a delay in the patient’s management. We are presenting a unique case of an immature right orbital teratoma with extensive growth in a full-term newly born baby boy. In this case report, we provide a description of the clinical findings, initial misdiagnosis and the eventual management with review of similar reported cases.
Facial Paralysis
Relative Weight Analysis Of Regional Facial Grading Items In Facial Palsy Related Quality Of Life
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Background:
Severity of facial palsy has been shown to affect patient-perceived quality of life. Previous studies have characterized this relationship using a composite score of facial function. It is possible that individual regional facial grading items are not of equal importance in predicting quality of life. The aim of this study was to determine the relative weights of individual regional facial grading items in the prediction of facial palsy-related quality of life.

Methods:
In this retrospective study, all patients with an eFace score (clinician-graded facial function) and Facial Clinimetric Evaluation scale (facial palsy-related quality of life) from the same time point were included. For analysis, patients were split in two groups: a 'flaccid'-group and 'non-flaccid'-group. Linear regression analysis was performed to calculate the amount of variance in quality of life explained by the severity of facial palsy. A relative weight analysis was performed to estimate the contribution of each individual eFace item in predicting quality of life.

Results:
Both an eFace score and FaCE scale total score were present for 920 patients from February 2014 to October 2017. The eFace composite score accounted for 21.2% of the quality of life variance in the 'flaccid'-group and 13.9% in the 'non-flaccid'-group. With the use of all 15 individual eFace items, this proportion increased to 29.7% and 16.8% respectively. In both the 'flaccid'- and 'non-flaccid'-group, 'oral commissure movement with smile' was found to be the most important contributing item. Items related to the function of periocular muscles were found to be of relatively low importance.

Conclusion:
The present study demonstrates that the function of individual facial regions is not equally important in the prediction of facial palsy-related quality of life. The ability to smile is of greatest importance to both flaccid and non-flaccid facial palsy patients. The relatively low importance of periocular function should be studied further in future research.
Gracilis Transplantation Versus Temporalis Transposition In Facial Palsy Treatment In Adults: Functional, Patient-Reported And Aesthetic Outcomes

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Introduction:
The ultimate goal of facial reanimation surgery is to restore movement of the paralyzed face. In longstanding facial nerve paralysis new muscle tissue has to be recruited, since the native facial muscles are atrophied and fibrosed to an extent that makes reinnervation impossible. The gracilis free flap transplantation is currently considered the gold standard. An alternative to muscle free flaps are local muscle transpositions, with the temporalis muscle transposition as the favourable procedure. A comparison of both techniques including patient reported outcome measures and aesthetics has not been performed. This study aims to compare outcomes of gracilis muscle transplantations neurotized on the masseteric nerve and temporalis muscle transpositions using functional, patient-reported and aesthetic outcome parameters.

Patients and methods:
Two tertiary university medical centres in the Netherlands participated in this cross-sectional study. Pre- and postoperative patient photographs and videos were analysed with the FACE-gram software, the May classification, Terzis’ grading system and the Sunnybrook Facial Grading System. Additionally, patients were asked to fill out general a disease specific quality-of-life questionnaire, and a questionnaire regarding depression and anxiety. Layperson were asked to rate the pre- and postoperative aesthetic appearance.

Results:
From an initial 28 patients, 10 gracilis and 12 temporalis patients were included for analysis. No statistical or clinically relevant differences were found in mouth excursion and symmetry. Median change scores all differed less than 1 millimetre. Interestingly, no statistically significant difference was found in quality-of-life (median 62.5 and 60.8 for both groups respectively, p=0.660) or depression, nor did the layperson observers show a difference in postoperative aesthetic appreciation (p=0.918).

Conclusions:
Based on our data we conclude that gracilis muscle transplantations are not superior to temporalis muscle transpositions in the treatment of adults with longstanding and irreversible flaccid facial palsy. The facial nerve specialist should perform the procedure he or she expects to lead to the most optimal result for the patient.
Long-Term Outcome Of Selective Neurectomy For Refractory Periocular Synkinesis
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Synkinesis is one of the most debilitating sequelae of facial paralysis, affecting 10-20% of all Bell’s palsy patients. Although most patients respond well to first line treatment with botulinum toxin and physical therapy, a subset of patients develops incapacitating refractory periocular synkinesis. For these patients, myectomies and neurectomies can be effective, though little is known about the long term effects and stability of these treatments.

We performed a retrospective review of all patients treated with highly selective neurectomy for refractory periocular synkinesis between August 2009 and August 2015. Primary outcome was time to recommencing treatment for periocular synkinesis. Palpebral fissure width was measured preoperatively, postoperatively, and at long term (> 2.5 years) follow-up. Mean units of botulinum toxin used pre- and postoperatively were compared.

Of the twelve patients, ten were included in this study. Only one was free of treatment for periocular synkinesis at a follow-up of 3.5 years. The other nine patients recommenced treatment with botulinum toxin after a median time of 1.2 (interquartile range 0.6 to 2.6) years. Palpebral fissure width while smiling was significantly different between the pre- and postoperative (p = 0.008) and preoperative and long term (p = 0.008) measurements. Mean units of botulinum toxin used did not increase postoperatively.

This study demonstrates that most patients require renewed pharmacological treatment of periocular synkinesis after neurectomy. Although the effect of neurectomy in the treatment of refractory synkinesis does not appear to be sustained, patients usually experience a symptom-free interval and demonstrate larger palpebral fissure width at long-term follow-up compared to preoperative measurements. Postoperatively, previously refractory patients demonstrated good response to botulinum toxin treatments.
Correction Of Central Lip Deficiency With Mucosal V-Y Advancement Flap And Dermofat Graft In Secondary Cleft Lip Deformities

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Background:
Correction of secondary deformities of cleft lip and palate is difficult because of scary tissues and deficiency in upper lip structures. Deficiency in central tubercle and whistle deformity is one of the most challenging. Most surgeons prefer Abbe flap as a good option. Two-stage operation and lower lip scar made us think about another option.

Methods:
From May 2015 to July 2017, 12 patients treated with this technique. All patients suffered from a central tubercle deficiency and whistle deformity. The mean age of patients was 12.4 years and the mean follow-up period was 16.4 weeks. After releasing a V-Y advancement mucosal flap, two orbicularis orismuscle flaps were crossed over and volume deficiency concurrently corrected with a dermofat graft from the inguinal area.

Results:
None of our patients had a major complication. The vertical height of central lip increased significantly (P<0.05).

The motion of the upper lip was acceptable. Volume deficiency of central lip corrected almost completely.

Conclusion:
Combination of V-Y mucosal advancement flap, orbicularis muscle overriding and concurrent augmentation with dermofatgraft is a good option for reconstruction of central tubercle deficiency with the least surgical scar.
Identification Of Stiffness-Induced Signalling Mechanisms In Cells From Patent And Fused Sutures Associated With Craniosynostosis
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Craniosynostosis is a bone developmental disease where premature ossification of the cranial sutures occurs leading to fused sutures. While biomechanical forces have been implicated in craniosynostosis, evidence of the effect of microenvironmental stiffness changes in the osteogenic commitment of cells from the sutures is lacking. Our aim was to identify the differential genetic expression and osteogenic capability between cells from patent and fused sutures of children with craniosynostosis and whether these differences are driven by changes in the stiffness of the microenvironment. Cells from both sutures demonstrated enhanced mineralisation with increasing substrate stiffness showing that stiffness is a stimulus capable of triggering the accelerated osteogenic commitment of the cells from patent to fused stages. The differences in the mechanoresponse of these cells were further investigated with a PCR array showing stiffness-dependent upregulation of genes mediating growth and bone development (TSHZ2, IGF1), involved in the breakdown of extracellular matrix (MMP9), mediating the activation of inflammation (IL1β) and controlling osteogenic differentiation (WIF1, BMP6, NOX1) in cells from fused sutures.

In summary, this study indicates that stiffer substrates lead to greater osteogenic commitment and accelerated bone formation, suggesting that stiffening of the extracellular environment may trigger the premature ossification of the sutures.
Long Term Follow up of a Pioneer Single Stage Cleft Rhinoplasty Technique in Unilateral Cleft Lip & Palate in Teenage & Adolescence “The Gujrat Technique”

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Without an early correction of the unilateral complete cleft lip with or without palate (ULCL/P), nasal architecture can progress to an exaggerated deformity. We present the results of a modified unilateral cleft rhinoplasty procedure “The Gujrat Technique”, which provides an understanding of the cleft lip nasal deformity and our technique after nasal growth completion.

We expressed our cohort’s nasal deformity mathematically as:

Nasal deformity = Primary nasal deformity + Iatrogenic (primary lip repair) + Growth related.

Our challenging cohort is caused by the significant iatrogenic component caused by the early primary lip repair and the non-repaired nasal deformity until our procedure at early adulthood.

Over a 10-year period, ninety patients with ULCL/P underwent a single-stage composite cleft rhinoplasty at their teenage-adolescence stage. Our technique involves an open rhinoplasty with Tennison lip repair, a combination of three autologous cartilage grafts, seven cartilage-moulding sutures and a prolene mesh graft for alar base support. In a new addition to the technique the author used a conchal graft to augment the cleft side LLC dome and lateral crus.

Post-operative nasal symmetry was assessed using the validated computer program ‘SymNose’, and functional outcomes and patients’ satisfaction were assessed using the NOSE scale and ROE questionnaires, respectively.

The single-group study showed good to excellent functional and aesthetic outcomes, including nasal projection and tip definition, and high scores of the digital ‘SymNose’ grading system. Objective assessment of the technique demonstrates its aesthetic appeal and functional versatility. Overall, it is a simple and reproducible technique, with no significant complications.
Fat grafting and Wound healing
Protocol For A Systematic Review Of Autologous Fat Grafting For Wound Healing

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Background:
Autologous fat grafting is an emerging therapeutic option for cutaneous wounds. The regenerative potential of autologous fat relates to the presence of adipose-derived stem cells (ADSCs) within the stromal vascular fraction (SVF). ADSCs are capable of differentiating into fibroblasts and keratinocytes, as well as secreting soluble mediators with angiogenic and anti-inflammatory properties. However, although the preclinical evidence is encouraging, there has been no comprehensive assessment of the wound healing literature in humans. This systematic review aims to critically evaluate the efficacy and safety of autologous fat grafting in acute and chronic cutaneous wounds with an appraisal of the quality of evidence available.

Methods:
Following PRISMA guidelines, Ovid MEDLINE, Embase and Cochrane Library databases will be searched from inception to December 2017. All primary clinical studies in which wounds are treated with lipotransfer, cell-assisted lipotransfer (CAL), SVF products or isolated ADSCs will be eligible for inclusion. Study screening and data extraction will be conducted by two authors in duplicate. Our primary outcome measure will be the proportion of completely healed wounds at 12 weeks. Secondary outcome measures will include: the proportion of partially healed wounds at 12 weeks; the mean wound surface area reduction at 12 weeks; the mean time to wound healing; and adverse event rates. The quality of evidence for each summary outcome measure will be assessed using the GRADE approach.

Discussion:
This will be the first systematic review and meta-analysis of autologous fat grafting for wound healing. If autologous fat grafting is observed to improve wound healing, we will compare these outcomes to those achieved using alternative wound management strategies. This review also aims to determine if one or more autologous fat grafting techniques are superior and whether this varies according to patient- and wound-specific factors. We anticipate that these results will guide future research and inform clinical practice.

Systematic review registration
PROSPERO CRD42017081499
Reduction of the body fat is one of the lifestyle trends worldwide the last two centuries. Therefore procedures to minimize it consist a huge operative field of the modern plastic surgery. When it comes to painful fatty areas potential lipoedema is one of the first line diagnosis. However it should not be the only one, as rare conditions without indication for surgery may underlie the presentation of a patient with a painful fatty mass.

A 66-year old male patient presented with moderate diffuse chronic painful subcutaneous masses in the abdomen. External palpation and ultrasound did not reveal encapsulation, nor other abnormality (hernia, etc.). To the patient’s history belonged an open cholecystectomy, an abdominoplasty and a median laparotomy due to embolism of mesenteric artery. None of the masses were located directly underneath the skin scars. With the suspicion of lipomas and wide subcutaneous postoperative scarring excision under general anaesthesia was scheduled.

On admission to the ward detailed evaluation of the patient’s history revealed a not explicable cortisone taking. On request of all previous hospital discharge letters following remarks were revealed: 1. Cortisone has been throughout consistently in his medication without precise statement. 2. During the median laparotomy 4 months ago, as well during the two second-look operations in the following two months, no enterectomy has been done, because of the adequate bowel vascularity. 3. One old letter pointed the suspicion of Pfeifer-Weber-Christian syndrome. The case was reevaluated and the patient was sent to a reference center for further diagnostic.

The Pfeifer-Weber-Christian syndrome is a rare inflammatory disease of the fat tissue with local and systemic pain. Idiopathic lobular non-suppurative panniculitis is its common synonym, although numerous definitions and classifications exist. Mesenteric panniculitis does not rarely coexist. The treatment is still controversial, with best evidence for cyclosporin A and corticosteroids. Because bariatric surgery has a limited uncertain indication in the therapy, plastic surgeons should be aware of the disease to avoid traps.
The Use Of Prophylactic Antibiotics In Fat Grafting And Their Effect On Graft Site Infection

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Background:
Fat grafting is an increasingly common procedure in the field of reconstructive and aesthetic surgery. However, there are no guidelines regarding the use of prophylactic antibiotics and the evidence for any benefit is extremely limited. The increasing use of prophylactic antibiotics in surgery may have consequences with regard to resistance, side effects and cost.

Aims:
We aimed to evaluate whether the use of prophylactic antibiotics has any effect on the incidence of graft site infections following fat grafting procedures in low risk patients.

Methods:
The medical records of forty patients undergoing fat grafting procedures at the Royal Free Hospital between June 2014 and September 2015 were retrospectively analysed from a prospectively collected database. The antibiotic regimen and occurrence of graft site infection was recorded for each patient.

Results:
No patients had any significant medical comorbidity that increased infection risk. There were seven different antibiotic regimens prescribed between the forty patients illustrating the wide variety in practice. A single dose at induction followed by no postoperative prophylaxis was the most common regimen (n=17). Ten patients received no antibiotics at all. There were no incidences of graft site infection over three months follow-up.

Conclusion:
As fat grafting is used more frequently in surgical practice it is crucial that guidelines are developed to ensure its safety and efficacy. We have demonstrated that there is no correlation between antibiotic regimen and graft site infection and therefore fat grafting in low risk patients can be safely undertaken without prophylaxis.
Autologous Administration Of Adipose Stromal Cells Improves Skin Flap Survival In Rats Through Neovascularization

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Introduction:
Aim of the study: One of the most severe complications in aesthetic as well as reconstructive surgery is the partial or total necrosis of a skin flap. In our experimental study, we try to demonstrate the use of adipose-derived stem cells in the improvement of skin flap survival.

Materials and methods:
Stem cells were isolated from the fat of 20 Wistar rats, in which a plasmid expressing GFP protein was later injected with the use of the right process. At a second stage, 2 random-pattern skin flaps (2cm X 8cm) were elevated on the dorsal area of the spine and after being placed back onto their initial place dressing the surgical wounds with a thin silicone sheet. At the seventh day, after the implementation of the second stage of the experiment, a clinical and immunohistochemical control of the skin flaps was performed.

Results:
Stem cells led to a statistically significant improvement of skin flap survival. At the same time, the imaging of tissues with an optical microscope showed that stem cells led to neovascularization. As immunochemistry showed, one of the mechanisms of action of ADSC, is the direct in-vivo conversion into endothelial cells, contributing to the improvement of ischemic skin flap survival, through neovascularization.
In Vitro Comparative Study Between Mechanically Emulsified Fat Grafts And Enzymatically Emulsified Fat Grafts
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Introduction:
Since the standardization of the fat grafting technique by Coleman one decade later, lipofilling has become a very important and valuable tool in plastic surgery, the aspirated adipose tissue consists of two components which are adipocytes and stromal cells and the adipose tissue is a reserve of stem cells which can be used in various cases.

Aim of the work:
The aim of this study is to compare the adipocytes and stem cells viability in both mechanically emulsified and enzymatic emulsified fat, also the number of cells in both in order to achieve better results.

Patients and Methods:
The study was applied on 40 patients who entered Ain Shams University hospitals for liposuction, fat was aspirated using tumescent technique and they were divided into 2 groups each 20 patients and the aspirated fat in group A was processed by mechanically digested fat while in group B, the fat processed by collagenase digested fat.

Results:
It revealed that the viability of the cells in group A (mechanically digested fat) with mean of 84.00 while in group B the viability of the cells in enzymatic digested fat with mean of 84.75 which showed no significance between both groups and the P-value is 0.70 (NS), and as regards the in the number of fat cells; there was no statistical significance between both groups as P-value is 0.14, but the results of stem cells count; as stem cells in mechanically digested fat with mean of 2670000.00 is more than the stem cells in enzymatic digested fat with mean of 1680000.00 which has statistical significance as P-value is 0.001.
Unraveling The Pathophysiology Of Lipedema
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Lipedema is clinically characterized by the painful edema and symmetrical subcutaneous deposition of adipose tissue in the lower extremities, most commonly affecting women. It is a disease of still unknown etiology, frequently misdiagnosed as obesity, lipohypertrophy/lipodystrophy or lymphedema. Despite the increased incidence of lipedema very little is known about the implicating pathomechanisms affecting its onset and progress, thus disabling timely identification and management of the disease. Recent evidences suggest that the aberrant lipid metabolism and the dysfunction of the lymphatic vasculature may play a role in the pathogenesis of lipedema. The purpose of this work is to investigate the structural and molecular determinants affecting the onset and progress of lipedema development.

We use clinical samples from lipedema and control patients after liposuctions surgery of the lower extremities or regular plastic surgery procedures respectively. Full thickness skin samples, adipose tissue samples and liposuction aspirates are subjected to detailed histopathological and molecular characterization. We particularly focus on the investigation of tissue microanatomy, the metabolic profiling of the isolated adipose tissue and the analysis of the adipocyte differentiation in the lipedema versus control samples.

Our initial data show characteristic tissue architecture in lipedema patients, with enlarged adipocytes, altered vascular morphology and increased collagen deposition both subcutaneously and in the periaipose tissue. Mass-spectrometry analysis of liposuctions aspirates suggests distinct lipid composition in the lipedema patients with increased lipid oxidation. Our data constitute a roadmap of lipedema development indicating an important yet undefined role of lipids in the progression of the disease. The identification of the mechanisms leading to the development of lipedema or discovery of prognostic biomarkers will decisively contribute to the development of tangible therapeutic strategies.
Use Of Dialquil Carbamoyl (DACC) In The Control Of Complex Wounds
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Goals/Purpose:
This report of a series of 5 cases, aims to evaluate the use of a Dialquil Carbamoyl-based coating, no Complex lesions difficult to solve.

Methods/Technique:
We present the report of 5 cases, where we used the coverage based on Dialquil Carbamoyl, called Sorbact®. The selected patients presented lesions of varied causes, but difficult to solve. Were accompanied by a period of 30 days, where we evaluated the characteristics of wounds through clinical examination and photographic analysis.

Results/Complications:
We noticed quite satisfactory results with the use of the coverage the base of Dialkyl carbamoyl (DACC). The varied lesions allowed us to local improvement, both in wound extension and in reduction of phlogistic signs and solution of cases chronicled by biofilm and mycobacteriosis. The product is easy to apply without antigenicity or toxicity, without contraindications and satisfactory cost-effectiveness. Dialquil Carbamoyl chloride is derived from a hydrophobic fatty acid natural and synthetically produced. Principle used since 1982 but now It is an antimicrobial dressing, based on Dialquil Carbamoyl Chloride (DACC), with excellent management of exudate through the ultra-absorbent foam layer and polyacrylate absorbing and retaining the exudate, with silicone edges soft. The microbial action of Cutimed® Siltec Sorbac® occurs through an attraction result of a hydrophobic interaction. The layer of dressing that makes the primary contact with the wound is coated with Dialquil Carbamoyl Chloride (DACC), a hydrophobic material derived from a highly hydrophobic.

Conclusion:
Cutimed Sorbact®-based Dialquil Carbamoyl is effective in the treatment of acute and chronic diseases, in addition to mycobacteriosis and biofilm. At cost also seems satisfactory if we analyze the reduction in hospitalization time and changes every 2 or 4 days, reducing the expenses with daily dressings. Another advantage of the product is the absence of antibiotics in the composition coverage. The progressive bacterial resistance caused by the abusive Antibiotics also stimulate the use of products like this. Demonstrates proven antimicrobial effectiveness even against MRSA and VRE; It can be used for an extended period of time, since it has no cytotoxic It is presented as safe therapy for children, pregnant women and infants, since does not release any chemical agent into the bed of the lesion. Reliable and adaptable exudate management at variable levels of exudate, even under compression therapy. So we believe this coverage is one more interesting one therapeutic option for wounds of difficult solution.
Head and Neck
Exploring The Clonal Evolution Of Oral Cavity Cancer Using Deep Sequencing
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Background:
Oral cavity cancer, which predominantly consists of squamous cell carcinomas (OSCC), is primarily caused by alcohol consumption and tobacco use. Recent DNA sequencing studies suggest OSCC are very heterogeneous between patients; however clonal evolution and intra-tumor heterogeneity remains unexplored.

Materials and methods:
We applied whole-exome sequencing combined with deep targeted sequencing on biopsies from 13 stage IV OSCC patients. From each patient, a series of biopsies were sampled from 3 distinct sites in primary tumor and at least 1 lymph node metastasis. A whole blood sample was taken as the matched reference. In 7 patients, a plasma sample for use in circulating tumor DNA detection was taken.

Results and discussion:
Our study is ongoing with data analyzed for 5 patients; the remaining 8 are expected to be finalized in July. Our preliminary results demonstrate that OSCCs show a high degree of inter-patient heterogeneity but a low degree of intra-patient heterogeneity. However, some OSCC cancers contain complex subclonal architectures comprising distinct subclones only found in distinct regions of the tumors. The metastatic potential of the tumor is acquired early in tumor evolution.

Conclusion:
Deep sequencing of multiple biopsies from OSCC and metastasis enables detection of intra-tumor heterogeneity and clonal evolution. The metastatic potential of OSCC is acquired early in tumor evolution, and our preliminary results indicate that a tumor may not need additional alterations before it can metastasize.
Composite Facial Scar Revision Surgery: W-Plasty And Botulinum Toxin Type A
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Objective:
This study was aimed to explore the effect of W-plasty combined Botox-A injection in improving appearance of scar. Methods: According to the inclusive and exclusive criteria, patients received W-plasty combined Botox-A injection (study group) or W-plasty (control group) scar repairment were enrolled in this study. After surgery, a follow-up ranged from 1 to 2 years was conducted. The effectiveness of surgery was assessed by Visual Analogue Scale (VAS).

Results:
A total of 38 patients were enrolled in this study, including 21 cases in the study group and 17 cases in the control group. There were no significant difference were identified in age (t = 0.339, P = 0.736), gender ratio (χ² = 0.003, P = 0.955) and scar forming reason (χ² = 0.391, P = 0.822) between two groups. After treatment, the VAS score in the study group was significantly higher than that in the control group (P < 0.001).

Conclusion:
W-plasty combined Botox-A injection can significantly improve the appearance of sunk scar on the face.
Ear-Based Reconstruction Of Complex Defects Of The Nose
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Introduction:
The nose is one of the most complex structures of the face and, therefore, one of the most challenging to reconstruct. The appropriate technique may vary, depending not only on the location and characteristics of the defect but also on the availability of a matching donor site. Nasal reconstructive techniques settle on the “sub-unit principle” whether the etiology is traumatic, excisional (oncological, infectious, etc.) or congenital. In tip or alar defects, given the absence of tissue excess in the lower half of the nose, distortion or airway collapse will easily occur if inadequate tissue is used in its reconstruction. In the case of a composite defect, the shape of the nose will be better achieved with a cartilaginous support. Therefore, the options may be chondrocutaneous composite grafts, regional flaps plus cartilaginous grafts and chondrocutaneous free-flaps. The ear is a commonly used donor site.

Material and Methods:
Between July 2012 and July 2017, our department performed seven cases of ear-based composite nasal reconstruction. All the cases had tip or alar defects, from traumatic or oncological etiology. In six of them, we used concha or helix chondrocutaneous composite grafts. In the other case, as the defect was larger, the decision was to use an helix composite free-flap. The aesthetic and functional results were evaluated, considering symmetry, similarity of color, texture and airway patency.

Results:
The mean follow-up time was 30 months. All patients present good aesthetic and functional results. One of the composite grafts suffered partial necrosis, which was debrided and reconstructed with a second contra-lateral ear composite graft. All the other cases required only one-stage surgery. Patient satisfaction was high to very high in all cases.

Conclusions:
Reconstruction of deep defects of the lower half of the nose require a rigid support to maintain proper shape, and the ear is a donor site with well-established advantages. For small dimension defects the composite graft is a good option because it is relatively simple to perform and has a low complication rate. When the defect is larger, the helical composite free-flap, although more laborious, is a reliable option even in the absence of a well vascularized bed, reducing the risk of necrosis. Both techniques result in a good aesthetic adjustment to the receptor site, requiring no additional surgical intervention, as opposed to the most commonly used regional flaps - nasolabial and frontal. Donor site morbidity is minimal, with inconspicuous and hidden scars.
Prefabricated Innervated Osteocutaneous Radial Forearm Free Flap - A Unique Method For Total Nasal Defect Reconstruction

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52-Year-old woman underwent staged nose reconstruction, 3 years after total rhinectomy due to invasive squamous cell carcinoma.

In the course of the preoperative setting, a 3D laser scanning of the nose prosthesis was performed and a nose replica mould manufactured. In the first stage, osteocutaneous radial forearm flap (“neo nose”) was raised according to the preoperative markings with the use of a nose replica mould. After radial osteotomy, an L-shaped skeleton framework was reconstructed using plate and screws according to the preoperative measurements. A custom made titanium coated mesh was used as a template for nose inner lining reconstruction. Flap was sutured back on the forearm; remaining defects were skin-grafted. In the same stage, a tissue expander was inserted on the forehead and was later regularly filled with saline solution until its maximum.

After five weeks, a second stage was performed. Previously prefabricated well-vascularised “neo nose” was re-raised including lateral antebrachial cutaneous nerve. Titanium coated mesh was removed. Simultaneously, recipient vessels and nerve were prepared. End-to-end anastomoses were performed on facial artery and vein and a branch of the infraorbital nerve. Skeleton framework was attached to the frontal bone and maxilla using plate and screws. Preexpanded paramedian flap, representing nose external lining, was then raised, rotated downwards and sutured on the “neo nose”. After 12 days, sutures were removed and the patient was discharged. In the later stages minor corrections were performed.

After only two operations, an aesthetically pleasing nose was reconstructed. Major advantage of such reconstruction is a well-vascularised skeleton framework transfer, which facilitates bone healing and increases its stability. Another important aspect is nose inner lining innervation, which would allow patient to preserve sensation, thus further improving quality of life. This method of nose reconstruction has not been published yet, to our knowledge. We hope that it will become a well-accepted method of total nasal defect reconstruction.
Prelaminated Converse Flap For Total Nose Reconstruction
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Introduction:
Full thickness nasal defects with extensive loss of skeletal support are difficult to reconstruct. The most used techniques include forehead flap with autologous cartilage and bone grafts for reconstruction of skeletal support and Prelaminated free radial forearm flaps. Forehead flap has the best color and texture match to resurface the nose. We present a new technique for total nose reconstruction with autologous cartilage grafts that according to our review of the literature has not been described previously.

Patients and Methods:
Two patients with extended squamous cell carcinomas of the nasal skin were treated with this method. Post excision of tumors, both patients required total nose reconstruction. We created the nasal skeleton using costal cartilage graft. We carved the costal cartilage into a long straight strut corresponding to the bridge of the nose and two elliptical and flatter parts resembling the alar cartilages. Then, we stitched the 3 grafts together creating an inverted T. Consequently, we created a trapezium pocket between the skin and frontalis muscle supraorbitally and buried the cartilage framework. When we stitched the skin we secured the framework in place using skin staples. We performed two delay procedures one month postoperatively incising the skin at the frontal hairline and two months postoperatively incising the skin supraorbitally. Finally, 3 months postoperatively, we transferred the Prelaminated flap to the nose defect using skin graft for mucosal lining. The donor site defect was reconstructed with skin graft also. Division of Converse flap pedicle was performed 3 weeks postoperatively after insetting it to the nose.

Results:
The aesthetic outcome was satisfying to both patients and surgeons. There were no donor site complications from either the forehead or costal cartilage area. In one of the patients a recipient site infection subsided with antibiotic treatment.

Conclusions:
The new method may be considered an attractive alternative for total nose reconstruction. A possible disadvantage may be the multiple steps needed to complete the reconstruction.
Reconstructive Rhinoplasty - Personal Experience
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The reconstructive rhinoplasty, either secondary aesthetic or post-traumatic is generally regarded as a very challenging procedure.

The difficulty of this procedure resides in the following aspects:

- The psychological burden it has on the patients.
- The difficulty to assess preoperatively the anatomic changes from previous procedure(s) or trauma.
- The large array of therapeutic options to choose from in order to correct the specific anatomic deformities.
- The existence of scar tissue.
- Technical difficulties.

Most of these procedures involves multiple grafting and stitching techniques.

The presentation will be based on 20+ years experience of the senior author.

It will analyse the indications, the anatomic deformities, the techniques used for correction of these, the recovery period, final results and a level of patient satisfaction achieved.

It will analyse the most common encountered deformities and the most frequently used procedures.
Humanitarian Organisations
Management Of Patients With Craniofacial Clefts Within The Scope Of Humanitarian Missions: The Madagascar Experience

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Introduction:
Treatment of patients with craniofacial clefts in developing countries is mainly performed within the scope of humanitarian missions of non-governmental organizations like Operation Smile. Purpose of the study has been to collect and analyze the medical data of one mission to inform and sensitize European plastic surgeons to volunteer in future missions.

Materials – Methods:
Following approval by the ethical committee of the organization, we performed collection and statistical analysis of the medical data of the 10th Operation Smile mission in Madagascar, which the first author participated in as a cleft surgeon. The screening forms used to prioritize patients were retrieved. We searched the surgical records regarding techniques and postoperative complications. Photographs of rare cases were obtained.

Results:
A multidisciplinary team consisting of 45 volunteers of 8 different specialties participated in the mission. 531 patients were examined during the 2 screening days and 61 of them were adults. Cleft lip patients regardless their age were evaluated as priority 1, cleft palate patients under 10 years of age as priority 2, whereas older cleft palate patients as priority 3. Depending on priority, 166 patients received operation during the surgery week. 130 were primary cleft lip patients, 34 had cleft palate or oronasal fistula and 2 underwent secondary lip surgery. Adolescent and adult cleft lip patients were operated under local anaesthesia. Primary rhinoplasty was performed in the majority of cleft lip cases. Patients were operated in 6 tables simultaneously in 3 rooms and no major complications occurred.

Conclusion:
Despite the differences in management protocols, patients with craniofacial clefts in developing countries receive high-standard healthcare within the scope of humanitarian missions. The great number of patients and the wide spectrum of their clinical conditions and techniques performed promote education of young cleft surgeons.
Laser and Regenerative Medicine
Dermatome Shaving Of Chronic Tattoo Reactions: Efficient And Preferable To Lasers
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Background:
The pigment particles of tattoos are embedded deeply in the dermis, thus, difficult to remove without damaging normal skin structures. In many countries the tattoo removal industry is non-transparent and not regulated. In tattoo regrets Q-switched YAG lasers are golden standard but this type of treatment is not recommended in removal of pathological tattoo reactions, especially allergic reactions. Concerns have been raised that laser-induced photochemical reactions of the tattoo pigment may produce new and harmful chemicals, including Carcinogenic-Mutagenic-Reproduction-toxic substances (CMRs) and new allergens. Lasers bleach rather than remove tattoo pigment near the surface but not in the deep dermis and are therefore not logical to use in chronic tattoo reactions, which often are thickened due to inflammation. Allergic reactions require complete pigment eradication in order to overcome the allergy.

Surgical removal of tattoo pigment situated in the outer dermis by dermatome shaving is rational since the tattoo pigment is concentrated in the outer dermis.

Aim:
To describe the surgical technique and rationale of dermatome shaving of pathological tattoo reactions. To compare this surgical approach with laser treatment.

Methods:
50 patients with pathological tattoo reactions, mainly allergic reactions, who underwent dermatome shaving, were studied. A structured telephone interview of the patients was performed. The overall topics consisted of patient satisfaction with the surgery and final outcome of the surgery. The surgical technique and the instruments shall be described.

Results:
Patient satisfaction with the outcome of shaving was high. Preoperatively many patients suffered from severe itching, which disappeared after dermatome shaving. The cosmetic outcome was acceptable.

Conclusions:
Dermatome shaving is recommended as first line treatment of chronic tattoo reactions. Laser treatment is relatively contraindicated since lasers can activate allergy to tattoo pigment. Photochemical decomposition may produce hazardous new compounds.
A Systematic Review Of Autologous Platelet Rich Plasma And Fat Graft Preparation Methods
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Aims:
The addition of platelet rich plasma (PRP) to adipose tissue may improve long-term fat graft survival, although graft retention rates vary markedly between studies. To what extent this outcome heterogeneity reflects differing methodological factors remains unknown.

This systematic review aims to synthesise and critically review methodological approaches to autologous PRP and fat co-transplantation in both human and animal studies.

Methods:
In accordance with PRISMA guidelines, Ovid MEDLINE, Scopus and Cochrane Library databases were searched from inception to April 2017. Data were extracted from all in vivo studies in which autologous PRP and fat were co-administered by any means. A secondary aim was to assess reporting of technical detail in published manuscripts; authors were not contacted to provide missing data.

Results:
From an initial list of 335 articles, 23 studies were included in the qualitative synthesis. Some 21 were performed in humans and two in rabbits. Six studies were RCTs, the remainder reported on observational data.

Methods of PRP extraction and activation varied markedly between studies. Fat graft preparation was comparatively more consistent. Methods of PRP and fat mixing differed significantly, especially with regards to volume/volume ratios where up to 10-fold differences in substrate concentrations were used.

Conclusions:
Our study represents the first systematic review of methodological factors in autologous PRP and fat co-transplantation. It demonstrates that technical factors in graft preparation and administration vary significantly between in vivo studies. Such methodological heterogeneity may explain observed differences in experimental and clinical outcomes. Reporting of key procedural information is inconsistent and, in many cases, inadequate. Together, these issues make meaningful evaluation of the PRP-enhanced fat grafting literature difficult and may limit its translation into clinical practice.
Lower Limb
Lower Extremity Reconstruction
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An 18 year old woman sustained life changing injuries after being run over as a pedestrian by a vehicle. Examination indicated a severe degloving injury of the plantar aspect of the right foot and extensive loss of soft tissue over the dorsum and lateral aspect of the right foot. Multiple metatarsal and phalangeal fractures were present with incomplete nonviable amputations of multiple digits, together with extensive crush soft tissue and tendinous injuries.

The patient was taken to theatre where the injuries were assessed and extensive debridement and washouts of the limb was carried out. The fractures were immobilised with K-wires and revascularisation of the digits was carried out. The skin flaps were lightly sutured, an appropriate wound dressing was placed and she was given broad spectrum antibiotics. Over the next 48 hours, the patient had further aggressive surgical debridements and wound dressings. Once the injuries had stabilised, the first definitive stage of the reconstruction was carried out using a free innervated radial forearm flap to reconstruct the dorsum of the foot.

The patient initially made good progress however over the following week it became apparent that the plantar surface off the foot from the mid foot proximally was non-viable especially over the calcaneum. The necrotic tissue and tissue of questionable viability were debrided aggressively and a decision was made to proceed with a free ALT flap in order to reconstruct the defect.

The patient made an uneventful recovery, remaining in the Unit for the next three weeks. During this period, she was assessed by the physiotherapy team who instituted an appropriate regimen for her. After discharge, she continued with intensive physiotherapy, and at 4 months post injury she was taken to theatre in order to debulk the ALT free flap and carry out tendon grafts and transfers in order to improve the range of movement of her ankle and remaining toes.

At present, our patient continues with her physiotherapy, is mobilising well on her own, and is able to wear a shoe on the right foot. She is beginning to get increased sensation over the dorsum of her foot and reduced but improving sensation over the plantar aspect. She is planned for further surgery and a decision will be made on carrying out a single toe transfer in order to improve cosmesis.
The Pedicled Medial Sural Artery Perforator (MSAP) Flap: An Evolution Over The Medial Gastrocnemius Flap For Reconstructing Defects Around The Knee

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Objective:
The medial gastrocnemius muscle flap has traditionally been a workhorse flap to cover proximal leg defects because of its low morbidity and ease of raising. However, it has known to be bulky, associated with some loss of muscle power and patients frequently complain about twitching of the flap.

The free MSAP flap since it was described in 2001 by Cavadas et al has been a popular flap for reconstructing multiple defects particularly head and neck and lower limb due to its characteristics of being thin, pliable and having a long pedicle. We present a single surgeon case series of the pedicled MSAP flap for reconstructing proximal leg defects as an alternative to the medial gastrocnemius flap.

Methodology:
Patients were referred to the senior author with proximal leg defects following trauma or chronic wounds.

The hand held Doppler was used to map out the medial sural artery perforators. The defect was reconstructed using the MSAP flap based on one after careful dissection, preserving the nerve supply to the gastrocnemius muscle. The donor site was directly closed in 3 cases and skin grafted in one.

Results:
A total of 4 pedicled flaps were done to reconstruct defects around the knee. All the patients were discharged after a week following a graduated flexion regime using a knee brace. All flaps healed well. There was one complication who had skin graft failure to the donor site. The Enneking score was used to analyse the outcomes.

Conclusion:
The pedicled MSAP flap is an excellent alternative to the medial gastrocnemius flap for reconstructing proximal leg defects as it is associated with lower donor site morbidity and being thin and pliable provides a aesthetically pleasing reconstruction. In the event of not finding the appropriate perforator, the procedure could be converted to the medial gastrocnemius muscle flap.
Medial Sural Artery Perforator Flap In Lower Extremity Reconstruction
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Background:
The medial sural artery perforator (MSAP) flap was first described in 2001 by Cavadas et al. as a refinement of the medial gastrocnemius flap. This fasciocutaneous perforator flap can be used as a pedicled flap, whose arc of rotation can reach from the popliteal fossa to the proximal ¾ of the tibia, or as a free-flap, described for both extremity and head and neck reconstruction. Despite its recent history, it has already proven to have several advantages and indications.

Methods:
Between August 2013 and August 2017, a case series of 9 patients with wounds of the lower extremity were reconstructed with MSAP flaps. The patients included 6 men and 3 women, ranging in age from 27 to 86 years. The soft tissue defects were due to traumatic injury in most patients. Six pedicled flaps were performed, for defects localized between the distal third of the tibia and the proximal third of the leg. The free-flaps were harvested to reconstruct the posterior calcaneus in 2 patients and the aquilian region in the other one. The median flap dimensions were as follows: width 6,7cm (range 4,5-8cm), length 11,1cm (range 9-16cm), and pedicle length 10,1cm (range 8,5-11cm). All flaps were safely raised with a single perforator.

Results:
Regarding immediate complications, no total flap loss was reported. There was one case of partial flap loss in a free flap due to venous congestion, requiring skin grafting in a secondary procedure. There was no need for secondary surgeries in the remaining cases. Only one patient required skin grafting of the donor site, the remaining were closed directly. The median follow-up time was 14 months and to date there are no donor site complaints nor complications in the recipient area.

Discussion:
The MSAP flap is a thin and pliable fasciocutaneous flap, highly suitable for certain reconstructions of the lower limb. It can provide “like-to-like" tissue with minor donor site morbidity, since no major vessels are sacrificed and the medial gastrocnemius muscle and motor nerve are preserved. The pedicle is of sufficient length to have a good arc of rotation or, in the case of a free-flap, to allow a facilitated anastomosis. The least positive aspects are the laborious intramuscular dissection and a possible diminished venous outflow. The donor site can be closed directly in most cases, although not avoiding a visible scar. Still, the good results and satisfaction of the patients make this a wise choice in selected cases.
The Anterolateral Thigh Flap was first described in 1983 in Chinese literature by Zhou et al in 1983 and in English literature by Song in 1984. The ALT gained popularity in China and Japan in the 1990’s mainly in Head & Neck and in 2002 Wei et al reported 672 ALT from Taiwan.

The flap was first described as a fascia-cutaneous flap, but muscle from vastus lateralis can be incorporated in the flap. It is a reliable and versatile flap with low failure rates and minimal donor morbidity. Large tissue stock are available with a great deal of versatility in design and the possibility getting different tissue types on one pedicle.

It has mainly been used as a free microvascular flap and is today one of the workhorses of microvascular soft tissue reconstruction. At our institution it is one of the first options in head and neck and limb trauma soft tissue reconstruction. We have increasingly used this flap as a pedicled flap to reconstruct a variety of soft tissue defect in the trochanteric area and lower abdomen and more recently as a distally based supercharged flap to cover the knee area.

Flap anatomy, classification, dissection and cases will be presented.
Free Ipsilateral Extended Anterolateral Thigh Flap (ALT) Flap With Vein Grafts For Soft Tissue Cover Salvage Of Infected Total Knee Arthroplasty – The Queen Victoria Hospital’s Experience

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Aim:
Infected total knee arthroplasty is potentially a limb-threatening condition. It is managed in an orthoplastic multidisciplinary team approach, and commonly in 2 stages. Although pedicled gastrocnemius flap is considered the workhorse flap for knee coverage, it doesn’t easily cover soft tissue defects proximal to the patella and cannot be easily re-raised for the second stage of reconstruction. The purpose of this study is to present our unit’s experience with free ipsilateral extended anterolateral thigh flap (ALT) with vein grafts, for soft tissue reconstruction of infected knee arthroplasty.

Materials and methods:
Retrospective data analysis of the 8 consecutive patients operated upon by the senior author (CTC) for soft tissue cover following infected total knee arthroplasty (ITKA), utilizing this technique. We identified the cohort of patients and reviewed their medical notes and medical photographs. Using excel sheet, we recorded the patients’ demographics, co-morbidities, surgical procedures, outcomes and outpatient clinic follow up. We also recorded any complication and further surgeries including above knee amputation (AKA).

Results:
Eight patients were operated upon between September 2008 and September 2017. Six of them were males and two females. Their age ranged from 52 to 75 years old (Mean=64.5). They were all referred for ITKA except for one patient who was a quadruple amputee secondary to septicaemia and had debridement of the patella. All patients but one had comorbidities and all but two were non smokers. They all had ipsilateral free extended ALT flap with skin grafting of the donor site. Contralateral saphenous vein grafts were utilized in all patients to anastomose the flap to its original feeding vessels (Descending branch of lateral circumflex femoral vessels). The flap survived in all patients, but two flaps suffered distal tip necrosis on re-elevation for the 2nd stage knee reconstruction, for whom a medial gastrocnemius flap was utilized to ensure well vascularized tissue cover of the prosthesis. Two patients subsequently had AKA, one for recurrent infection and persistent pain, and the other for unstable knee joint secondary to lost extensor mechanism.

Conclusion:
This technique has proven effective for complex soft tissue reconstruction of the knee and distal thigh, whether for ITKA or extensor mechanism reconstruction. Although it is a lengthier and a technically demanding procedure, it replaces like with like and is easily re-elevated for the 2nd stage of knee reconstruction. The pedicle is safe as it runs in its anatomical position between vastus lateralis and rectus femoris.
Lower Limb - Diabetic Foot
Allogeneic Skin Substitutes Versus Human Placental Membrane Products In The Management Of Diabetic Foot Ulcers: A Systematic Comparative Evaluation Of The Literature

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Background:
Outcomes following standard wound care (SWC) for diabetic foot ulcers (DFUs) remain suboptimal. Supplementing SWC with tissue engineered allogeneic cellular wound therapies represents an emerging treatment strategy. This review aims to systematically evaluate the efficacy and safety of allogeneic skin substitutes and human placental membrane allografts in the management of DFUs.

Methods:
Ovid MEDLINE and Embase databases were searched from inception to October 2017. Any RCT with an allogeneic skin substitute or placental membrane allograft intervention group was included. Our primary outcome measure was the proportion of completely healed ulcers. Secondary outcome measures included time to complete wound healing and local adverse event rates. Each study was assessed for risk of bias and the quality of evidence was appraised using the GRADE approach.

Results:
Moderate quality evidence from 11 included RCTs demonstrated that both allogeneic cellular approaches improve the proportion of completely healed ulcers at 6 and 12 weeks. One RCT showed that a placental membrane allograft was superior to an allogeneic skin substitute, although these findings are based on low quality evidence.

Conclusions:
The addition of allogeneic cellular wound products to SWC improves DFU outcomes. Further studies are required to conclusively establish if placental membrane allografts are superior to allogeneic skin substitutes.
Latissimus Dorsi Free Flap - 40 Years Of Micro Vascular Transfer In Ljubljana For Lower Leg Reconstruction
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Objectives:
Latissimus dorsi muscle, as a flat muscle of a back, was anatomically described and operatively used in a history of medicine (Tansini 1895). After 70 years it was reharvested again for breast reconstruction.

Approach:
Experimental and pioneered free micro vascular transfer in Ljubljana is dated in the middle of 70’s. When a pedicle flap was reused in breast reconstruction (Olivari 1976), microsurgical team of Ljubljana was encouraged by the author and decided to do a free, microsurgical transfer (Godina, Eder 1978).

Methods and surgical considerations:
Mostly a free flap was used for defects of chronic lower leg osteomyelitis. Later, a free flap was used as an urgent free flap for acute trauma defects and as a filler flap. Rarely, in a case of bone defect a flap is harvested as a chondro-muscle flap, because reconstruction is completed with elongation of a bone (Ilizarov 1951) or a bone spongioplasty. Modifications, as tailored, fascia-gliding and perforator flap (Angrigiani) are used, depending to a character of a defect.

Ljubljana microsurgical team started as a two-team approach. While trauma surgeons operated on bones, after necrectomy plastic surgery team started to harvest a flap at the same time. For this reason, a patient is layed onto lateral position, which enables a double approach. Microanastomosis are sutured on posterior tibial vessels, far away from a zone of lesion. Anterior tibial artery was found as a more spastic vessel. To maintain a vascular supply of a lower leg, arterial end to side anastomosis is postulated (Godina).

Results:
By experiences, short term and long term results, it was realised, that a healthy and well vascularised tissue maintain a good tissue covercle, good healing and regeneration of bone and anti-oedema as anti-inflammatory effect in zone of lesion. This is a benefit in osteitis healing. Later, first urgent free flap was done 1979. In covering big defects, mega flap is very well described, when muscles latissimus dorsi and serratus anterior and scapular flap are harvested on same thoracodorsal pedicle.

Conclusion:
We pay attention that latissimus dorsi free flap still represent a golden standard in armamentarium of a plastic surgeon, although new conservative methods compete to a microsurgical transfer. A routine use of a "working horse"- latissimus dorsi free flap must not ignore an anatomical considerations and operative indications by a surgeon.
Neurotised Gracilis Transfer For Reanimation Of Active Foot Dorsiflexion In Children
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Introduction:
Foot drop is a debilitating condition, causing physical disability and psychological challenges associated with difficulties walking. We report the indications, technique and successful outcomes of three gracilis transfers in two children with foot drop following loss of the lower limb anterior compartment.

1) A four-year-old boy with Pneumococcal septicaemia who developed compartment syndrome in both legs. Consequential debridement of necrotic muscle in both anterior compartments of his lower limbs resulted in bilateral foot drop. He underwent bilateral free functional gracilis muscle transfers at 12 and 13 months post-sepsis.

2) A nine-month-old girl who underwent wide local excision of a fibrosarcoma in the left leg anterior compartment, and immediate reconstruction using a free functional gracilis muscle transfer.

Results:
The mean follow-up period was 29 months. There was no flap loss. Both patients achieved excellent outcomes evidenced by good balance and independent walking on uneven surfaces without footwear.

Discussion:
Free functional gracilis muscle transfers for reanimation of active foot dorsiflexion has not been previously described in the literature. This technique can deliver optimal functional and aesthetic results. The donor site is an acceptable trade off for the functional, psychological and aesthetic gain.

Conclusion:
Free functional muscle transfer is a valuable reconstructive option. In select cases of foot drop it can successfully restore the soft tissue loss and functional motor defects. We propose these techniques are undertaken in centres with microsurgical expertise in children and rehabilitation facilities.
Ortho-Plastic Management In Paediatric Lower Limb Trauma With Complex Bone And Soft Tissue Loss And The Measurement Of Health-Related Quality Of Life Outcomes

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Introduction:
Since the inception of paediatric major trauma centre over the last five years, we report our strategy in the management of paediatric complex open lower limb fractures and their outcomes regarding bone union, soft tissue cover, and importantly the health-related quality of life outcome measures.

Material and methods:
A retrospective review of the trauma database over last five years (2012-2017), identified 26 paediatric lower limbs open tibia fractures. Inclusion criteria assessed the age, injury pattern including soft tissue loss and fracture complexity.

Management involved intravenous antibiotics, early debridement and the combined ortho-plastic approach involving skeletal stabilisation and soft tissue reconstruction in line with standards proposed by the British Orthopaedic Association/BAPRAS guidelines for the management of severe open lower limb fractures.

The outcome measures included fracture union, paediatric quality of life inventory and trauma impact scores.

In the 26 patients aged between 4-17 years. 24 patients had open tibia fractures including ten patients with bone loss. Two patients had degloving injuries to the foot and ankle, respectively.

The soft tissue reconstruction involved nine cases of primary skin closure after acute bone shortening for segmental bone loss, one local fascio-cutaneous flap and two split skin grafts.

14 patients required microvascular free tissue transfer. These include seven free groin flaps, four gracilis muscle flaps, two Anterolateral thigh flaps and one latissimus dorsi flap. Soft tissue coverage was achieved within 48 hours in 89% of patients.

The fracture fixation involved sixteen circular wire frames, five external fixators and five cases of open reduction internal fixation.

Results:
The Median follow-up time was eight months (2-45). Satisfactory soft tissue healing and bone union were achieved. The paediatric quality of life scores was available in 22 patients (median 78.3 out of 100). The trauma impact scores showed one in three patients were at risk of developing post-traumatic stress symptoms (PTSD) and this was addressed with routine psychologist input.

Conclusion:
Our preferred approach is early debridement, skeletal stabilisation and soft-tissue cover by an ortho-plastic consultant-led team.

All our patients had limb salvage, fracture union and near normal levels of short and medium-term scores in quality of life assessment. In addition to physical rehabilitation, close psychological follow up is advisable to minimise the risk of PTSD.
Lower Limb - Soft Tissue Infections
Challenging Reconstruction Of Extensive Tibia Defects With Microsurgical Fibula-Pro-Tibia Operation – Results, Experiences And Technical Refinements

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Background:
The reconstruction of elongate complex tibia bone defects is a major surgical challenge. These defects are either caused by congenital deformities, posttraumatic or after extensive oncologic resections. A differentiated and complex therapy concept is mandatory to achieve a long lasting and stable result for the patient. The Fibula-pro-Tibia operation represents a demanding microsurgical option, however its single stage concept has several advantages in comparison to multi-stage procedures.

Methods:
Here we present our experience with a total number of 10 patients with extensive tibia defects. We performed 10 microsurgical contralateral Fibula-pro-Tibia operations in these patients for the salvage of the lower extremity. These cases consist of 6 congenital pediatric tibia deformities (median age 7.2 years) and 4 posttraumatic tibia defects (median age 23.2 years), which required a microsurgical fibula transfer. Alternative reconstructive options were exhausted prior to this surgery. The follow-up was at least 12 months.

Results:
All 10 performed microsurgical Fibula-pro-Tibia operations had a successful outcome. We were able to monitor these free flaps with an ultrasound Doppler signal in all cases. The transferred fibular flaps healed without major complications. The radiologic long-term results showed a complete bony healing and predominantly an axis conform position of the fibula. The patients showed a good bearing quality in terms of mechanical load stability of the neo-tibia and symmetric walking properties.

Conclusion:
The microsurgical Fibula-pro-Tibia operation represents especially in pediatric patients a sophisticated and elegant reconstructive alternative in comparison to long lasting multi-stage techniques. Our results show, that a single stage operation is able to achieve a permanent reliable and stable result with adequate mechanical properties and sustainability.
Fat Transfer to Improve Comfort in Lower Limb Amputees
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Introduction:
Lower limb amputees often experience pain that reduces their quality of life. Autologous fat transfer is a technique that is commonly used in plastic and reconstructive surgery. However, the use of fat transfer in amputation stumps has not been investigated. The literature describes other applications of this technique and the advantages of its use, including increasing soft tissue volume and the potential for tissue regeneration by adipocyte-derived stem cells. This study describes the outcome of autologous fat transfer to improve comfort in a cohort of well-established lower limb amputees. In this investigation, a novel application of the fat transplant technique - to increase soft tissue volume in lower limb amputation stumps - was studied.

Methods:
Established lower limb amputees (transtibial and transfemoral) who had reported a specific, fixed area of discomfort were selected for participation in the study. Fat was harvested from the lateral thigh and spun in a centrifuge machine. The supernatant was discarded and the fat injected into the amputation stump at the site of discomfort. Patients who underwent the procedure were surveyed pre- and post-operatively using questionnaires that primarily assessed physical ability, socket comfort and quality of life.

Results:
7 patients underwent fat transfer, with 2 of these requiring a repeat procedure at 12 months. Average Socket Comfort Score increased from 2.4 to 8.6. Appearance of the stump also improved for all patients post-operatively, with a reduction in tethering and bony protrusion.

Discussion:
The results suggest that there is a role for autologous fat transfer in this situation, with patient satisfaction scoring highly, and all patients reporting improvements post-operatively. Further investigation is warranted to refine the technique in terms of optimal volume of fat to be transferred, as well as methods of processing the harvested adipose tissue and number of repeated procedures required to maximise graft survival.
Lymphatic Surgery

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Introduction:
This study was conducted to investigate a pedicle vascularized lymph node flap transfer (pVLNT) combined with a thread like multi-lumen aligned nanofibrillar collagen scaffold (CS) in resolution of hind limb lymphedema in a rat model, and check the possibility of translating to humans.

Method:
Unilateral left hind limb lymphedema was created in 15 female Sprague–Dawley rats following inguinal and popliteal LN resection and radiation. An inguinal pVLNT including 3 lymph nodes was elevated from the contralateral groin and transferred through a skin tunnel to the affected groin. Four collagen threads were attached to the flap and inserted to the hind limb at the subcutaneous level in a fun shape.

The three study groups consisted of Group A (no LN transfer), Group B (pVLNT), and Group C (pVLNT + CS).

Volumetric analysis of bilateral hind limbs was performed using micro-CT imaging at 1 and 3 months postoperatively, lymphatic drainage was assessed with ICG fluoroscopy, and lymphatic regeneration was examined through histology.

Results:
An increased mean limb volume of 9.3% remained at Group A, while a significant mean volume reduction was seen in Groups B (-11.3%) and in a greater degree in Group C (-12.8%) at all time points. ICG proved the functional restoration of lymphatic vessels through the CS and viability of lymph node flaps in both B and C groups, while histology confirmed the advantages of Group C.

Conclusion:
The pedicle vascularized lymph node transfer is an effective procedure for the treatment of lymphedema in rats. It can be easily translated in humans' lower limb lymphedema after contralateral pLNT, or in upper limb with the use of a pedicle propeller lateral thoracic pLNT, if both are combined with collagen threads; further studies are required prior to recommend the above method.
Microsurgery
Versatility Of Scapular/Parascapular Free Flap For Head And Neck, And Extremity Reconstruction

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Free tissue transfer is nowadays gold standard for treatment of complex defects and wounds in all parts of the human body. Scapular and parascapular regions provide the reconstructive surgeon with good quality and ample amount of soft tissue and optional bone to harvest. Flap is nourished by a long vascular pedicle with good caliber of nourishing vessels a. et v. circumflexa scapulae (a. et v. subscapularis). We performed microvascular free tissue transfers in 12 patients at age between 13 and 61. Fourteen flaps were transferred, 6 for head and neck, 3 for upper extremity and 5 for lower extremity reconstruction. There were 3 total flap necrosis (21.4%), two of which were successfully treated with a second parascapular flap from the contralateral side. The third patient was surgically treated with local advancement flap. One partial necrosis, approximately ½ of the pre-expanded scapular flap for neck reconstruction was also encountered, requiring further surgical interventions. Good functional and acceptable aesthetic outcome with high satisfaction ratio was registered in 11 of 12 patients. Our preference to the scapular/parascapular area is justified by the constant anatomy, minimal donor side morbidity, with no sacrifice of sensory neither motor nerves, and good color match to the head and neck skin.
Chimeric Thoracoacromial Artery Perforator Flap For Reconstruction Of Complex Pharyngoesophageal Defects

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Background:
Oncological pharyngoesophageal resections leading to circumferential hypopharyngeal defects with anterior neck skin loss often require double stacked or chimeric flaps to achieve good surgical outcomes. Often the patients undergoing such resections characterized with significant comorbidities, which restrict free tissue transfer reconstructive options. We have demonstrated previously that the use of thoracoacromial artery perforator (TAAP) flap to reconstruct hypopharyngeal defect is a simple, reliable, pliable, method that provides the defect with a thin and reliable blood supply soft tissue coverage. We present our experience using the chimeric TAAP flap for the repair of complex hypopharyngeal and anterior neck defects.

Methods:
From 2012 to 2017, all male patients with average age of 62 (42 – 81) underwent oncological resections resulted to complex hypopharyngeal defects were reconstructed with TAAP flaps. Patients were classified in three groups; Group 1 represent patients with total circumferential hypopharyngeal defects, Group 2 represent patients with total circumferential hypopharyngeal defect and anterior neck defect, and Group 3 patients with near-circumferential hypopharyngeal defect with anterior neck defect.

Results:
All 31 patients underwent reconstruction with TAAP flaps achieved optimal functional outcome. All donor sites were closed primarily. The average length of hospital stay was 12.5 (10 – 19) days. Three patients developed radiographic minor leak, however this resolved within 4 weeks without further intervention and no formation of oesophageal fistula. All patients returned back to normal nutrition after 8 weeks post-operatively. The average follow-up period was 19.3 (14 – 48) months.

Conclusions:
We reconstructed complex circumferential hypopharyngeal defects with anterior neck skin defects in one-stage utilizing chimeric TAAP flap with good aesthetic and functional results. This reconstructive option demonstrated; robust clinical outcomes, minimal donor site morbidity, optional chimeric flap reconstruction and quick recovery. Furthermore, this is the first report demonstrating the use of chimeric TAAP flap as an alternative to free flaps for oncological reconstruction of complex anterior neck defects.
The Innervated Supermicrosurgical Radial Artery Superficial Palmar Branch And Dorsoradial Artery Perforator Free Flaps For Reconstruction Of Complex Digital Injuries

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Background:
Loco-regional flaps have been widely used for the reconstruction of digital injuries without requiring microvascular anastomosis, however, they result in scarring and compromised functional outcomes. This study demonstrates our experience utilizing the innervated radial artery superficial palmar branch (RASPB) and the dorsoradial artery perforator (DRAP) free flaps for complex digital injuries reconstruction.

Patients and Methods:
From May 2007 to March 2017, the innervated RASPB free flap was used to reconstruct 79 distal complex hand and digital soft tissue defects of which 14 were used to re-vascularise the distal digit in a flow-through fashion, and 20 cases of fingertip reconstruction were performed using a short pedicle mini innervated transverse DRAP flap. All free flaps were innervated by the palmar cutaneous branch of the median nerve or a dorsoradial branch of the superficial radial nerve.

Results:
All 79 RASPB free flaps survived and all 14 digits re-vascularized successfully. One flow-through free flap developed distal skin necrosis which healed uneventfully without further procedure. The average follow-up was 21.5 months. Measurement of two-point discrimination ranged from 7 to 13 mm. All patients were satisfied with the aesthetic results.

20 consecutive traumatic fingertip injuries (M:F-14:6) were reconstructed with a free DRAP flap from the same hand. 6 index, 6 middle, 5 ring and 3 little finger defects were included in this study. The average operative time was 105 (85-120) minutes. Each flap size was matching the size of the defects. All donor sites achieved primary closure and good cosmesis. The average follow-up was 12.8 (6-28) months. Follow-up demonstrated a static two-point discrimination of the flaps with an average distance of 5.5 (4-7) mm.

Conclusion:
The innervated RASPB free flap is feasible and effective option for the reconstruction of complex digital defects also in a flow-through fashion to enable reliable re-vascularization. The innervated DRAP flap has proven to be an easy, reliable and effective sensate fingertip reconstruction option, utilizing the supermicrosurgery technique.
Replantation And Revascularization Of The Upper Extremity: Clinical Experience Of A Microsurgical Department

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Since the pioneering works of Malt and Komatsu and Tamai in the 1960s, thousands of replantations and revascularizations of the upper extremity have been performed worldwide. The advent of microsurgery allowed surgeons to replant or revascularize essentially any amputated part. However, the mechanism of injury or patient comorbidities are important factors that can affect the outcome of the intervention.

Patients submitted to upper extremity replantation or revascularization between 2014 and 2017 were retrospectively analyzed. Demographic features, type of accident, mechanism of injury, amputation level and success rate were examined.

Over the 4-year period were performed 39 replantations and 17 revascularizations. The vast majority of patients were male. The mean age was 45.2-years-old in the replantation group and 54.7-years-old in the revascularization group. In both groups, the crush/avulsion was the most common mechanism of injury. The overall success rate was 56.4% in replantation and 70.6% in revascularization.

The success of revascularization is higher than replantation, however, the mechanism of injury seems to be a critical determinant of the outcome.
Distal Radius Reconstruction With Vascularised Free Fibular Flap
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Giant cell tumor of the distal radius is fairly common and difficult to treat due to the high recurrence rates. We report our experience using free vascularised fibular flaps following en bloc resection of the distal radius in 12 patients with recurrent pathology, and evaluate outcomes for this technique.

Methods:
Initial evaluation of our patients included plain radiography and clinical assessment with only 3 patients requiring further investigation with ct scan/ mri scan. Following appropriate counselling on available reconstructive options, all the patients underwent en bloc resection followed by reconstruction with a vascularised fibular autograft. The ipsilateral fibula was harvested together with a small part of the attached ligament, and the articular surface of the fibula was fixed to the scapholunate articular surface. An appropriate dynamic compression plate was used to fix the autograft to the proximal radius. Following surgery, patients underwent rehabilitation and were followed up.

Results:
Average follow up for our patients was 18 months (range 8 to 26 months), with most patients achieving radiological union within 4 months. No patients presented with lung metastases or recurrent disease, and overall, 9 patients have reported good to excellent functional wrist scores, having regained on average 60% of the normal contralateral function and range of movement and satisfactory grip strength. 9 patients were pain free and 10 patients have been able to return to work. 2 patients have required further surgery to stabilise dorsal subluxation of the autograft. No patients presented with postoperative peroneal nerve palsy.

Conclusion:
Aggressive surgical resection with immediate free fibular flap reconstruction is an effective way to achieve local tumor clearance and regain functional outcome of the wrist joint in patients with recurrent gct of the distal radius. Healing of the vascularised autograft is greatly enhanced whilst the risk of bone resorption is very low, therefore this option is the decision of choice in recurrent disease or grade iii disease of the distal radius.
A Comparison Of The In Vivo Topography And Vascular Anatomy Of The 2nd And 3rd Intercostal Spaces For Internal Mammary Vessel Exposure During Total Rib-Sparing Microvascular Breast Reconstruction

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Background:
Total rib-preserving free flap breast reconstruction (RP-FFBR) using internal mammary vessel (IMV) recipients usually involves vessel exposure in the 2nd or 3rd intercostal spaces (ICS). Although the 3rd is more commonly used no direct comparisons between the two have hitherto been performed.

Objectives:
To compare in-vivo topography and vascular anatomy of 2nd and 3rd ICSs in patients undergoing free flap breast reconstruction using the rib-preservation technique of IMV exposure.

Methods:
An analysis of prospectively collected data on intercostal space distance (ISD), number and arrangement of IMVs, location of venous confluence and vessel exposure time was conducted on a single surgeon’s consecutive RP-FFBRs.

Results:
310 RP-FFBRs were performed in 255 consecutive patients. The 2nd, 3rd or both 2nd/3rd spaces were utilised in 290, 30 and 24 cases respectively. The ISDs were 20.6mm±3.59 for the 2nd and 14.0mm±4.20 for the 3rd ICSs (p<0.0001, CI=5.16-8.44, t-test). The 2nd versus 3rd ICS vein content was: single 81%vs68%, dual 19%vs32% and confluence 4.7%vs16%. The 2nd ICS single vein was medial to the artery in 92%. The 3rd ICS single vein was medial to the artery in 88.2%
Vessel exposure times for 2nd (46.7mins±26.5) and 3rd (44.8mins±29.4) spaces were similar (p=0.79). The overall intra-operative anastomotic revision rate was 9.3%, postoperative flap re-exploration rate was 4.2% with 99.7% overall flap success.

Discussion and conclusion:
Preferential use of the 2nd ICS is supported by its more predictable vascular anatomy, broader space for performing the microanastomoses and higher frequency of a single post-confluence (and thus larger) vein facilitating the microsurgery.
A Long Term Correlation Analysis Of Vascularized Lymph Node Transfer Outcomes In Breast Cancer-Related Lymphedema

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Purpose:
Vascularized Lymph Node Transfer (VLNT) is a well established approach in Breast Cancer Related Lymphedema (BCRL) treatment. However, many aspects of these microsurgical procedures, are yet to be defined. The “Selected Lymph Node” (“SeLyN”) technique, ensures safe and effective selection of the most functional (radioactive) and suitable lymph nodes (LNs). The aim of our study is to assess the impact of certain VLNT flap characteristics on outcomes for BCRL patients.

Materials & Methods:
From 2012 to 2016, a retrospective study was conducted on BCRL patients undergoing lymphatic reconstruction with the “SeLyN” technique. Recorded data included patients’ characteristics, flap details, complications, final outcomes. In a total of 41 patients, 8 suffered from Stage I, 25 Stage II and 8 Stage III.
Lymphedema stage, flap size, vascular pedicle and number of LNs, were evaluated for correlation in long term volume reduction. Flaps were also divided in small (<25cm²) and large (>25cm²) and outcomes examined.

Results:
A total 28.36cm² mean flap size, including a mean of 3.4 LNs recorded a mean Volume Differential Reduction (mVDR) of 55.28%. Forty patients had no flap or donor site complications within a mean follow-up of 29 months, and one had a total flap failure.
Small flaps (n=16) included a mean of 2.8 LNs per flap and resulted to 49.66% mVDR, and large flaps (n=24) included a mean of 4.8 LNs per flap (p=0.002), leading to 60.1% mVDR (p=0.225).

Eight out of the 24 larger flaps were combined VLNT and DIEP flaps, whereas only 4 out of the 16 smaller flaps were such cases.
The mVDR in each lymphedema stage was found 53.7%, 54.6% and 62% for Stages I, II and III accordingly, showing non statistical significance between stage and volume reduction.

Concerning the vascular pedicle, SIEA or SCIA/SCIP were equally distributed between small and large flaps, yielding no significant impact on volume reduction.

Conclusions:
In our series, lymphedema stage and flap pedicle were not found to influence the mVDR, while flap size was directly correlated to better outcomes. More specific, although large flaps (>25cm²) were found statistically non-significant in mean volume reduction, clinical findings suggest the merit of harvesting such flaps. This highlights the necessity of meticulous elevation, and the SeLyN technique provides the safety of the procedure. Finally, cases of synchronous breast reconstruction with DIEP flaps, allowed the transfer of larger LN flaps, offering more favorable results.
A Systematic Review And Meta-Analysis Comparing Venous Coupler Devices With Hand-Sewn Anastomosis In Microsurgical Free Flap Reconstruction

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Background:
Both venous coupler devices and hand-sewn venous anastomosis techniques are routinely used in reconstructive free tissue transfer. Advantages of venous couplers over hand-sewn anastomosis have been discussed in the literature. There has been no systematic review and meta-analysis to directly compare both procedures to date. The aim of this review was to evaluate the quality of the evidence and quantify the efficacy and safety of venous coupler devices compared to hand sewn anastomosis.

Methods:
A PRISMA compliant systematic review and meta-analysis was performed. A comprehensive search strategy was developed and applied to the databases MEDLINE and Embase from inception to January 2018. Search results were reviewed by two authors to determine relevant studies. All clinical studies using anastomotic coupler devices for venous anastomoses in free tissue transfer reconstruction were included. Our primary outcome measure was postoperative venous thrombosis rate. Secondary outcome measures included time to complete a venous anastomosis and postoperative adverse event rates. The risk of bias for included studies was assessed by using the NIH Study Quality Assessment Tool and recommendations based on the evidence was made using the GRADE approach. Descriptive statistical analyses were used and if two or more studies reported the same outcome, data was pooled for comparative analysis. A direct comparison meta-analysis was then performed for the primary outcome.

Results:
A total of 27 comparative retrospective studies including 9539 patients were included in this review. A total 11,432 free flaps were used for breast, head and neck, extremity and other reconstructions. The venous thrombosis rate was 0 – 9 % for coupled and 0 – 12 % for hand-sewn anastomosis. Direct comparison meta-analysis of 8 eligible studies showed no difference in post-operative thrombosis rate (OR 0.63 [0.28-1.40], p=0.26). Surgical time needed to perform venous anastomosis was 3 – 15 minutes for the venous coupler device and 20.75 – 24.7 minutes for hand-sewn anastomosis.

Conclusion:
A direct comparison meta-analysis of both techniques shows no significant difference with regards to thrombosis rates. Venous coupler devices and hand-sewn anastomoses appear to be safe and efficient in microsurgical free tissue transfer. More evidence is needed to compare their efficacy to hand-sewn venous anastomosis for flaps with size-mismatch between donor and recipient vessel. The influence of coupler size on venous thrombosis and flap survival should further be investigated either through prospective data collection in the first instance.
Botulinum Toxin Augmented Free Gracilis Flap And Local Peroneus Brevis Flap For Chronic Ulcers In A Patient With Systemic Sclerosis And Secondary Raynaud Syndrome – A Case Report

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Introduction:
Raynaud syndrome is a disorder with abnormal vasoconstriction of the distal limbs and cutaneous vessels in reaction to cold, stress or other stimuli. The underlying cause in our patient is systemic sclerosis, known as a systemic illness of the connective tissue with fibrosis of the skin and inner organs as well as obliterating angiopathy. Several conservative and surgical treatment methods had failed, resulting in the need for a complication-susceptible free and local tissue transfer. Since botulinum toxin has previously been used for the treatment of Raynaud syndrome of the hands, we decided to use its effects on autonomic and adrenergic nerves in order to influence the vasomotor tone and thus potentially improve vascular patency.

The aim was to achieve wound closure with a microvascular free gracilis flap and local peroneus brevis flap reconstruction after preoperative periartrial sympathectomy with botulinum toxin in our patient.

Materials and Methods:
In a 58 year old female patient with Raynaud syndrome due to systemic sclerosis and subsequent chronic ulcers of the lower limbs, we performed a free gracilis and local peroneus brevis flap. The donor and recipient site were pretreated with a total of 100E of botulinum toxin before surgery in order to prevent postoperative thromboembolic or vasospastic complications. Postoperative monitoring, anticoagulation and follow-up were identical to healthy patients.

Results:
Long-term wound closure was achieved with a free gracilis flap and a local peroneus brevis flap after preoperative treatment with botulinum toxin.

Conclusion:
This report describes the first successful case of a free gracilis flap in a patient with systemic sclerosis and Raynaud syndrome after influencing the microvascular environment with botulinum toxin. Periartrial sympathectomy may prevent complications in high-risk patients, encouraging free and local flap reconstruction despite the underlying disease and thus preventing lengthy unsuccessful conservative treatments.
Color Doppler Ultrasonography Targeted Reconstruction Using Pedicled Perforator Flaps

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Color Doppler ultrasonography targeted reconstruction using pedicled perforator flaps

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Background:
Perforator flaps are increasingly popularized in reconstructive surgery and there is need to test and increase their reliability. Color Doppler ultrasound has been stated to be valuable in flap planning. The aim of this study was to conduct a systematic review and meta-analysis of the literature of Color Doppler ultrasound targeted pedicled perforator flaps and provide a information on outcomes and complication rates.

Materials and Methods:
A systematic review and metaanalysis was conducted for articles published until April 2017 in PubMed and Embase. We aimed to include randomized clinical trials, meta-analysis, prospective studies, case-control studies and cohort studies written in English. We included studies where CDU was used to identify the perforator(s) prior to surgery. We evaluated the quality of the included studies using checklists recommended by the Cochrane group.

Results:
From the initial 219 studies only 12 studies using Color Doppler targeted pedicled perforator flaps in 252 cases met the inclusion- and exclusion criteria. Eleven of these were case series and one a prospective study. The incidence of major complications was 8% (21/252) and minor complications was 14%, comprising of mostly necrosis 8% (24/252) and venous congestion8% (21/252).

Conclusions:
The reconstructive success rate following pedicled perforator flap reconstruction targeted by CDU appears to be high and the procedure provides a wide scope of applications and margin of safety. It is evident that the risk of venous congestion is 11 times greater in the lower extremities than the truncus, a finding that needs further attention in future studies.
Innovations In Microsurgery With Free Serratus Fascia Flap - Anatomical Study And Novel Versatile Clinical Applications

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Purpose:
Coverage of exposed functional structures requires thin, supple tissue. Various flaps have been described, however excessive bulk and donor site morbidity remains the common problem. The Serratus Fascia “free flap of gliding tissue”, based on thoracodorsal vessels, includes fascial layer overlying Serratus muscle between Latissimus Dorsi und Pectoralis Major Muscle. This flap provides excellent replacement properties for defects with loss of fascial layer. However this flap did not received a widespread acceptance in the world literature. Therefore the aim of the study was to analyze the anatomical details/clinical relevant variations in a cadaver dissection study and finally the clinical application of this flap for innovative versatile indications. To our knowledge this is the first structured and detailed anatomical study of this flap.

Methods:
10 fresh cadaver dissections were performed. Measurement of diameter, length, number of branches, origin, topographic relation and anatomical landmarks of long thoracic nerve, thoracodorsal artery with serratus branch, lateral thoracic artery and flap dimension was done with flexible micrometer.

Results:
The average flap dimension after harvesting was 15 x 20 cm. The mean effective pedicle length of the thoracodorsal artery was 15.1 cm ± 3.8 cm. The diameter of the serratus branch was 2.2 mm ± 0.6 mm, in 60 % occurred 1 serratus branch, in 30 % 2 branches and in 10 % 3. In 80 % a collateralization with lat. thoracic artery was observed. The clinical application of this flap was performed for novel indications as extensive craniofacial defects, defect coverage of lower extremity wounds and as a “wrap around flap” at axillary plexus after neurolysis in painful neuritis after mastectomy.

Conclusion:
Based on this anatomical study and clinical innovative applications the Serratus fascia flap, with reliable flap dimension (larger/safer then temporoparietal fascia flap), has potential for various clinical applications beyond coverage of hand defects and extremity wounds. The flap is thin, supple with excellent functional and aesthetic properties. We think that the free serratus fascia flap is an underestimated valuable alternative in reconstructive microsurgery.
Posters
A Simple And Novel Approach In Treating Congenital Symmastia (Using Tisseel)
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Introduction:
Symmastia is a medial confluence of the breasts. It consists of two forms, namely iatrogenic/acquired and congenital. Iatrogenic symmastia is a complication arising from breast reconstruction/augmentation whereas congenital symmastia is rare condition and only a few cases have been reported.

In contrast to iatrogenic symmastia treatment of congenital symmastia is challenging. Traditional surgical options (breast reduction with or without liposuction and intermammary quilting) do not address the root cause of the problem. Several other surgical approaches have been reported as well but there is no gold standard of treatment.

Method:
We present a novel approach in treating symmastia following Blondeel’s theoretical ‘three step principle’ (conus, footprint and skin envelop) of visually aesthetically pleasing breasts. A 20-year-old woman was referred to the plastic surgery department due to lack of cleavage. Clinical examination revealed a moderate congenital symmastia and was listed for surgery.

Our management followed a 2-step approach.

The pre-sternal conus was initially liposuctioned via an inferior medial incision where 100cc was obtained.

Secondarily, 4 cc of Tisseel was injected into the area and compressed for 5-10 minutes. We noticed a significant reduction of the conus in the pre-sternal area with good adherence of the medial borders to the sternal periost forming a normal footprint. Post-operatively she was given a custom-made compression bolster made of foam to facilitate pre-sternal compression and a reversed T back support garment.

Patient retained her cleavage 1 week after surgery. She is to use the garment for 6 weeks post-op all day and further 6 weeks during the day.

Conclusion:
Tisseel is a fibrin sealant used as an adjunct to haemostasis and standard surgical techniques to prevent leakage.

Currently, majority of the treatments reported result in significant scarring and or need for further procedures. Following Blondeel’s ‘three step principle’ we were able to improve the cleavage by correcting the conus, the footprint and the skin envelop through minimally invasive and easy to perform procedure with no recurrence. Our patient was extremely happy with the outcome.
The United Kingdom National Flap Registry: How Do We Stack Up?
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Introduction:
The UK National Flap Registry is a cross specialty, national clinical audit collaborating between the British Association of Plastic, Reconstructive and Aesthetic Surgeons and the Association of Breast Surgeons. It assesses outcomes following all major pedicled and free flap breast reconstructions in the U.K.

Data on flap outcomes is collated and the quality of care provided to patients is assessed at 6 months and 12 months via Patient Recorded Outcome Measures i.e Breast-Q reconstructive questionnaires.

Aim:
To assess Unit compliance within the breast and plastic surgery department at a single institution for the registration of pedicled and free flap breast reconstructions.

Methods:
A retrospective review of all breast reconstructions performed over a one year period was evaluated. Data was derived from an electronic coding system using Healthcare Resource Group codes generated from the key phrases “free”, “pedicled”, “breast”, “reconstruction” and “flap”.

Results:
31 female patients were identified, with an average age of 54 years (33-71).
13 pedicled flaps and 18 free flaps were performed. Of these, 12 were registered on the UK national flap database, generating a 39% compliance rate.

Discussion:
Following presentation at clinical governance, feedback comments for poor engagement with the registry included poor website design, lack of awareness and uncertain motivation for the dataset. We promoted the use of the U.K. National Flap registry at both the plastic surgery and breast surgery clinical governance meetings and are in the process of re-evaluating its impact.

Conclusion:
National clinical registries are trending globally for their value in producing powerful, meaningful data. We encourage and invite other institutions, both in the U.K. and internationally to establish and promote awareness of national registries, in order to monitor quality of patient care and provide feedback to improve clinical outcomes.
Laser-Assisted Indocyanine Green Angiography In Implant-Based Immediate Breast Reconstruction - A Retrospective Study.
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Objective:
Necrosis in implant-based immediate breast reconstruction is a feared complication. Accurate evaluation of mastectomy skin flaps per-operatively is necessary to decrease this risk. The present study is the first in Scandinavia to review the effects of perioperative evaluation with laser-assisted indocyanine green fluorescence angiography (LA-ICGA).

Method:
A retrospective review was performed using data from the electronic patient record at the Department of Plastic and Breast Surgery at Aarhus University Hospital in Denmark on all patients who underwent implant-based skin sparing immediate breast reconstruction with ADM in the time period March 2012 to October 2015. A total of 92 patients undergoing 128 breasts reconstructions were included in the study. An evaluation of complications before and after the implementation of LA-ICGA was performed.

Results:
No significant difference in necrosis rates requiring surgical revision (p = 0.411) or conservative treatment (p = 0.149) in patients undergoing implant-based immediate breast reconstruction were found.

Conclusion:
Our results differ from previously published studies in that no beneficial effect on necrosis rates of was found after implementing LA-ICGA, possibly due to our limited sample size.
Advantages And Limitations In The Use Of Internal Mammary Artery Perforator As A Recipient Vessel In Microsurgical Breast Reconstruction.

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Background:
The establishment of free flap use and the parallel development of microsurgery set the scene for the search of the ideal recipient vessel as a key success factor. Thoracodorsal vessels characterized initially as the best choice in free flap breast reconstruction as they offer adequate calibre and easy dissection. With the sentinel lymph node biopsy and the increased role of skin-sparing mastectomy intramammary vessels prevailed as a choice demonstrating consistent anatomy and allowing comfortable surgeon’s position and flap placement with medial fullness.

Methods:
The present study analysis the recorded options of available recipient vessels in free flap breast reconstruction and emphasizes on the potential use of the intramammary artery perforators (IMAP).

Results:
The required rib resection with a relevant recorded morbidity and the fact that the selection of IM vessels precludes its use for future coronary revascularization are some recognised disadvantages. On the other hand, IMAP predominately located in the second intercostal space is presented in several studies as recipient vessel for free tissue breast reconstruction with a utilization rate from 5.5 to 83%. This wide range is partially attributed mainly to the uncertain availability of an IMAP which has a relatively smaller mean diameter fluctuating between 0.85 and 1.9mm for the artery and between 1.14 and 2.9mm for the vein.

Conclusions:
Generally, the use of IMAP as recipient vessel could be advantageous and increases significantly according to a learning curve; however is not always feasible and prerequisites an experienced microsurgical team and the preoperative mapping of intercostal vessels.
Nipple Sharing: An Undervalued Technique In Nipple Reconstruction
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Introduction:
Nipple reconstruction may be performed surgically using local flap or nipple sharing techniques. In the authors’ experience, nipple sharing can result in superior aesthetic outcomes and high patient satisfaction. However, in our unit where more than 300 free flap breast reconstructions are performed annually, it is seldom offered to suitable patients.

Methods:
For this study, we sent out patient questionnaires to 60 patients who had undergone nipple reconstruction (local flap or nipple share) in our unit under the care of a single surgeon. Patients were asked to evaluate aspects of their nipple reconstruction and donor nipple in nipple share cases. For the second part of the study, we conducted a short clinician survey involving all eight breast reconstructive surgeons in our unit who regularly perform nipple reconstruction surgery. Surgeons were asked about their preferred method of nipple reconstruction and experience with nipple sharing.

Results:
The response rate of the patient surveys was 53%. Patients who had had nipple reconstruction with nipple sharing gave higher scores for all nipple features (including size, projection, colour and texture) and were more satisfied with their new nipple compared to the local flap group. No patients who underwent nipple sharing had any donor nipple complications. 100% of the nipple share patients said they would undergo the same procedure again compared to 76% of the local flap group.

The clinician surveys showed that the nipple sharing technique was only preferred by one consultant, whilst all others preferred local flap reconstruction. Only two consultants had seen/performed more than 10 nipple share procedures over their career.

Conclusion:
Nipple sharing achieves a like-for-like reconstruction, resulting in the colour, texture and long-term nipple projection that is not achievable with local flaps. Overall patients were more satisfied in the nipple share group. Unfamiliarity with the nipple sharing technique appears to contribute to surgeons’ preference to use local flap nipple reconstruction despite our consistently positive experience with nipple sharing.
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Introduction:
The LiCAP flap is a versatile fasciocutaneous pedicled flap commonly used in breast-conserving surgery to address volume deficits. The flap is based on lateral intercostal artery perforators, enabling harvest of flaps up to 25 cm in length and 12 cm in width from the lateral chest wall and back. Transposition or rotation of the LiCAP flap anteriorly can provide soft tissue for partial breast reconstruction. Though lipomodelling is generally the preferred technique to address contour deformities following breast reconstruction, the use of a vascularised flap may be beneficial where lipomodelling is insufficient for contour correction.

Case:
A 46 year-old female, BRCA-1 carrier, non-smoker, BMI 25 and bra size 36-B, underwent bilateral prophylactic skin-sparing mastectomies and immediate reconstruction in 2015. Hemi-DIEP flaps were used, oriented in a ‘bikini triangle’ fashion.
Over time, both DIEP flaps developed significant ptosis within the skin envelope, leaving a very noticeable hollowing in the upper and lateral aspect of the reconstructed breasts. A correction was attempted initially by lipofilling and uplift repositioning of the flaps 10 and 18 months after the initial surgery respectively. The aesthetic improvement was deemed unsatisfactory. Bilateral LiCAP flaps were therefore used to address the contour defects.

The patient was marked pre-operatively and position of LiCAP flap transfer into the contour defects was marked. The patient was placed in the lateral decubitus position, addressing one side at a time. The pocket was created and the flap raised in a standard fashion, with an incision at the lateral inframammary fold, extending onto the back. The lateral thoracic arteries were identified and the flaps were raised posterior to anterior in a subfascial plane. Two lateral intercostal perforators were identified on each side, located 2-3 centimeters anterior to the anterior border of latissimus dorsi muscle. The skin paddles were de-epithelialized and folded into the skin pockets created on the superolateral chest wall. The apex of the flap was anchored at the medial aspect of the defect with a percutaneous anchor suture which was removed at 10 days post-operatively. Wound healing was uneventful.

Clinical examination and photographic records reveal a good correction, with a restoration of a pleasing upper pole contour with soft and supple soft tissue. This case highlights the usefulness of this reconstructive option. The LiCAP flap is a reliable flap with low donor site morbidity, ideal for importing vascularised tissue for correction of challenging contour deformities in the setting of previous breast reconstruction.
Techniques Used In Reducing Mammoplasty: A Systematic Review.
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Introduction:
Breast plastic surgery is one of the most performed in the world and reduction mammoplasty, in turn, offers the solution to correct functional and aesthetic problems caused by bulky and/or ptosed breasts. The search for a more pleasing shape (adequate volume, suspension and breast shape) and long-term breast development led to the proposition of numerous techniques for reductive mammoplasty, paying close attention to the pedicle responsible for the vascular supply of the areola-papillary complex.

Objective:
This systematic review aims to describe the scientific evidence related to the technique used in breast reduction surgery and to evaluate the complications related to the choice of the reduction mammoplasty technique, as well as to approach the scar shape in hypertrophic breasts.

Methodology:
The research was carried out in five databases - PubMed, Cochrane, LILACS, Scielo and Virtual Health Library - using the descriptors "mammaplasty", "reduction", "techniques" and "adult" in the period from 2013 to January 2017. The quality of the articles was evaluated by the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) criteria.

Results:
Nine articles were selected because they obey the inclusion criteria, totaling 2,527 patients and six techniques studied. Reducing mammoplasty of the inferior pedicle was the technique present in a greater number of articles, being used in four studies totaling 496 patients operated by the technique. The most common complication, present in five of the nine studies, was a surgical wound infection in 87 patients. Most of the authors used the inverted T-scar, present in seven studies and totaling 1599 women.

Conclusion:
The use of the inferior pedicle was the technique used in a larger number of studies being chosen by the authors for the following reasons: fewer complications and indication for larger breasts. The scar shape that was most described in the studies was the inverted T-scar. Regarding the complications, it was noticed that the infection of the surgical wound was the complication seen in a greater number of patients.

Keywords: Surgery, Plastic. Mammaplasty. Women. Systematic Review.
Breast Reconstructive Options In Poland Syndrome: Presentation Of A Rare Case
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Aims:
Case presentation of a rare syndrome, pathogenesis of the disease, the systematic approach and management of the patient to diagnose the secondary congenital anomalies of the syndrome, the reconstructive options and surgical techniques to restore the breast symmetry and function.

Methods:
Search within the international literature through Medline, Google Scholar, Cochrane library using the following key words: Poland syndrome, breast aplasia / hypoplasia, latissimus dorsi myocutaneous flap, silicone implant, Klippel-Feil syndrome, Moebius syndrome, Sprengel syndrome.

Results:
Thorough assessment of the patient with Poland syndrome, patient education, multidisciplinary team approach, reconstructive options.

Conclusions:
Poland syndrome is a rare congenital malformation of the thoracic wall which has an incidence of 1:7,000 to 1:100,000 births. It is caused due to the abnormal blood flow in the subclavian artery during the embryogenesis. The major features include aplasia or hypoplasia of the following structures: breast with or without the nipple-areolar complex, subcutaneous fat, pectoralis major and/or minor muscle, rib cage anomalies, according to the classification of Foucras. Sometimes there is co-existing symbrachydactyly, whereas in rare instances there is an association with breast cancer, dextrocardia, renal anomalies, and some rare syndromes, such as Klippel-Feil syndrome, Moebius syndrome and Sprengel syndrome. The reconstructive ladder consists of several methods: fat grafting, lipofilling, autologous fat transfer, silicone implants, tissue expanders, pedicled flaps (transverse rectus abdominis muscle flap, latissimus dorsi myocutaneous flap with or without nipple tattooing, bone graft to accomplish thoracic wall reconstruction), free tissue transfer with deep inferior epigastric flap. Finally, where indicated a conservative strategy may be implemented according to the patient wish with the use of an artificial silicone breast.
Management Of The Lateral Breast - A Novel Use Of The V-Y Advancement Flap
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Breast asymmetry is a common finding in developing adolescents. In select cases, there is maldevelopment of one or both breasts which persists into adulthood and causes a significant negative impact on life. Various surgical techniques (e.g., breast augmentation/reduction) and non-surgical techniques (e.g., bras/gel inserts) are currently in practice to achieve breast symmetry.

We describe a unique case of a young lady with Poland’s syndrome, who presented with a lateralized right breast. We have used a V-Y advancement flap, along with a breast implant, to medialize the breast and achieve symmetry in contour and volume, followed by medialization of the nipple areolar complex. Using this technique produced an excellent result for our patient. We, therefore, feel that using the V-Y advancement flap is a novel and good option for dealing with difficult cases of a lateralized breast.
Secondary Procedures In Breast Recontruction To Achieve A Better Aesthetic Result
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The technical refinements in mammary reconstructions include several procedures in order to improve the aspect of reconstructed breast. In the transverse rectus abdominal muscle flap (TRAM-FLAP), symmetry is difficult to be achieved on the first surgery, resulting secondary or even more operations to obtain matching breast shape and NAC reconstruction. Independently of the period of reconstruction, liposuction, neighborhood flaps, modification of the mastectomy and intradermal tattoos will provide better aesthetic results.

The authors presented their personal experience in cases of immediate and delayed reconstructions of TRAM-FLAPS with refinements resulting a great acceptance on the part of patients with smaller costs and reduction of number of procedures.
Bulls-Eye Hip Reduction: A New Approach In The Correction Of Saddlebags In Massive Weight Loss Patients
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Introduction:
Plastic surgery after massive weight loss is one of the fastest growing areas in plastic surgery today. Only few articles have described surgical approaches for outer thigh-plasty. Most patients have difficulty in fitting pants, and are describing discomfort when sitting on a chair and during physical activity. The aim of this poster is to describe a new surgical method in removing excessive skin from the outer thigh area. The technique is referred to as Bull’s-eye Hip Reduction and is based on a purse-string suture.

Materials and Methods:
From February to April 2017 four patients underwent lateral thigh-plasty at the Department of Plastic and Reconstructive Surgery at Odense University Hospital, Denmark.

Procedure:
The patient is marked in a standing position. Initially the centre of the hip joint is marked and from this point a circle with a diameter of 9-11 cm is outlined. The patient is then placed in a supine position. The first key step in the operation is to make a purse-string suture in the skin along the outlined circle using a PDS 0 loop suture. Tightening of the loop follows this and an inner circle is drawn along the suture line. The loop suture is then removed, and the redundant tissue to be excised is the circumferential area between the outer and inner circle. Using a monopolar cautery skin and subcutaneous tissue is removed to the deep fascia of the lateral thigh. The defect is closed in the superficial fascia with a running PDS 0 loop suture. The skin is sutured using a running 2-0 vicryl and 3-0 monocryl (fig. 1).

Results:
All patients were women and all had lost weight after a gastric bypass operation. The median age was 47.8 years (range, 44-54 years). The median weight loss was 69.5 kilos (range, 50-101 kilos) and the median body mass reduction was 25.4 (range, 18.3-38.8). All patients were non-smokers. One patient had a well-treated asthma, and two patients were in treatment for depression. Three complications occurred; two cases with minor wound dehiscenses, and one case with paresthesia. All resolved spontaneously. At three-month follow up all patients were satisfied.

Discussion:
The Bull’s eye hip reduction procedure is a new approach in correcting skin redundancy at the outer thigh. The procedure restores the outer thighs satisfactory and gives a fine and natural appearance. All patients were pleased with the aesthetic result and had improvement in their daily activity.
Morbidity In Abdominoplasty In Post Bariatric Patients: Our Experience
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Aim:
The aim of this retrospective study was to individualise post bariatric patients with complications undergone abdominoplasty procedure at the Department of Plastic Surgery, Royal Preston Hospital. We identified pre, intra and postoperative factors related to morbidity and we made proposals for improving the management of these patients.

Material:
A retrospective study was performed that included all post bariatric patients who had undergone abdominoplasty in our unit, during the 3-year period from April 2013 to March 2016. All medical records were reviewed. The Department generally requires that patients have a current BMI ≤ 28 kg/m and starting BMI above 40kg/m² or above 35kg/m² with co-morbidities for them to be approved for a full abdominoplasty.

Results:
All 24 consecutive patients operated during the study period were included. The average weight loss after their bariatric surgery was 68kg (20 gastric bypasses, 2 sleeve gastrectomies, 1 gastric banding and 1 one duodenal switch) and all patients had weight stability at least 12 months.

The abdominoplasty technique included a Fleur-de-lis with a vertical incision in 16 patients, a W-type lower abdominal incision with umbilicus repositioning in 4 patients, a circumferential abdominoplasty in 3 patients and 1 patient has undergone apronectomy. All patients had two drains inserted. The defect was closed in 3 layers with absorbable sutures in the superficial fascia, dermis and skin.

The average days in hospital was 6 (min 2 days – max 14 days). The average days of drains left in situ was 7 (min 2 days – max 17 days). Five patients have been discharged with drains still in situ and had no complications. Minor complications recorded were seroma not requiring intervention, superficial wound dehiscence with delayed wound healing. Major complications were flap necrosis and umbilicus necrosis requiring surgical intervention.

We found overall complication rate of 18%. We identified that patients who had complications presented with a past medical history of one or combination of more comorbidities such: hypertension, diabetes mellitus, smoking, deep venous thrombosis and previous operations with abdominal scars.

Discussion:
Postoperative complications are frequent in post bariatric surgery patients. Patients with additional risk factors as mentioned above should require even more attention in the preoperative, intraoperative, and postoperative management. It is recommended optimisation of the diabetic and hypertensive status for two weeks prior surgery and quit smoking three weeks before and after surgery to optimise outcomes.
It's Time To Revisit The Design Of The Rhomboid Flap And Its Variants

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Objectives:

Rhomboid flaps and their variants are workhorse local flaps for the reconstructive surgeons. Their optimal orientation and planning can be challenging for beginners as well as more experienced surgeons and methods have been suggested to help with their design [1].

In this abstract, an improved reproducible stepwise method of flap design is suggested and where possible mathematics is used to explain the design that takes advantage of the differential skin laxity in order to minimize skin tension and produce the best cosmetically acceptable result.

Materials & Methods:

Previous work on the rhomboid flap has shown that the direction of placement of the vertical limb of this flap in relation to the lines of maximum extensibility (LME) is the most critical step in minimizing tension in the resultant flap [1]. Using trigonometry, it can be shown that the optimal angle for the position of this diagonal is at 30 degrees to the relaxed skin tension lines (RSTL). Assuming a round defect, the proposed method suggests that firstly the optimal donor site in terms of cosmesis and laxity is identified and the direction of the RSTL is drawn as a reference. The RSTL line is then translated into the defect by drawing a parallel line bisecting the defect into two. A clock face (1-12) is then drawn with the 12 and 6 o'clock positions where the translated RSTL intersects the edge of the defect. A line is then drawn from the 1 to the 7 o'clock position (or 11-5 o'clock) and extended towards the direction of the donor site by the same length as the diameter of the defect. This is the 30 degree optimal diagonal. The flap is then completed by drawing another line of equal length to the vertical limb at 60 degrees to this limb. Of the two options possible, the optimal one is the one that can be bisected by the RSTL. The resultant flap is a modified rhomboid, but where a classic rhomboid is desired, the 4 limbs of the rhomboid can be drawn using the diagonal line as reference point and drawing each limb at a tangent to the defect (see diagram).

Conclusions:

A method for simplifying the design of a versatile local flap is described flap that can be used to resurface circular defects with minimal tension and good cosmesis.

References:

Tranexamic Acid Application In Reduction Mammoplasty - Way To Reduce Postoperative Hemorrhage.
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Introduction:
Tranexamic acid is an antifibrinolytic drug that inhibits the enzymatic breakdown of fibrin molecules formed in blood clots. TXA isn’t well known in plastic surgery. The idea is if TXA can be used to reduce postoperative hemorrhage in reduction mammoplasty.

Materials and Methods:
This study compares postoperative bleeding in 31 healthy female patients, aged 21-64, that underwent bilateral reduction mammoplasty. 16 of them were treated with TXA. To avoid possible side effects of iv application, we applied TXA topically (1g per 200mL 0,9% saline water) and irrigated surgical wound through the procedure. After 24h, drain fluid production and VAS score was measured. Cut off value for drain removal was 20ml – time to drain removal was observed, so as complications were recorded.

Results:
24h drain fluid production was reduced by R-59,5%, L-48,3% in patients who were treated with TXA (mean = R-93,3mL, L-68,3mL, vs. mean TXA = R-37,8mL, L-35,3mL; P = R-0,001, L-0,011). Time for drain removal was significantly lower (mean - 3 days vs. 1,8 days). TXA application had no significant effect on VAS in first 24h after surgery.

Conclusion:
This study shows that TXA can be used in mammoplasty and its usage significantly reduces post-op bleeding.
Fat Grafting: A Cure For Coccydynia?
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The name coccyx is derived from the Greek word for cuckoo due to its beak like appearance. Made up of 3 to 5 vertebrae, some of which may be fused together, the coccyx is slightly concave while the dorsal aspect is slightly convex.

Coccyx pain is known as Coccydynia. It is a debilitating condition that results in pain in the coccyx. This may initially occur due to trauma or child birth, however when this conditions becomes chronic it affects every aspect of a person life and their quality of life. It limits their ability to sit and often limits their ability to work.

Coccydynia is usually treated non-surgically, with oral medications, protective cushioning and local anesthetic injections. The condition can lead to patients becoming chronically dependant on strong analgesia to function. When all else fails, surgical coccygectomy can be done but this is associated with significant after surgery discomfort and a prolonged recovery.

Fat grafting is a safe alternative surgical treatment. It works on several principles including providing soft tissue support to cushion the pain, as well as theories with respect to fat stem cells helping to desensitize and reduce inflamed nerves.

We looked at 20 patients who presented with coccydynia. Patients took a pre op questionnaire assessing their pain and impact on life. They were subsequently fat grafted, around the coccyx with a standard approach. 6 weeks post op they took the same questionnaire again.

In the majority of cases there was an improvement on quality of life and pain scores.
Management Of Complications Due To Liquid Silicone Injection In Buttocks
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The present study reports of 28 cases of patients who had have silicone injections on their buttocks by laid people and were evaluated on our service from 2005 to 2013. Patients were women between the 23 and 37 years old, with low degree of instruction and poor socio-economical profile. In all the patients, redness, pain and pop corn image on RMI were observed. All of them were underwent to subcutaneous excision followed by seqüencial desbridment, until tisne starts granulation. A suction drainage were left in the 100% of the patients, until debt was less than 20cc. Immediate and delayed complications, degree of satisfaction and histopatologic result have been studied on the work. On this study, we had observed lower incidence of early seromas and hematoma. Resolution of sintomatology and high degree of satisfaction were also observed in all of the cases. None of histopathology showed malignant disease. Agressive desbridment with broad spectrum antibiotics seems to be an excellent choice to treat patients with siliconomes, providing resonable aesthetic results.
Streptococcus Necrotising Fasciitis Of The Anterior Abdominal Wall In A Diabetic Patient: Case Report.

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Background:

Hyperglycemia causes immunosuppression, which contributes to the higher risk of infections seen in diabetic patients. Impaired immunity, diabetic neuropathy and microvascular insufficiency are the key pathogenic mechanisms which lead to infections. The three most common soft tissue infections are diabetic foot infections, necrotizing fasciitis and cellulitis, and gas gangrene.

Case presentation:

We present a 76-year-old non-insulin-dependent diabetic obese female who was admitted with sepsis due to gangrene of the anterior abdominal wall. Her surgical history was significant for a sigmoidectomy and cystectomy for colon and bladder cancer, respectively. On examination, a post-operative incisional ventral hernia with necrotic overlying skin was noted. Being systemically unwell, she was treated as per the Surviving Sepsis Campaign Bundle. A computerised tomography scan showed small bowel within the hernia sac. She was optimised by the multidisciplinary team and underwent an emergency exploratory laparotomy, early aggressive surgical debridement and drainage of three abscesses: abdominal wall, subhepatic and pelvic. After meticulous washout, the peritoneal cavity was temporarily closed. Cultures grew Streptococcus anginosus group sensitive to most antibiotics. A second-look operation was undertaken, and definite closure was achieved. Pre-, intra - and post-operative photographs depict the life-threatening condition of necrotising fasciitis. Abdominal wall reconstruction was achieved with component separation. Despite a satisfactory surgical wound management and an aggressive multidisciplinary team input, the patient passed away in the Intensive Care Unit due to resistant acute pulmonary edema.

Conclusions:

Skin infections in immunocompromised diabetic patients can be life-threatening. The primary care physician must refer these patients immediately to the hospital. Necrotising fasciitis, Fournier’s gangrene, intestinal ischemia due to strangulated hernia and suppurative soft tissue infections can prove fatal and must be within the differential diagnosis.
Alternatives To Live Animals Use For Microsurgical Training.
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Introduction:
While the “3R’s” principle was the gnomon for delimitation of ethical rules regarding the use of animals in research, more than 75 million animals are used every year in various scientific experiments. Microsurgical training comprises a part of that number, despite the relevant strict authorization requirements and the high lab maintenance cost.

Methods:
In our study, we present the institutions that organise courses with live animals, but also the gradual implementation of the relevant legislative framework, as well as the modern efforts in the use of Virtual Reality in training. Although rat is the “gold standard” model, we are analysing the alternatives, by reviewing a plethora of non-living models found in the international literature.

Results:
Undoubtedly, the rat model is an ideal subject to test innovative anastomotic techniques and to perform demanding exercises, such as dissection of perforator flaps and organ transplantation. On the other hand, simple prosthetic models can introduce the new surgeon to the basic principles of microsurgery, while sharing the advantages of low cost, easy access, lack of bioethical and legal issues, portability and repeatability; however, the lack of haemodynamic flow does not allow the check of patency. Training with fresh chicken or turkey wing is proved to lead to a significant acquisition of skills, and the porcine heart or spleen, and various discarded human specimens are very realistic models. Although the introduction of a computered-based education would theoretically entail many advantages, it is being tackled today with skepticism mainly stemming from the intrinsic difficulty of Virtual Reality to faithfully perform the properties of the living human tissue.

Conclusions:
The widespread availability of various simulators via internet and systematic self-directed deliberate practice are deemed necessary. Reduction of live animal use can be achieved, limited in approved research protocols and accustomed to more experienced surgeons who wish to familiarize with more complex techniques.
A Simple, Inexpensive And Non-Microscope Based Model For Microsurgical Training
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Introduction:
Microsurgical competence is no doubt linked with fine motor learning which improves with practice and experience. Unfortunately, although several models for microsurgical training exist, they tend to be expensive as they require the use of a microscope and can be the limiting step to their use by trainees at home. We propose an effective and inexpensive non-animate non-microscope model of microsurgical training that has been developed by the senior author for self-practice and teaching juniors.

Materials and methods:
For visualisation the model uses a 2.5x magnification lens with an incorporated stand that is commonly purchased from a hobbyist store for less than £10 [eg Velleman VTMG2]. An external led desk lamp such as the Taotronics TT-DL21 can provide excellent illumination for approximately £17. Microsurgical instruments can be purchased from ebay.co.uk. We recommend the use of a Noyes curved micro scissors (~£6), a curved ophthalmic castroviejo needle holders (£13) and a set of Jewellers Watchmakers tweezers to be used as forceps (~£6). Alternatively a complete set of 12cm titanium instruments can be purchased from aliexpress.com for £37. Training sutures such as 8/0 can also be purchased from ebay.co.uk for around £2.30 each but they can also be obtained from hospital theatres for free by asking appropriate staff when their sterility goes out of date.

The suturing model we recommend is based on vessels made from liquid latex. This can be purchased from art stores and typically costs around £12 for a 1kg bottle [tiranti.co.uk] which can used for the manufacture of hundreds of vessels. The technique recommended to construct the tubes uses a wire of known thickness such a k-wire or a weaving needle. We recommend coating the wire first with vaseline, then with talc powder to allow easy removal of the tube once the latex sets. The wire is the dunked into the liquid latex and then allowed to air dry for a few hours. Multiple dunks into latex can produce thicker vessels. Two small crocodile clips can also be purchased from ebay.co.uk for less than a £1 and can soldered together to make an Ackland clamp.

Results and conclusions:
We describe an inexpensive non-microscope inanimate model for microsurgical training that can be purchased from online sources which can be used to teach and practice microsurgical skills. It is the authors opinion and experience that the skills acquired using this model are transferrable to real life microsurgery.
Factors Influencing Career Decisions In A Large Medical Student Cohort: Lessons To Be Learnt In Plastic, Reconstructive And Aesthetic Surgery

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Aim:
Surgery has classically been a competitive, popular and exciting career choice with plastic surgery one of the most competitive in the UK. However recently, some surgical training programs have experienced a significant decrease in applicants. Negative perceptions threaten recruitment and surgery has been said to have an ‘image problem’. A previous study found the majority of final and penultimate year medical students reported having had no exposure to plastic surgery and misconceptions, due in part to the interchangeable use of the terms plastic, aesthetic and cosmetic surgery, along with an absence of plastic surgery in most medical school curriculums, may put it at risk of this same effect. With increasing demands on services, it is crucial to identify factors that may contribute to an impending recruitment crisis. We aimed to analyze the opinions of 277 medical students, comparing those interested in a surgical career against those not.

Methods:
277 medical students completed a 12-question survey asking for their opinions on surgery, surgeons and the realities of the profession. There were 149 male (54.58%) and 124 female (45.42) respondents. Each statement was scored between 1-7. Respondents were separated into two groups based on their answer to the question “I am likely to pursue a career in surgery”.

Results:
The group considering a surgical career scored significantly higher regarding enjoyment of surgery and the operating theatre as a dynamic exciting environment. They deemed surgeons more approachable, better role models and more motivated. Conversely, students not interested felt that surgery had a ‘required personality’ and their perceived negative image of a surgeon was instrumental in their career choice.

Conclusion:
Students more inclined to pursue a surgical career had better experiences in surgery and with surgeons. However simply increasing exposure doesn’t necessarily change perceptions; it requires more active engagement from surgeons acting as role models to address negative misconceptions. Positive role models and exposure to plastic surgery have been shown to be the most influential factor in a medical student’s decision to pursue a career in plastic surgery; work must therefore be done to encourage this.
Mathematics And Beauty: Breast Shaping In Free Flap Breast Reconstruction
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Introduction:
The Deep Inferior Epigastric Perforator (DIEP) flap is established to be the preferred autologous reconstructive option following breast cancer for its superior aesthetic outcomes and minimal donor site morbidity. Shaping the flap to recreate the neo-breast mound can pose a steep learning curve and may be a process of ‘trial and error’ that comes with experience. Formulaic planning can assist those who are gaining experience.

We present our technique, which we find reliably reproduces a symmetrical, aesthetic breast, discuss described literature and upcoming trends in this field.

Surgical technique:
We obtain basic landmark measurements i.e. suprasternal notch, midline and inframammary fold of the breast, with the patient erect

The measurements taken on the remaining breast include the arc length height of the breast mound (ALH), which is determined by the cumulative measurement from the point of breast take off to nipple-areolar complex (NAC) and the distance from the NAC to the new IMF, over the breast meridien. In addition to this, we measure the arc length width (ALW) of the breast mound is the cumulative measurement from anterior axillary fold to the medial footplate, at the point of maximum projection.

On the mastectomy side, we measure the distance from the breast take off to the mastectomy scar, and from the mastectomy scar to the new IMF. In planning flap dimensions on the abdomen, we measure the distance between the breast take-off to mastectomy scar and subtract this from the ALH. This length correlates to the flap height (FH) on the abdomen.

Conclusion:
Few mathematical techniques are described in literature in re-shaping the DIEP/TRAM breast mound to achieve breast symmetry. Emerging novel techniques involving pre-operative templating of the free flap from computed topography angiograms around preferred perforators. Opportunistic information regarding the sufficiency of flap volume may be garnered from the computed tomography angiograms performed during perforator assessment.

We describe our model which we feel reliably reproduces symmetry and an aesthetically pleasing breast mound in the realms of breast cancer reconstruction.
Introduction:
Training in burns surgery is integral to the plastic surgery curriculum in the United Kingdom, with the competencies set at performing 60 burns excisions and 18 burns resuscitations in order to achieve the Certificate of Completion of Training. However, with improved community and commercial fire safety regulations, there has been a perceived general decline in major burns. Consequently, there has been growing concerns from the community of plastic surgery trainers and trainees with regards to the achievement of burns competencies. We conducted a national survey amongst plastic surgery registrars to assess their experience with burns training and explored opinions towards simulation training.

Method:
An anonymous, online survey was sent to all plastic surgery registrars across England, Scotland and Wales in April 2016, via the Regional Surgical Trials Network representatives. Registrars were asked about their exposure to burns training, that is the length of time spent on a burns placement during the six-year training period and the number of burns excision surgeries and burns resuscitations performed either supervised or unsupervised, as indicated by their surgical logbooks. A free text box was included to garner current attitudes on achieving competencies and viewpoints on simulation training.

Results:
123 of 285 plastic surgery registrars replied, generating a 43% response rate. All training regions were represented.
63% of trainees spend 6 months or less on a burns placement during training.
There was a median of 14.5 burns resuscitations and a median group of 36-40 burns excisions amongst the respondents who had completed their burns placement.
Subgroup analysis of the senior training grades (ST6-8) demonstrated that 47% of trainees had achieved a minimum of 18 resuscitations and 36% achieved a minimum of 60 burns excisions.
23% felt that the current indicative numbers for burns resuscitations were achievable.
22% felt that the current indicative numbers for burns excisions were achievable.
42% of respondents felt that simulation training would be a useful adjunct to burns training.

Conclusion:
Epidemiological studies clearly demonstrate a declining trend in paediatric and adult burns requiring hospital admissions, both in Europe and other developed countries, over the last 30 years.
We demonstrate that the current environment harbours practical limitations to achieving burns surgical competencies. To safeguard training in this sub-speciality, novel training methods such as burns simulation has been proposed to be a high-fidelity tool, with the potential to serve as a powerful adjunct to the national burns curriculum and surgical education.
Mortality In Danish Burn Victims - A 6-Year Study
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Introduction:
Burn injuries remain a serious cause of morbidity and mortality worldwide and updated data regarding trauma mechanism, injury and outcome is key to improve future care.

Methods:
A retrospective study was performed based on data from the Danish burn database, which includes patients treated at Copenhagen University Hospital - Rigshospitalet. We included 1295 patients admitted from May 2010 to May 2016, providing 6 consecutive years.

Results:
Overall mortality was 8.1% (N=105). For non-survivors, the mean age was 67 years (16) and 62.9% of deceased patients was male. Mean burned surface area was 40.3% (28.0) and the major injury mechanism was fire (87.6%). Inhalation injury was more frequent in non-survivors (41.9% vs. 2.8% for survivors (P <0.001)) and the mean revised Baux score was higher (114.9 [25.9] vs. 44.9 [35.2] (P <0.001)). A palliative care group, defined as patients receiving no curative care, consisted of 51 patients (48.6%). Compared to deceased patients who received active care, the mean burned surface area was higher (60.0% vs. 21.6% (P <0.001)), inhalation injury more frequent (51.0% vs. 33.3% (P <0.001)) and revised Baux score higher (130.1 vs. 100.5 (P<0.001)). Overall mortality for patients who received active care was 4.3%.

Discussion:
The overall mortality in Danish burn victims is high for a developed country, however the unit admits a high number of patients who are eligible only for palliative care. Evaluation of palliative vs. active care is concurrent to that reported in other northern European countries and our results suggest that burn size and inhalation injury is more likely to influence the clinicians’ decision towards palliative care than age and co-morbidities.
Scalp Soft Tissue Expansion Combined With Follicular Unit Extraction For Postburn Cicatricial Alopecia

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Purpose:
This article aimed to evaluate the efficacy of a composite reconstructive surgery combining scalp soft tissue expansion with follicular unit extraction (FUE) in the treatment of post-burn cicatricial alopecia.

Methods:
From June 2011 to July 2016, 48 patients (32 males and 16 females, mean age 23 years, including 3 pediatric patients) with postburn cicatricial alopecia who were treated by scalp alopecia reconstruction were enrolled. The procedure was divided into three stages. Stage I involves the insertion of the expander into the scalp and its expansion to at least 2 fold of the original scarred area. In stage II, the original scarred tissues were excised and local flaps transfer repair (LFTR) was conducted to cover the defect. In stage III, FUE was applied to cover the unmulched scars, hairline or the residual defect.

Results:
A total of 38 patients participated in the stage III of the scalp alopecia reconstruction. During the follow-up of 2-5 years, the outcomes were described as excellent in 23 patients (60.5%) and good in 14 patients (36.8%), whereas one patient (2.6%) was lost to followed-up. Three patients (6.25%) developed complications in scalp soft tissues expansion, including 1 case of infection and 2 cases of wound dehiscence.

Conclusion: The combination of scalp soft tissue expansion and FUE was a powerful and effective approach for post-burn cicatricial alopecia.
The Impact Of Closure Of A Major Regional Burns Service In The UK
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St. Andrew's Centre for Plastic surgery and Burns is one of the world's renowned specialist burns centres, providing a regional burns service to a population of 9.8 million people in the UK. Over the past 5 years it has had 403 patients admitted to the Burns ITU providing cutting edge specialist burns care.

Unfortunately, a new patient admission had the bacterial pathogen Acinetobacter baumannii detected, forcing the closure of the whole burns Intensive Therapy Unit (ITU). This was due to the extreme multi-drug resistance this pathogen has and the risk it posed to immunocompromised and unwell patients. The World health organisation has identified anti-microbial resistance as one of the three most important problems facing human health, it is therefore a real problem that should be taken seriously.

From the start of January 2018 until the 5th March 2018 the Burns ITU was closed to any referrals of major burns. This often involved patients being sent further to receive the specialist burns care they required. We discuss the impact of this closure on the care patients received by doing a retrospective review of all the referrals made to our unit during this time, where these patients were sent instead and whether any delay had any subsequent impact on their clinical outcome.
Impact Of Severe Burns On Cardiac Function
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"It is reported that significant burn injury can impact on cardiac function for up to as much as 3 years" this is due to the "the mediated release of catecholamines following a burn causing cardiac stress". We do not know the full extent to how a severe burn affects cardiac function. St. Andrew's Centre for Plastic Surgery and Burns is a world renowned centre for specialist plastic and burns surgery, with an Intensive Therapy Unit (ITU) dedicated to major burns patients who are managed according to the gold standard. With many of the variables well controlled, we were able to collect data on the effect a severe burn has on cardiac function.

Aim:
To measure the impact of severe burns on cardiac function using Echocardiography (Echo). Echo being a good way to assess cardiac function as it looks at the structure of the heart for any abnormality, but it also assesses how the heart functions (contractility), this is a good way to appropriately assess if cardiac function declines following a severe burn.

Method:
A retrospective Review of all intensive care adult burns patients over a 5 year period who had an echo (in the year before or pre-operatively during their ITU admission) for their burn.

Results:
In 5 years (between March 2013 and January 2018) we had 361 patients with a burn injury admitted to the Burns ITU, of which 48 patients (13%) had an Echo during their stay following the burn.

We reviewed all these echos which confirmed varying degrees of cardiovascular impairment. Which in some cases was long-lasting.

Echo provides a non-invasive and very patient-acceptable test to efficiently assess cardiac function. It also provoked us to commence a prospective review of all patients with a severe burn going to theatre, following them up with a further echo on discharge. Echo provides a good tool for non-invasive assessment of post-burn myocardial function.
Collagen Based Acellular Dermal Skin Substitutes In The Management Of Burn Injuries
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Collagen based biomaterials are widely used as dermal skin substitutes for burns. However, clinicians are often unfamiliar with the fundamental biomaterial composition and manufacture of commonly used human skin equivalents. As a result, it can be difficult to choose the most appropriate product for a specific patient or clinical scenario. Therefore, this review aims to provide a translational perspective on collagen based acellular dermal skin substitutes in the management of acute and chronic burn injuries.

First, we outline how the natural synthesis and self-assembly of collagen in native skin contributes to its unique structural and functional characteristics. We then provide a clinically relevant framework for approaching commercially available dermal skin substitutes by differentiating between acellular dermal matrix products and bioengineered skin substitutes. Using this revised classification, clinicians will be able to appreciate how different manufacturing techniques contribute to observed clinical outcomes. Our proposed taxonomy should allow surgeons to choose the optimal ‘off-the-shelf’ product on a tailored, case-by-case basis.
Epidemiologic And Socioeconomic Characteristics Of Patients Admitted To The Burns Intensive Care Unit Of Nicosia General Hospital
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Burn injury is a common and potentially catastrophic cause of morbidity and mortality. It often exerts major influence on a patient’s life on a functional, emotional and financial level. Burns are estimated to cause approximately 180,000 deaths annually worldwide. The obvious need for the prevention and the improvement in burn injuries treatment, emphasizes the importance of burn epidemiology. The collection of our study data is based on 200 patients admitted to the Burns Intensive Care Unit of Nicosia General Hospital during a period of 65 months (January 2013-May 2018). We analyze the characteristics of the patients regarding age, gender, type of injury, place of injury, part of body injured, concomitant injuries, need for intubation, as well as social and financial status. At the same time we investigate how these characteristics compare to the epidemiologic data of burn patients in international literature. Consequently, the high risk groups and the most frequent conditions of burn injuries in our country become apparent, as well as the need for the establishment of a national burn database, measurements which will optimize burn care.
Serum Albumin And ABSI As Predictors Of Mortality And Hospital Stay In Burned Patients Admitted To A Third World Country Hospital.

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Objective:
To evaluate whether serum albumin and Advanced Burn Severity Index can be used to predict hospital stay and risk of mortality in adult burn patients admitted in a third world country Hospital. Methods: retro-prospective study from 2015 to 2016 in the burn unit at Luis Vernaza Hospital from Guayaquil - Ecuador. Demographic data, details of injury, serum albumin within 72 hours of admission and clinical outcomes were recorded. Exclusion criteria were applied. ABSI was calculated for each patient. Hospital stay >3 weeks was defined as prolonged stay. The data were analyzed with Chi square test.

Results:
65% presented hypoalbuminemia (<3.5 g / dl); 53% had prolonged hospital stay. According to ABSI: the most frequent mortality risk (2%) was observed in 42% of the sample; observed mortality rate was 6% (7/109). Patients with >80% risk of mortality had hypoalbuminemia and the majority died (p <0.000).

Conclusion:
In this study only ABSI is a good predictor of mortality in burned patients at the Luis Vernaza Hospital p<0,000. No statistically significant association was found between hypoalbuminemia and prolonged hospital stay and mortality in burned patients. However, associations with other laboratory variables were sought in the present study. It was determined that there is a statistical association between anemia, measured by hemoglobin less than 10 g / dl and prolonged hospital stay (p 0.02), but not with anemia measured with hematocrit, using cut-off values <35% (p 0.06). Both parameters were evaluated against mortality, and none of them demonstrated a significant association. By virtue of these results, the hemoglobin cut-off point was sought for which a ROC curve was developed, according to what was previously described in the methodology. However, with an area under the curve <0.5, it is not possible to use coordinates obtained to predict the prolonged hospital stay.

Recommendation:
Search for other variables that allow the development of economic predictive schemes in burned patients of the third world countries, allowing physicians to guide patients and family members about the possible evolution of the condition.
An Objective Approach For The Assessment Of The Post-Operative Appearance Of Full-Thickness Skin Grafts In The Head And Face In The Elderly: Case Presentations And Literature Review.
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Objectives:
Presentation of the surgical outcomes of our case series of elderly patients with multiple comorbidities (nephropathy, diabetes mellitus, hypoalbuminemia) and skin lesions in the head-face and upper limb. These patients underwent reconstruction with full-thickness skin grafts (FTSGs) taken from the supraclavicular fossa and the anterior thigh, respectively.

Methods:
A retrospective study between the years of 2015 and 2018 was conducted. A statistical analysis was conducted. The patients were categorised according to demographics (race, age, gender, Fitzpatrick’s skin type, smoking, hypertension), type of skin lesion (actinic or seborrheic keratosis, basal or squamous cell carcinoma, melanoma, etc), location of the lesion, macroscopic features (asymmetry, borders, colour, diametre), medical conditions, functional and esthetic outcomes. Each graft was evaluated on multiple criteria that were collectively used to rate its ability to blend into the recipient site. The clinical and photographic assessment of these outcomes were based on the following criteria: erythema, colour match, texture match, telangiectasia (% surface area), inappropriate hair (% surface area), edge contour, reduction of graft size (% surface area), induration and recurrence. The outcomes were deemed excellent, good, fair and poor.

Results:
Most of our cases had excellent to good outcomes. Only one FTSG partially failed and in another skin graft, there was a recurrence of cancer.

Outcomes:
In our study, the use of FTSGs in the reconstruction of skin defects in the head, face and upper limb was an excellent method of choice. The procedures were conducted under local anesthetic in elderly patients with decreased mobility. The use of specific standardized criteria to assess the post-operative appearance of the FTSGs facilitates better communication amongst surgeons to improve the targeted outcomes. The supraclavicular fossa provides a reliable donor site for the use of FTSGs in the reconstruction of defects in the head and face area of elderly patients. We concluded that if any area of the donor skin has actinic keratosis, seborrheic dermatitis or scarring from previous surgery, another site is chosen. Color mismatch (hyper- or hypopigmentation) is a major influence on the clinical outcome score because it clearly distinguishes grafts from the surrounding skin. The post-operative graft reduction entirely from wound contraction may result in less noticeable grafts and a better cosmetic outcome. Grafts taken from an area with terminal hairs should be avoided to prevent subsequent problems with undesired hair growth. Finally, perioperative smoking cessation policy must be warranted to avoid the risk of flap and graft failure.
Repair Of Involutional Entropion With Adaptation Of Various Surgical Techniques

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Introduction:
Entropion is the inward turn of the eyelid margin. Based on its aetiology it can be classified into the following categories: congenital, spastic, cicatricial and involutional. Involutional entropion is the most common cause and it occurs more frequently in the lower eyelid. The pathophysiology is multifactorial, which justifies the great number of surgical procedures for its correction and the high rate of recurrence when all factors are not considered.

Material and methods:
We present a case of a female patient, 84 years of age, with chronic ocular discomfort and conjunctival hyperaemia of the right eye. Physical examination showed an inward rotation of the lower eyelid towards the ocular surface and horizontal laxity of the canthal tendons. It was corrected with: lateral canthoplasty, palpebral dissection with preservation of a sling of orbicularis oculi muscle and release of the septum and of the lower eyelid retractor. The lower eyelid retractor was then suspended to the upper portion of the septum and orbicularis oculi, which was partially electrocauterized.

Results:
After surgery, an outward rotation of the free border of the lower eyelid was observed, without hypercorrection. At 6 months, there was no signs or symptoms of recurrence. The aesthetic result is satisfactory.

Conclusions:
This clinical case illustrates the importance of a surgical intervention directed to the anatomical alterations that originate the entropion, namely: horizontal lid laxity, lower lid retractor weakness, upward movement of pre-septal orbicularis oculi muscle and protrusion of the intra-orbital fat. In this case, with the adaptation of multiples surgical techniques it was possible to correct the main anatomical alterations of the disease. A lesser complete approach could increase the chance of recurrence of the disease.
Oroantral Fistula In Maxillary And Jaw Osteonecrosis By Bisphosphonates: Case Report And Review Of The Literature
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Oroantral fistula is a pathological communication between the oral cavity and the maxillary sinus. There are several causes, being the maxillary and jaw osteonecrosis by intravenous bisphosphonates an important cause which was reported by the first time in 2003. The bisphosphonates have been used in many cases, with good results in treatment of several cancers and in bone metastases, specially in breast cancer, where the survival rate has increased in the recent years.

The authors report a representative case of a 58-year-old female with previous history of breast cancer and bone metastases. She had been treated with chemotherapy and intravenous bisphosphonates and had developed maxillary and jaw osteonecrosis. After that, she underwent surgery with extraction of 1st molar and acquired an oroantral fistula.

The present case reminds us of an important risk factor for oroantral fistula in patients treated with intravenous bisphosphonates. Thus, due to the increasing survival rate in breast cancer patients, the oroantral fistula prevalence is going to increase exponentially.
Use Of A Loop Diathermy For Surgical Shave Excision Of Rhinophyma
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Introduction:
Rhinophyma is a rare, benign and unsightly disease of the skin of the nose that was first described by Ferdinando Hebra Von as the third stage of rosacea. The first surgical procedure for rhinophyma was performed by Sennert in 1629. We hereby present a surgical technique for the treatment of rhinophyma using loop electrodes.

Case report:
A 74-year old gentleman with a 21 year history of extreme rhinophyma and obliteration of the entire left nostril was referred to our clinic for consideration of surgery. He had suffered from repeated attacks of sinusitis, nasal drip, obstruction and headaches secondary to obstruction of the nostril, requiring antibiotics over a prolonged period of years, and had recently developed ulceration over the surface of the nostril. The patient was on amlodipine, clopidogrel, tamsulosin and finasteride. He had recently commenced gabapentin for rhinophyma-related pain.

Under general anaesthesia, the nose was infiltrated with lignocaine and adrenaline, and a colposcopic loop electrode (Meditech single-use loop electrode) used to shave excess tissue in smooth planes while providing simultaneous haemostasis. The wound was dressed with an alginate dressing and allowed to heal by secondary intention. Six weeks post-operatively, the wound was healing well with only small areas of overgranulation which were treated with silver nitrate and a 3-week course of topical fucidic acid-betamethasone cream.

Histology confirmed presence of rhinophyma as well as areas of actinic keratosis.

Discussion:
Various techniques for the surgical management of rhinophyma have been described and can be broadly divided into sharp dissection, electrocautery, ablative lasers, coblation, cryosurgery, ultrasonic scalpels, hydrodissection, and combination therapies. Wound coverage following tissue dissection can be achieved in various ways, including simple dressings, fibrin glue and skin grafts.

Electrocautery is useful for debulking and controlling bleeding, but there is a risk of scarring and the contouring of tissues is less precise and manageable compared with the scalpel. Rhinophyma treatment with electrocautery has been reported to lead to scar formation, but this has been found to be related to the depth of tissue removed rather than the removal method.

Our technique using electrocautery loops leads to a more controlled and precise dissection compared to conventional electrocautery. This allows keeping the dissection more superficial, thereby leading to less scarring. We have so far used this technique in 19 patients with good results.

Conclusion:
Our described technique utilises easily available surgical equipment to allow controlled excision of rhinophyma with good long-term outcomes.
Mcgregor's Forehead Flap For Facial Reconstruction After Partial Rinectomy And Maxillectomy With Orbital Exenteration: A Case Report

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Introduction:
Malignant tumors of the skin are very common in face area, specially basal cell carcinoma¹. Oncological resection of these tumors can create major defects that represents a challenge for reconstruction preserving both cosmetic appearance and function of the face, especially if these tumors are located in the orbit². The aim of this study is to describe the use of Mcgregor’s forehead flap³ for reconstruction of a major facial defect after a partial rinectomy and maxillectomy with orbital exenteration for recurrent basal cell carcinoma.

Patient And Methods:
The study included one case of partial rinectomy and maxillectomy with orbital exenteration for a recurrent basal cell carcinoma of medial canthus of the right eye that was reconstructed using a forehead flap based on the frontal branch of the right superficial temporal artery³. The donor area was closed using a partial skin graft. The patient was a 62 years old man, who did not received previous radiation of the face, but was already submitted to a resection of the primary tumor 52 months previously to this surgery, followed by a left-side paramedian forehead flap reconstruction.

Results:
The patient had a satisfactory postoperative evolution with hospital discharge within 24 hours, the surgical margins were free, there was no dehiscence and occurred full skin graft integration with total flap viability. After surgical recovery, the patient started the rehabilitation process and prosthesis confection with the anaplastology department. The prothesis included face skin with rhinostomy obliteration but did not include the eye due to the redundancy of the flap. The patient declares satisfaction with the result but complains about the hairy flap.

Conclusion:
Our case demonstrates that the use of the Mcgregor's forehead flap is an effective and safe reconstructive method, which is feasible in situations of orbit exenteration that creates large defects in the face. This flap uses adjacent similar skin, that presents a good cosmetic and functional effect and it also creates a good outline that favors the posterior adaption of an ocular prosthesis.

Bibliography:
Sebaceous Cyst Scalp
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The cylindroma is an uncommon benign neoplasm, of cutaneous attachments, which is frequently manifested as a single, small, pinkish-reddish, usually painless, of sporadic occurrence, located in 90% of the cases on the scalp, face or neck. Cases with multiple lesions are hereditary, with autosomal dominant transmission of incomplete penetrance, and are translated by smooth nodules with rounded contours and varying sizes, located on the scalp and occasionally on the face, more rarely on the trunk and extremities; when practically the whole scalp is affected, it is called "turban tumor". The diagnosis is given through the histopathology so that differentiation of the lesion occurs, with other scalp tumors and with similar characteristics.

Case Report:
J.S.A., a 35-year-old female, currently pregnant (6 months gestation), searched for the surgical service with two tumors located on the scalp, with a Leukemia past, which bone marrow transplantation was foreseen, it did not occur due to an unexpected pregnancy.

Physical Inspection:
Tumors (2) with cylindroma characteristics, of approximately 5cm in diameter, smooth, firm consistency, pink color, located in the right frontal and parietal region on the scalp. Ultrasonography of the cysts was inconclusive.

Conclusion:
The patient was referred by the surgery department of the Gaffré and Guinle hospital to remove the cysts surgically so that they were referred to the histopathology to confirm their etiological origin, in which they are expected to confirm the clinical suspicion of cylindromas.
Distal Perforator-Only Retrograde Flow ALT Flap For Closure Of ALT Donor Site
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Introduction:
The Anterolateral Thigh Flap (ALT) is considered a workhorse flap due to its versatility, offering more sophisticated types of reconstruction with minimal morbidity, compared with many other donor sites. However, direct closure of the donor site is not usually possible for larger flaps, particularly those wider than 10 cm and skin grafting is required with suboptimal long-term aesthetic outcomes. We describe a technique where a distal perforator-only retrograde flow secondary ALT flap was used to facilitate successful direct closure of a large free ALT donor site to avoid otherwise inevitable skin grafting.

Case Report:
A 67-year-old female patient underwent a free chimeric Vastus Lateralis-ALT flap to reconstruct a large defect to her left lower leg after excision of an aggressive recurrent myxofibrosarcoma. At the time of the large free ALT flap harvest, with 15 cm wide skin island required, we identified an additional distal ALT perforator, which was not included in our free ALT flap design. Instead, we decided to use this distal perforator as a source of blood supply for an advancement distal perforator-only pedicled ALT flap based on retrograde flow to allow direct closure of the large and wide free ALT donor site. The flap was advanced into the central aspect of the donor region, facilitating direct primary closure, thus obviating the need for skin grafting.

Results:
Patient achieved full recovery with no donor site complications and very good aesthetic outcome, far superior to a skin graft’s one.

Conclusion:
Our technique allows direct flap closure of large ALT donor site defects, avoiding the use of a skin graft and reducing the post-operative donor site complications and morbidity. We strongly recommend this technique whenever a suitable perforator is available.
The Concept Of Free Fillet Flaps: Two Case-Reports Of Reconstruction After Hemipelvectomy

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Background:
Reconstruction of major complex defects e.g. after trauma, tumor resections or pressure ulcers can be obtained by a fillet flap according to the "spare-part" concept. The spare-part concept involves the use of tissue from amputated or otherwise non-salvageable tissue. The concept was described in 1956 by Georgiade et al. using soft parts from the thigh for reconstruction of a pressure ulcer.

Material:
Retrospective description of two cases where reconstruction of major defects were obtained by free fillet flaps.

Results:
Two cases of hemipelvectomy were performed due to sarcoma in the proximal femur extending to the pelvis. The first case was a 67-year-old woman with undifferentiated pleomorphic sarcoma, Trojani grade 3, in the left side of the pelvis and left proximal femur. The second case was a 76-year-old man with recurrence of dedifferentiated chondrosarcoma in the right side of the pelvis and proximal femur.
Both patients went through resection of the affected side of the pelvis and amputation of the affected leg. Reconstructions were obtained by harvesting the tissue from the amputated leg using a fillet-technique, based on the popliteal vessels. The harvested tissue was used for reconstruction as free fillet flaps. Postoperatively both flaps healed with no complications.

Discussion:
The presented cases demonstrates the use of the "spare-parts" concept and the application of the free fillet flap for reconstruction after hemipelvectomy.
The use of fillet flaps has several advantages, the most important one is the avoidance of donor site morbidity, by using tissue that would otherwise be wasted. Furthermore, it is a one-stage procedure, providing immediate reconstruction covering the defect.
Studies report a low complication rate. Major complications such as flap loss, flap revision and severe infection are 7.5%.
The use of fillet flaps (the spare-part concept), should be considered when planning reconstruction of difficult and complex cases.
Replantation Of The Hallux, Second And Third Toes: A Rare Case Report
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In the literature, there are only a few reports concerning hallux and toes replantation. Although several authors have reported no significant disability when the hallux is transferred for thumb reconstruction, the great toe seems to be important to stabilize the medial section of the foot. Indeed, hallux is important on the last stages of the gait, because a significant amount of the loading on the forefoot is carried by this toe.

Despite the absence of clear indications for great toe replantation, this procedure should be attempted in all cases of traumatic amputations in children and in adults with incomplete amputations, mainly when the injury is proximal to the interphalangeal joint. Complete amputation of the hallux with injuries of the lateral toes seems to be a poor prognostic factor for the replanted great toe.

The authors report the case of a 49-year-old male victim of an accident with a saw with partial amputation of the right hallux, second and third toes at the level of the metatarsophalangeal joint. Microsurgical revascularization was performed for all the toes, as well as extensor tendons repair and bone fixation with kirschner wires. All toes survived completely, and the patient was discharged from the hospital 7 days after surgery. Three months after surgery, the patient is satisfied with the aesthetic result, and is under a rehabilitation program.

Only a few authors have reported great toe replantation or revascularization. Indeed, the technically demanding procedure, the duration of the operation and the potential complications are important drawbacks. Moreover, the loss of the great toe seems to be well tolerated by the majority of the patients. However, the replantation should be offered in children and in adults with incomplete amputations, because in these cases, the functional benefits of the procedure outweigh its challenges.
The Versatility Of Free Tissue Transfer With Vein Graft In Reconstruction Of Chronic Lower Leg Wound

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Purpose:
Numerous reconstructive options have been suggested and introduced for chronic wounds occurring at lower extremities such as skin graft, distant pedicled flap as well as simple closure and local flaps. In recent decades, with development of micro/supermicrosurgery, free tissue transfer technique for chronic wound of lower extremities which was unavailable in the past began to provide sufficient soft tissue coverage and functionally satisfactory results. We authors present the utilization of vein graft for versatile application of free flap coverage in these situations.

Methods:
Patients with chronic wound below knee lasted more than 4 weeks were included in the study. The inclusion criteria were as follow. Patients who received reconstruction surgery using free tissue transfer (anterolateral thigh, thoracodorsal a. perforator flap), and additional reconstruction surgery was done to whom the length of donor flap's pedicle was short resulting in the use of greater saphenous vein graft technique. Also, patients who underwent surgery by using greater saphenous vein or trauma history were excluded from study. Greater saphenous vein was harvested from ipsilateral or contralateral lower part of medial thigh, and harvested vein was grafted between recipient vessel and donor vessel with variant length from 7 to 21cm case by case. Another operation procedures were performed as conventional techniques of free flap.

Results:
All 10 patients underwent greater saphenous vein graft for chronic wound of lower extremity. All the flap survived, and partial flap loss in distal portion occurred in 2 cases. No case with immediate / delayed vessel thrombosis and vein harvesting site were fully healed without wound problem such as hypertrophic scar in all patients.

Conclusion:
Reconstructive surgery using free tissue transfer in case of chronic lower extremity wounds should be done very carefully, because of not only the factors like 1. Dense nature of surround tissue / 2. Mobility of the lower leg for the appropriate function / 3. Vessel wall degeneration due to prolonged injury time exist, but also there is high risk of possibility of vessel-related acute flap problem from traction force when pedicle length setting is insufficient for recipient site. So authors suggest the utilizing of long vein transfer, and it will result in higher versatility of flap and lower flap complication rate for reconstruction of chronic lower extremity wounds.
BCC, SCC And MM In Same Patient: Three Types Of Skin Cancer After Irradiation For Tinea Capitis

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The treatment of tinea capitis using X-rays was introduced at the beginning of the twentieth century and it was the main treatment for severe tinea capitis cases until the introduction of the first effective antifungal agent – griseofulvin –, in 1959. Previously to this date, the best approach to treat tinea capitis was X-ray scalp epilation combined with topical antimycotic ointments. It has been estimated that approximately 200.000 children worldwide received radiotherapy treatment for tinea capitis.

Occurrence of skin lesions following radiotherapy is well-known. Several retrospective studies reported a high risk of development of skull skin lesions, specifically BCC, SCC and melanocytic lesions like malignant melanoma, in patients treated with this type of therapy for tinea capitis. Currently, a small group of patients who were exposed to radiation to treat this disease presents with radio-induced scalp malignancies.

Some studies determined an incidence of 10-28% of the nonmelanoma skin cancers in patients treated with radiotherapy in childhood. Although radio-induced scalp cancer usually arises on established radiodermatitis, it may be observed even in the normal looking scalp; thus, a high index of suspicion is warranted. Even low doses of radiotherapy are associated with BCC, which is the most frequent of all malignant skin tumours.

The authors report a rare case of a 73-year-old man with several basocellular, squamous carcinomas and also malignant melanoma occurring after 65 years of the last session of irradiation.

This case demonstrates the high prevalence of basocellular and squamous cell carcinoma between the irradiated population, as well as the risk of development of melanocytic lesions like malignant melanoma.

The appearance of skin cancers in irradiated people establishes that radiotherapy is an important cause of these three types of tumours.
Predictive Model For Patients Undergoing Sentinel Lymph Node Biopsy For Cutaneous Malignant Melanoma.
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Purpose:
Sentinel Lymph Node Biopsy (SLNB) is a standard, diagnostic and staging procedure in management of primary Malignant Melanoma (MM). Our study investigated the significance of mitotic count and several other clinicopathologic characteristics for predicting regional nodal disease. Subsequently, complex statistical analysis was used to create a predictive model, which can be used for patient counselling.

Materials and Methods:
A retrospective review of 273 consecutive patients undergoing SLNB for primary MM was performed in a single center. Statistical analyses were undertaken to identify significant correlation between result of the SLNB with the gender, Breslow Thickness (BT), Mitotic Count (MC) and Ulceration (U).

Results:
A total of 273 patients underwent SLNB, of which 173 had a negative result whereas 100 had a positive SLNB. Majority of cases (70%) were intermediate thickness MM, while thin and thick MM were 22% and 8% respectively. In the univariate analyses BT (p= 0.000015), MC (p= 0.00028) and U (p= 0.0084) were all found to be significantly associated with SLNB positivity. In contrast, the gender was found not to be statistically significant (p= 0.69). In the multivariate analyses only the BT (OR= 1.43, p= 0.0015) was found associated with a positive SLNB result. MC (OR= 1.03, p= 0.29) and U (OR= 1.17, p= 0.63) were no longer found to affect the SLNB outcome. However, due to their significance in the univariate case, MC and U were still included in our predictive model.

Conclusion:
Our model can predict the likelihood of SLNB-outcome based on Mitotic Count, Breslow Thickness and Ulceration and can be used as important tool when counselling patients with advanced melanoma.
Bowen's Disease To The Palm: A Cautionary Tale
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Purpose:
A case of Bowen's disease (BD) to the palm is reported in order to:
• Highlight the rarity of BD to the palm
• Provide a literature overview regarding its treatment
• Emphasize the importance of early hand and plastic surgery team involvement

Case:
A 65-year-old right-handed labourer presented with a 10-year history of a large, hyperkeratotic erythematous plaque to his right palm and first web space. History was negative for arsenic exposure and HPV infection. Skin biopsies revealed BD that was initially managed conservatively by the dermatologists with topical retinoid and later 5-Fluorouracil cream. Residual disease prompted a radiotherapy course, following which the patient developed a painful debilitating radio-necrotic wound. This progressed to a first web space contracture and exposure of the right index finger metacarpophalangeal joint and right flexor pollicis longus (FPL) tendon. Subsequent surgical debridement created a large complex palmar defect. The non-functional right index finger was filleted to reconstruct the palmar defect whereas a skin graft and a distal extensor apparatus flap based on the first dorsal metacarpal artery were recruited to cover the exposed FPL tendon and right thumb proximal phalanx. Two months later, the wound healed well and the patient returned to his daily activities.

Literature:
BD is synonymous with in-situ squamous cell carcinoma (SCC) for lesions sited on non-genital areas. It principally occurs on sun-exposed sites. Palmar skin involvement is rarely seen as shown in a series of 1001 BD cases, where the anatomical location of the palm was not found once. Only few cases are published in the literature about BD occurring in the palm, most frequently associated with arsenic exposure and HPV infection.

A Cochrane review and guidelines from British Association of Dermatologists analysed the evidence level for treatments commonly used for BD. The quality of evidence is strongest for photodynamic therapy, topical therapies and cryotherapy. There is lack of quality data and comparative studies for radiotherapy or surgical excision of BD. Given the hand’s complex abilities and the potentially devastating functional sequelae in case of treatment failure, BD to the palm can represent a therapeutic challenge.

Conclusion:
This is the first case reporting complex reconstruction for this extremely rare pathology. There are limited data comparing conservative versus surgical management of BD. However, our experience through this case demonstrates that, in patients with BD affecting the palm, early surgical excision and involvement of hand and plastic surgeons in a multidisciplinary setting is crucial.
Patient- And Observer-Reported Long-Term Scar Quality Of Wide Local Excision Scars In Melanoma Patients
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Background:
Wide local excision of the primary tumour is the mainstay of treatment for melanoma patients. The aim of this study was to assess the patient- and observer-reported long-term scar quality after surgery using the Patient and Observer Scar Assessment Scale (POSAS) in melanoma patients, to assess the reliability and validity of POSAS, and to identify factors influencing the scar assessment.

Materials and Methods:
This cross-sectional clinical study included 320 melanoma patients with primary tumours on the trunk and limbs. Data regarding patient, treatment and scar characteristics and functional outcomes were analysed. Internal consistency, inter-rater reliability, and convergent validity were examined. Factors influencing the patient- and observer-reported scar quality was tested in regression analyses.

Results:
Results of the POSAS showed an overall good scar quality. The internal consistency of POSAS was good and acceptable, and the convergent validity was strong. The inter-rater reliability was only moderate. The patient was influenced by the POSAS sub-items: colour, irregularity, thickness and pain. The observer was influenced by the POSAS sub-items: vascularity, surface area, thickness, relief and pliability. Both patient- and observer-reported scar qualities were influenced by age, location, type of superficial suture, keloids and widened scars. Moreover, the patient was influenced by the scar tightness and the observer was influenced by postoperative complications, hypertrophic scars, suture marks and dog ears.

Conclusion:
POSAS is a reliable and valid scar assessment tool. The factors influencing patient- and observer-reported scar quality differed. Knowledge of this may improve treatment and hence patient-reported scar quality.
Skin Cancer Surgical Practice: A National Survey
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Aims:
Skin cancer surgery forms a large proportion of plastic surgery procedures in the UK. However, surgical practices relating to aspects of skin cancer procedures vary amongst plastic surgery units. We conducted a national survey to capture these practices to establish trends relating to specific steps during the surgical excision and reconstruction.

Method:
A survey was sent to all plastic surgery units throughout the UK. The survey analyzed the practice of: Change of blades, gloves or instruments when operating on multiple skin lesions or prior to reconstruction; washout performed after excision; site of skin grafts harvested from corresponding lesion and presence of local recurrence observed in the donor site.

Results:
31 surveys were completed. When excising multiple lesions 87.10% of surgeons changed blades and 19.35% changed gloves & instruments. Prior to reconstruction 93.55% changed blades and 32.26% changed gloves & instruments.

Majority (67.74%) performed a washout after excision. 45.16% of surgeons harvest skin grafts from the ipsilateral limb corresponding to the skin lesion. 6.45% observed local recurrences in the donor site.

Conclusions:
This survey highlights existing differences in Skin cancer surgical practice amongst UK plastic surgeons. There remains a risk of local recurrence in ipsilateral limb donor sites. Further studies are required to establish best practice.
Concurrent Venous Thromboembolism And Lower Limb Soft Tissue Sarcoma – Problem And Algorithm Of Management

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Introduction:
Patients with soft tissue sarcomas (STS) are at significant risk of developing venous thromboembolism (VTE). The condition remains underdiagnosed and inadequately treated. As a result, the morbidity and mortality due to VTE are high (5.2 to 14.8%). Besides, the management of VTE in STS is complicated due to the effects of malignancy and its treatment.

Aims:
Analyse the clinical outcomes in the lower limb STS, particularly in those patients who developed VTE. We also suggest a management algorithm for concurrent VTE in STS and guideline for extended thromboprophylaxis for all patients with lower limb STS.

Methods:
We retrospectively analysed 146 patients who underwent surgical resection for lower limb STS from January 2011 and May 2017. Preoperative comorbidities were assessed using ASA grading and the Charlson Comorbidity Index (CCI), and baseline function, mobility and smoking status were noted. The endpoints included post-operative mortality rates (average and 1-year) and post-diagnosis and post-operative VTE rates. Time-to-VTE rates were calculated, and affected vessels noted, together with laterality of any VTE in comparison to a tumour (where DVTs occurred).

Results:
The mean age at resection was 62 years (17-96) with a 61% to 39% male to female ratio. Four patients (2.74%) developed VTE, two post-diagnosis, and two postoperatively. All VTE occurred in the femoral veins of the diseased leg, where sarcoma was located in the medial or posterior-medial thigh. Interestingly, one VTE was diagnosed incidentally through imaging for pre-operative planning. The post-surgery mortality rate is occurred in 30% (average 1.91 years).

Conclusions:
VTE mainly as DVT occurred concurrently in a small proportion of lower limb STS. Patients with medial and posterior-medial tumours demonstrated the most significant risk and not directly linked to surgical resection. We conclude that patients with lower limb soft tissue sarcoma presenting with clinically suspicious deep venous thrombosis should undergo routine imaging early in their diagnosis, to ensure VTE has not occurred as part of their disease process.
Case Report: Myxoid Dermatofibrosarcoma Protuberans In The Skin Of The Inguinal Crease.
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Dermatofibrosarcoma protuberans (DFSP) is a rare soft tumor which originally represents a cutaneous sarcoma. It grows slowly and presents usually as nodular superficial lesion on the trunk or the extremities. Although these tumors are locally aggressive with high rate of recurrence following surgery; the prognosis is considered excellent when it is effectively treated.

We describe such a case in a 72-year-old woman, who at the age of 70 presented with myxoid DFSP above her right inguinal crease, measured 13 by 6 cm. Originally she was treated for Staph infection boils, until she visited our plastic outpatient consultant clinics. We performed local excision with generous tissue margin on this patient to achieve disease free resection and she remains disease free for the 1 year follow-up.

We report a rare case of myxoid DFSP and discuss in detail the diagnostic and therapeutic implications of this pathology.
Fujimori’s Gate Flap In Reconstruction Of Extensive Lower Lip Defects: Two Cases Report

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Introduction:

Reconstruction of extensive lower lip defects may be challenging1 for the plastic surgeon and face flaps2 are the best path to restore function and aesthetics.

Objective:

This study aims to present the outcome of the Fujimori’s “gate flap”3 used in two cases for reconstruction of extensive defects due to cancer ablation in lower lip.

Patients And Methods:

The authors applied the Fujimori’s “gate flap” reconstructive technique in two patients with extensive lower lip defect following excision of squamous cell carcinoma. In one case, bilateral inferiorly based nasolabial flaps were used for reconstruction of the lower lip. In the other case, an unilateral nasolabial flap using mucosa meshing4 technique was performed. Both patients used enteral nutrition by nasoenteral tube during postoperative period.

Results:

Patients presented bad local hygiene and punctual dehiscence of the surgical site. The postoperative aesthetic and functional results were satisfactory, with adequate mouth opening and oral competence. Patients declared satisfaction.

Conclusion:

Lips have important aesthetic and functional roles, presenting a delicate sensory apparatus, maintaining oral competence and they also determine facial expressions. The more tissue lost from the lower lip, the more difficult the reconstruction is from a functional and cosmetic point of view, becoming a challenge for the surgeon. Amongst other techniques, Fujimori’s “gate flap” stand out for it’s versatility and efficiency for the reconstruction of the soft tissue loss after tumor resection surgery in lower lip.

Bibliography:

Benefits Of NORSE Within Burns, Hands And Plastics At Queen Elizabeth Hospital Birmingham, UK.
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Introduction:
The National Health Service is endlessly searching for means to improve its infrastructure to cope with relentlessly increasing demands on its service by effective deployment of limited resources without compromising patient care. The incorporation of information technology has already played an enormous part in managing this capacity and will continue to do so for the foreseeable future; an example of this includes Network of On-call Referral System Electronically (NORSE).

Method:
Since 2015 the Hand surgery department at Queen Elizabeth Hospital, Birmingham, has been championing NORSE as a way of accepting referrals from peripheral hospitals nationwide. Once significant benefits of NORSE were noted, both our Burn and Plastic surgery departments immediately implemented this system.

Results:
Approximately 10 NORSE referrals are received by the burn, hands and plastics teams daily. NORSE allows accurate and concise information to be relayed between clinicians effectively with traceable record of documented communications - increasing compliance with GMC’s good medical practice. Our Hands department has benefitted from integration of xrays within the referral, the plastics team are now able to make clinical judgements via photos attached to the referral, and our burns centre can have information mapped out prior to the patient arriving.

Conclusion:
Overall, NORSE has enabled us to prepare for patients before they arrive to hospital, allowing prediction of service demand and directing clinical resources accordingly. We are continuing to integrate NORSE within our, already established, referral system to enhance the services we provide to these complex patients and improve patient outcome.
Autologous Fat Grafting in the Treatment of Acute or Chronic Cutaneous Wounds
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Background:
Autologous fat grafting has gained considerable attention in the last few years as a potential therapeutic agent in regenerative medicine. Lipoaspirate obtained using standard liposuction can be refined into a stromal vascular fraction (SVF), providing a source of adipose derived stem cells (ADSCs) with vast immunomodulatory and angiogenic capability. Unfortunately, with a wide range of studies and heterogeneity between protocols, results can be difficult to interpret. As such a systematic review was undertaken to ascertain the exact nature of autologous fat grafting, determining its efficacy and safety in wound healing as well as evaluating the quality of evidence within the literature.

Methods:
A PRISMA compliant protocol was developed searching databases including Ovid MEDLINE, Embase and the Cochrane Library for articles up until December 2017. All human studies in which wounds were treated with either lipotransfer, cell-assisted lipotransfer, SVF products or isolated ADSCs. Data was then extracted against a set criteria outlined by all authors before evaluation of each included study using the GRADE approach.

Results:
A total of 4978 results were obtained from the search strategy, of these 11 observational case series were included for analysis, with no randomised control trials being identified. Patient demographics, wound aetiology and the type of intervention varied considerably between studies. Nonetheless, autologous fat grafting was associated with improved wound healing in all studies accompanied with low complication rates. Unfortunately, in addition to heterogeneity of study design, grading the quality of evidence was consistently deemed to be low or very low.

Conclusions:
While being an emerging therapeutic option for challenging wounds, comparison with other management strategies is necessary in order to fully evaluated autologous fat grafting as a therapeutic option. There is insufficient evidence to demonstrate if any one individual type of fat grafting; be it lipotransfer, cell-assisted lipotransfer, or SVF- or ADSC-only; are superior. There is a need for well-designed, blinded prospective randomised control trials with sufficient methodological detail to allow comparison and objective outcome measure reporting.
The Clenched Fist Syndrome: A Clinical Rarity Of Special Interest For Hand Surgeons.
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The Clenched Fist Syndrome (CFS) is a type of a psychiatric disorder, in which the patients present with flexion finger contractures. Although no organic etiology can be identified, the syndrome in most cases presents with pain and paradoxical stiffness. We, herein, report the case of a 52-year old woman with a 6-month history of progressive hand flexion contracture. On examination, all digits, including the thumb, were held in a tight flexion at the metacarpal and interphalangeal joints. Passive digital extension was painless in all fingers. Physical examination did not reveal any joint tenderness, joint or tendon sheath swelling. X ray was performed and did not show any abnormalities. CFS is believed to be a conversion disorder, i.e. unconsciously motivated and produced, whereas others consider it a factitious disorder, i.e. unconsciously motivated but consciously produced. Surgical treatment is not indicated, as it can worsen the symptoms. The related literature is discussed.
Acute Calcium Deposition In The Hand: When To Operate  
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Acute calcium deposition in the hand and wrist is a form of calcium hydroxyapatites deposition disease. This entity is common at the periarticular tissue of the shoulder joint. On the other hand, it is not frequently included in the differential diagnosis of patients presenting with inflammatory signs of the hand and wrist. Although rare in the hand, it could be more common than previously expected. The aetiology of this disease is still controversial. A minority of patients report a previous traumatic episode. In the face of this clinical presentation the diagnosis should be suspected based on the laboratory and radiographic findings. The efficacy of conservative treatment is widely reported, however, the clinical scenario and the long-time interval required for resolution of symptoms very often leads to invasive diagnostic procedures, hospitalization and an unnecessary surgery. Here the authors present a clinical case of acute calcific periarthritis of the hand and review the clinical indications for an invasive procedure.
Peripheral Facial Nerve Paralysis: Case Presentations, Reconstructive Options In Facial And Smile Reanimation And Literature Overview.

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Aims:
Description of the anatomical course of the facial nerve, the causes of peripheral paralysis (emphasis on traumatic/iatrogenic postoperative, neoplastic, idiopathic Bell paralysis), symptomatology, case presentations and methods of restoring the function of the nerve, presentation of a relevant bibliographic review.

Methods:
We present patients with facial paralysis due to Bell’s palsy, parotidectomy, Ramsey-Hunt syndrome, facial trauma and temporal bone fracture. International literature review related to the topic through the Medline, PubMed, Cochrane Library, Google Scholar and electronic databases with the following keywords: facial nerve palsy/paralysis, House-Brackmann scale, tarsorrhaphy, Möbius syndrome, gracilis flap, temporalis myoplasty

Outcomes:
Classification of the degree of the facial nerve paralysis according to House-Brackmann facial nerve grading system. Follow-up of patients’ post-operative course (photographic evidence of pre-, intra- and post-operative appearance) and check for neurological or functional deficits. Continued physiotherapy to obtain full range of movement of the facial muscles.

Conclusions:
Facial nerve dysfunction causes significant disability, affecting the speech, vision, feeding, and social behavior of the patient. The diagnosis of idiopathic paralysis includes the Taverner’s criteria, while the clinical evaluation is assessed by topographic, electrophysiological and imaging methods. The conservative treatment includes the administration of the appropriate medication: antimicrobial, prednisolone, Botulinum toxin type A (Botox), or artificial tears. The surgical treatment includes a variety of static and dynamic techniques. Amongst others, the following techniques are the mainstream: neurorrhaphy with or greater auricular nerve graft or sural nerve graft, nerve and muscle transpositions (hypoglossal-facial jump graft, digastic muscle, accessory nerve, masseteric motor nerve [V3]), tarsorrhaphy, implantation of gold weight in the upper eyelid, facial reanimation reconstruction with a gracilis functioning muscle transfer, anastomosis of cross facial nerve graft to obturator nerve, cervicofacial rhytidectomy. A newer surgical technique is the lengthening temporalis myoplasty for single-stage smile reconstruction in children with facial paralysis. The aim of a dynamic operation is to restore the eye and mouth muscle complex. In any case, the patient must be trained to use the nerve to move the facial muscles.
The Scrotal Reconstruction With Singapore Flap After Fournier’s Gangrene
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Fournier’s gangrene is a necrotizing fasciitis caused by bacterial infection and results in loss of skin and subcutaneous tissue in the perineal area. It is more common in patients with diabetes mellitus, heart failure, impaired immunity, alcoholism, inflammatory anorectal diseases, urinary incontinence, and overall debilitating diseases. It requires early diagnosis and aggressive debridement to remove all dead tissues.

Achieving an aesthetic appearance of the scrotum after extensive Fournier’s gangrene is a reconstructive challenge. The exposure of the testis can cause severe functional, aesthetic and psychological harm to the patient. Testicular coverage is often prioritized over scrotal cosmesis due to the comorbidities typically seen in this patient population. Coverage of testis varies from closure of the defect primarily, burying inside the thigh, using the remnants of the scrotum for tissue expansion and coverage by flaps. In this manuscript, scrotal advancement flaps and Singapore flap were used for coverage of the testis bilaterally.

A 65-year-old, class III heart failure (NYHA), male presented in septic shock secondary to Fournier’s gangrene, that’s involving the entire penis, scrotum, cord structures and perineum. He was taken emergently to the operating room for debridement.

During the ensuing 4 weeks, the patient was treated with multiple debridements, wound care and intravenous antibiotics. Dartos fascia and portions of the tunica albuginea were debrided. Skin graft and Singapore flap were used to achieve a sensate and aesthetically acceptable result.

We concluded Singapore flap is efficient and safe for the reconstruction of large defect of the scrotum.
Gluteal Fasciocutaneous Rotation Flap And Transperineal Composite Mesh For Perineal Hernia Repair After Abdominoperineal Resection.
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Perineal hernia is an uncommon complication following abdominoperineal rectum resection. Several surgical procedures have been proposed for perineal hernia repair, including perineal, laparoscopic and abdominal approaches. Repair techniques can be classified into primary suture techniques, mesh placements and repairs with autogenous tissue. We report a 68-year-old man with a perineal hernia, who underwent a pelvic floor reconstruction with a transperineal composite mesh and a gluteal fasciocutaneous rotation flap. To our knowledge this is the first study reporting this combination for perineal hernia repair. We conclude that a combined approach with transperineal mesh reconstruction and gluteal fasciocutaneous flap could be an alternative safe and reliable choice in perineal hernia repair after abdominoperineal resection.
The Extended Perineal Turn Over Perforator (PTO) Flap: A Novel Technique For Combined Perineal And Vaginal Reconstruction After Extralevator Abdominoperineal Excision (ELAPE)

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Aim:
Posterior vaginal wall (PVW) defects have been traditionally reconstructed with rectus abdominis musculocutaneous flaps or with bilateral Singapore fasciocutaneous flaps. Recent evidence support better oncological outcomes by an extralevator abdominoperineal approach, which requires the plastic surgeon to consider alternative options for combined perineal and vaginal reconstruction. The ideal technique reduces donor site morbidity, restores vaginal function and eliminates dead space whilst keeping perineal wound morbidity rates low. This has not been yet addressed in the literature.

The Perineal Turn Over perforator (PTO) flap is the workhorse flap in our institution for perineal reconstruction after extralevator abdominoperineal excision (ELAPE). We describe a case where an extended version of the PTO flap was used to reconstruct a combined perineal and PVW defect, achieving the above principles.

Case:
A 60-year-old patient was diagnosed with anal squamous cell carcinoma invading the PVW. An ELAPE was performed with en-bloc resection of the PVW creating a complex composite perineal and vaginal defect.

Technique:
A perforator of the internal pudendal artery is identified with a handheld Doppler at the inferolateral part of the skin defect. A semilunar area of skin incorporating the perforator at its base is marked along one side of the perineal defect and incised down to the supra-fascial layer. The inferior 5 cm of the skin flap is folded inwards and is sutured to the remaining anterior vagina wall in order to create an adequate vagina. The superior 15 cm of the skin flap is de-epithelised and turned over inwards towards the perineal defect with the perforator as pivot point. The free border of the inverted thick de-epithelised gluteal dermis is then secured to the cut edges of the pelvic muscles whereas the gluteal subcutaneous tissue is used to fill the pelvic dead space. The overlying gluteal skin on both buttocks is advanced by undermining supra-fascially over the gluteal muscles and closed in layers.

Results:
Surgical time for the combined reconstruction was 69 minutes. There was no flap loss, no wound complications, no perineal pain or perineal hernia during a 28-month follow-up. The patient resumed sexual activity 6 months post-operatively.

Conclusion:
The extended version of the PTO flap allows functional restoration of the vagina. It involves minimal dissection, can be performed in prone position and recreates the natal cleft. Its dermal component replaces the excised muscular pelvic floor preventing from perineal hernias, whereas its subcutaneous component obliterates dead space with no donor site morbidity.
The Efficacy Of Preoperative Vascular Mapping By MDCTA In Selecting Flap In Abdominal Flap Breast Reconstruction
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Current methods of breast reconstruction using abdominal tissue include the transverse abdominal myocutaneous (TRAM) flap, deep inferior epigastric arterial perforator (DIEP) flap, superficial inferior epigastric arterial (SIEA) flap, and some other composite flaps. Because of the variant vascular anatomy in abdominal region, it is hard to choose an appropriate flap for a specific patient without accurate preoperative vascular mapping. This study was drawn to address the efficacy of preoperative vascular mapping by multidetector-row computed tomographic angiography (MDCTA) in selecting flap in abdominal flap breast reconstruction. A total of 34 breast reconstructions using abdominal flap from December 2006 to July 2009 were included. In all the patients included, MDCTA was performed preoperatively. Three indexes were obtained including choice of flaps, operation time, and flap complication rate. Then, these data were compared with the former data stored in the databank of our hospital from January 2004 to December 2006, before MDCTA was introduced in our center. Among the 34 patients, the flap selection was: SIEA flaps 11.8%, DIEP flaps 61.8%, TRAM flaps 11.8%, and bilateral flaps 14.7%. The correlate indexes from the data bank were as follows: SIEA flap 0; DIEP flaps 51.7%; TRAM flaps 32.8%; bilateral flaps 15.5%. p < 0.05 occurred between the comparison of SIEA, DIEP, and TRAM flap choice in the two groups. The operation time in the study group was as follows: SIEA flap (4.02 ± 0.46) hours, DIEP flap (6.23 ± 1.42) hours, TRAM flap (4.72 ± 1.53) hours, Bilateral flap (7.86 ± 1.16) hours; while the former correlate data were: DIEP (9.67 ± 1.74) hours, TRAM flap (6.64 ± 1.83) hours, bilateral flap (11.83 ± 1.35) (all the three comparison p < 0.05). The total flap complication rate was about 5.9% in the test group; while in the databank, it was 12.1% (p < 0.05). With the accurate mapping of vascular territory in abdomen by MDCTA, we could easily select a suitable abdominal flap for breast reconstruction, and we can also simplify the procedure to save operation time and make the process more safely.
Deep Inferior Epigastric Perforator Flap For Breast Reconstruction: Still Possible In Super-Obese Patients.
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The deep inferior epigastric perforator (DIEP) flap is widely recognized as a safe and reliable flap for use as a first-choice option in autologous tissue breast reconstruction. Obese patients represent a challenging group for autologous breast reconstruction, as they are at increased risk of developing major and minor complications in comparison to normal-weight patients. We report a 59-year-old super-obese woman, with a BMI of 50.8kg/m², who presented to our department with right breast skin necrosis after implant reconstruction following mastectomy for right breast cancer. After implant removal and local treatment with both surgical debridement and negative pressure wound therapy, the patient successfully underwent a DIEP flap breast reconstruction. We conclude that super-obesity should not be a contraindication to DIEP flap breast reconstruction.
Can Externalization Of Microvascular Anastomotic Coupler Resolve Or Prevent Venous Congestion Of Flaps?

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Introduction:
Venous insufficiency is a frequent complication of free and propeller flaps. A venous supercharging of these flaps is not always possible. We present the use of microvascular anastomotic coupler for venous externalization to prevent and manage venous congestion.

Material and Methods:
We describe a simple technique employed in our department involving application of microvascular venous coupler on a superficial vein and its externalization through the skin in order to facilitate venous drainage and reduce the likelihood of venous congestion. A microvascular coupler is applied to the dissected superficial vein to allow venous outflow and externalized through the skin. In our cases with regards to the propeller flaps there was no possibility of supercharging them. Intraoperative congestion was noticed and therefore it was decided to externalize a dissected superficial vein allowing venous outflow through the skin by applying a microvascular vein coupler. In the matter of free flap tissue transfer we decided to externalize a superficial vein in order to prevent postoperative venous congestion.

Results:
The patency of the externalized veins has been preserved with continuous irrigation periodically allowing sufficient venous outflow. All the flaps survived and good cosmetic result has been achieved.

Conclusion:
In our clinical practice this technique has role in free flap breast reconstruction, as well as a useful adjunct to intraoperative congestion of propeller flaps. We believe that its role is mostly prophylactic but sometimes it can be a reliable salvage option for intraoperative venous congestion.
Microsurgical Tissue Transfer: The Most Functional Reconstruction Of Diabetic Foot Ulcer
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**Aim:**
It is well known that many diabetic foot ulcer (DFU) patients suffer from peripheral arterial occlusive disease (PAOD). This leads microsurgeons to hesitate to perform free flap surgery in case of DFU. However, the increasing number of successful reconstruction cases of DFU patients using microsurgical tissue transfer, or free flap has been reported recently. Moreover, those studies show the survival rates of transferred flaps are not disappointing, even comparing to the result of other foot reconstruction surgery in non-diabetic patients. In this study, we would like to report our results of DFU reconstruction using microsurgical free tissue transfer, and discuss the role and worth of free flaps in DFU reconstruction.

**Method:**
From September 2010 to October 2017, 198 DFU patients, who underwent foot reconstruction surgeries using free tissue transfer, were retrospectively reviewed. To assess the status of vascular insufficiency, computed tomographic angiography (CTA) scan was applied for all the patients. If any occlusion sites or suspicious areas were observed in CTA, the patients were further evaluated with conventional angiography. If the patients were indicated to extended angioplasty in the radiologic studies, preoperative percutaneous transluminal angioplasty (PTA) was performed for re-vascularization of the lower limbs.

**Results:**
A total number of free flap cases was 203. In all cases, the bone, fascia or tendon level invasions were observed in the DFU wound lesions. Preoperative PTA procedures were performed in 141 patients (71%). 165 flaps out of 203 transferred free flaps showed complete flap survival (81%) and 16 flaps were partially necrotized. Overall flap survival rate was 89%. Among 22 cases of total flap necrosis, 15 flaps were replaced with skin graft, 7 flaps were simply healed with dressing treatments, and 4 flaps were treated with below knee amputation.

**Discussion/Conclusion:**
Our results showed that the efficacy of the microsurgical tissue transfer should not underestimated in DFU reconstruction. Even in the case of complete flap necrosis, there was another chance of reconstruction such as skin grafts. Furthermore, DFU wounds usually occur on the weight bearing side of the foot. With thick and full layers of skin and subcutaneous tissue, free flaps can endure this weight bearing forces. Providing lifelong protection in the ulcer lesion, the microsurgical tissue transfer is meaningful as a functional reconstruction management. According to our results and experiences, we would like to highly recommend free flaps for DFU reconstruction.
Limb Salvage Using Combined Chimeric Linking Perforator Free Flaps
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Background:
Microsurgical free tissue transfer is the most effective method for extensive reconstruction of lower limb defects. The feasibility of free tissue transfer has evolved in parallel with the chimeric flap concept. The purpose of this report is to describe our experience of using microsurgically-fabricated combined chimeric linking perforator flaps for one-stage reconstruction of extensive lower limb defects.

Methods:
Between April 2008 and November 2016, 16 cases of extensive lower defects were reconstructed using combined chimeric linking flaps. Of the patients, 10 were male, and the mean ages was 45.3 years (range, 20-76 years). The flaps used were thoracodorsal artery perforator (TDAP) flaps together with deep inferior epigastric artery perforator (DIEP) flaps or anterolateral thigh (ALT) flaps.

Results:
There were no total flap failures; however three ALT flaps were partially lost and required skin grafts. One wound disruption healed conservatively. Donor site healing was achieved primarily without any dehiscence. The follow-up period was 15.4 month (range, 8-24 months).

Conclusion:
The use of combined chimeric linking perforator flaps for lower limb defects is uncommon; however, in cases of extensive limb defects these flaps can salvage limbs by means of one-stage operations.
Reconstructive Techniques For Resolving Vessel Discrepancies In Microvascular Anastomosis: A Systematic Review.

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Introduction & Aims:
Despite the tremendous progress of microvascular techniques over the past decade, a vessel-size discrepancy between the donor and the recipient vessels represents a true clinical problem. Extending the dissection of pedicle to a more distal level allows the preparation of a smaller diameter main feeding vessel. Thus, this approach aims to equalise the vessel diameter of the donor and recipient site. Another way is to mechanically expand the lumen of the narrow vessel with dilator forceps. However, these strategies to tackle major vessel discrepancy are not always possible. If the technique of microvascular anastomosis is not immaculate, there is increased risk of free flap failure. We aim to provide a thorough overview of current methods to address the issues of vessel-size discrepancy.

Methods:
We performed a systematic review of the international literature using the PRISMA approach (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). Approximately, twenty relevant papers were found, and their content was analyzed. A summary table is provided at the end of this paper (see attachment).

Results:
Eight main methods are being discussed. Namely: V-plasty, fish-mouth incision, autologous interpositional vein graft, sleeve anastomosis, unequal bite suturing, distal artery wedge excision, titanium hemostatic clip, interrupted micro-mattress sutures. The basic description, technical considerations, indications, clinical applications, advantages and disadvantages of the main techniques are described. There are several other methods to address vessel discrepancy: The Y-shaped anastomosis, end-to-side anastomosis, which have a higher patency rate, compared to end-to-end anastomosis. A combination of a sleeve anastomotic technique and plication of the excess vessel wall and CO2 laser have also been used in an attempt to address the vessel discrepancy. The CO2 laser seals the spaces between distant sutures, thus contributing to minimized operative time, normal wound healing, less reactive tissue inflammation and adequate patency rates. Moreover, fibrin glue and anastomotic coupling devices are used in microvascular anastomosis.

Conclusions:
Different techniques should be used based on the clinical situation, anatomical variants, available equipment and the surgeon’s training and experience. Literature supports that factors such as suture materials, needle size and contour, and the expertise and technique of the surgeon are important in determining a successful outcome.
Botox Injections For Cold Intolerance Following Finger Revascularisation.
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Cold insensitivity following successful digital replants after traumatic amputations contributes to the long-term morbidity associated with these injuries. Most of these injuries are sustained by individuals of working age group which hampers their reintegration into the workforce. The use of Botulinum toxin type A (Botox) has been reported to provide symptomatic relief of both chronically ischaemic digits such as Raynaud’s phenomenon, and preventing acute-on-chronic ischaemia. This prompted the authors to borrow a leaf out of this book to help our patients with cold insensitivity. A case series of two patients is described; who presented many years following their injuries having failed other management options. We administered Botox injections at the proximal stump of the arterial anastomosis of replanted digits. The patients responded well to the treatment, allowing them to return to work more comfortably. We propose adding this tool in the armamentarium of the professionals involved in managing such cases.
New Approach To Prevent Early Recurrence In Dupuytren’s Disease: Percutaneous Needle Fasciotomy (PNF) In Combination With Platelet Rich Plasma (PRP)

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Introduction:
Flexion contractures caused by Dupuytren’s disease can be treated with the minimal invasive extensive percutaneous needle aponeurotomy. The downside of this treatment modality is the high incidence of early recurrence. Platelets contain cytokines like TGF-β and PDGF, growth factors which play an important role in mediating fibroblasts. The literature shows high levels of TGF-ß diminish contractile forces of fibroblasts. Administration of PRP (which contains high levels of cytokines) to Dupuytren’s tissue could elicit an inhibiting effect on fibroblasts activity. Following percutaneous needle aponeurotomy autologous PRP was injected into the remaining Dupuytren’s tissue. This pilot study was to evaluate safety of injecting PRP following percutaneous needle aponeurotomy and look at early contractures outcomes.

Methods:
We retrospectively analyzed prospective data from a consecutive series of patients undergoing this treatment approach in one institution by two plastic surgeons. Patients with MCP and/or PIP contractures as a consequence of primary or recurrent disease were included. Primary outcome was the degree of residual contracture (passive extension deficit). Secondary outcomes were Michigan Hand Outcomes Questionnaire (MHQ) scores and adverse events.

Results:
Between May 2013 and October 2014, a total of 62 patients (63 hands) underwent treatment (66±9 years, 81% men) for an average 1.6 affected rays. Forty-two percent had non-primary disease. Baseline contracture for the 40 affected MP joints was 35°±19°, which improved by 76% at week-1 (p < 0.001) and was maintained at 1-year follow-up (6°±7°). The 44 affected PIP joints with a mean contracture of 38°±19° improved by 54%, which worsened by 4° to a mean 22°±15° at 1-year. Fourth-three percent of patients experienced an adverse event at week-1; this percentage was 12% at 1-year. At 3-months, only the aesthetics MHQ subscore had improved significantly (p = 0.020). At 1-year, however, the overall MHQ score (p = 0.005) and subscores of overall hand function (p = 0.018), satisfaction (p = 0.001) were significantly improved.

Conclusion:
Treatment of Dupuytren's contracture with extensive percutaneous needle release and injection with PRP appeared both efficacious and safe in this pilot-study. Further evaluation of longterm results of this new multi-modality approach is warranted.
Parent-Reported Outcome Measures (PROMS) For Surgery In Congenital Trigger Thumbs: Development And Psychometric Analysis Of A New Questionnaire

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Introduction And Aims:
Parent-Reported Outcome Measures (PROMs) continue to be lacking in the field of congenital hand surgery. The heterogeneity of conditions often precludes the use of a single, validated PROMs that addressed the various concerns of parents. The aim of this project was to develop and validate a condition-specific PROMs for the surgical treatment of congenital trigger thumb (CTT) using national guidelines, based on appearance, social and function following CTT release.

Methods:
All patients were operated by a single surgeon in a single centre. PROMs validation follows a strict 3-phase process as outlined by Scientific Advisory Committee of the Medical Outcome Trust. Phase 1: Item generation from literature review, interviews, expert's opinion and qualitative parent interviews; Phase 2: Item reduction; Phase 3: Psychometric analysis. For Phase 3, the previously validated Paediatric Orthopaedic Outcome (PODCI) score was used along with the new PROMs. The parents were asked to fill in pre-operative (P1) and PODCI questionnaires once the child was listed for surgery; and post-operative (P2) and PODCI questionnaires at 3 months post-operatively. SPSS was used to analyse acceptability, reliability, validity and responsiveness of the new questionnaire.

Results:
In phase 1, 40 and 44 items were initially generated in P1 and P2 respectively. In phase 2, questionnaires were sent to 10 parents with response rate of 80%. There was statistically significant improvement in all three areas post-operatively (p<0.05) with greatest improvement in appearance (66.5%), followed by social (19.5%) and function (14.6%). Items which had low correlation with the overall scale were removed, forming the new P1 and P2. In phase 3, 25 parents completed the pre-operative questionnaire and 22 parents completed the post-operative questionnaire. Mean age was 9 months (range 19-97 months). Improvement was reported in 3 areas post-operatively, with appearance showing the greatest improvement of 74.06% (p<0.05), followed by Function 3.4% (p<0.05) and Social 1.73% (p>0.05). The Cronbach's alpha coefficient for: a) post-operative total summary score was 0.88; b) Appearance 0.959; Social -0.645; Function 0.753; c) Appearance, Social, Function scales vs PODCI global functioning: 0.38, 0.16, 0.653.

Conclusion:
This is the first PROM developed for CTT that underwent vigorous psychometric analyses. Preliminary results have shown the importance of appearance to all parents when assessing their child's hand. High Cronbach's alpha coefficient reflects the reliability of the questionnaire as a whole. Low Cronbach's alpha coefficient in social could be due to the small social circle among toddlers and young children. This CTT PROMs may provide important data for the formation of national guideline.
An Effective Single Injection Metacarpal Block Of The Second Ray; An Easy And Patient-Friendly Technique
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Aims:
We present our technique of blocking the 2nd ray via a single prick of the dorso-radial aspect of the first web space. We assess the efficacy, efficiency and patients’ feedback for such technique.

Technique:
We use a 30G hypodermic needle to inject 10 ml of Local anesthetic (LA). Firstly, we advance the needle volarly and block the digital nerves. We then withdraw the needle backward but not out and redirect it dorsally to block the dorsal sensory nerves.

Methods:
56 patients were blocked by the author, from August 2014 until March 2017, 79% of whom were males (N=44) and the rest were females. Their ages ranged from 4 to 87 years old (mean 44). Patients rated the pain on a visual analog scale (VAS) 0-10, which was prospectively documented in the last 20 consecutive patients.

Results:
51 patients (91%) required no further anesthesia, while 5 (9%) required a top-up of the ulnar digital nerve block via a dorsal 2nd web space injection. All patients reported negligible needle prick but attributed pain to the infiltration process (pressure). VAS ranged from 2-8 (mean 4.6). Overall our injection compared favorably relative to the initial LA they had elsewhere, according to most of the patients (45/56 i.e. 80%).

Conclusion:
The pliable tissue of the 1st web space allows; negligible prick pain, easier advancement of the hypodermic needle volarly and dorsally with a single needle prick. It provides good proximal 2nd metacarpal block allowing MCPJ washouts, neurovascular bundles repair and flexor tendons repair in the digits and the palm. It can be also utilized in digital infections when 1st web space is not affected.
A Novel Method For Reconstruction Of The Thumb Oblique Pulley Using Existing Pseudotendon
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Introduction:
A pseudotendon is a biologic reconstitution of an unrepaired divided tendon by scar tissue formation which restores continuity of the tendon. The resultant excursion is much less efficient and tendon reconstruction is usually still required.

We present the case of a patient in whom the bridging pseudotendon was used to reconstruct the oblique pulley of the thumb.

Case Report:
A 33 year-old male presented 3 months following injury with inability to flex his left interphalangeal joint (IPJ). Clinically, minimal movement was present and on ultrasound, a high-grade tear of the flexor pollicis longus (FPL) tendon proximal to the IPJ was suggested. Intra-operatively, the FPL was found to be completely divided beneath the oblique pulley with 3cm of bridging pseudotendon. The pseudotendon was divided at the edges from the tendon proper but left attached at its base. The tendon was amenable to delayed primary repair, which was performed using 4-strand core and epitenonous sutures. The oblique pulley had to be divided to allow access. Following tendon repair, the pseudotendon was split in 2 strands longitudinally and used to recreate the pulley around the repaired tendon. The wound was closed and a dorsal blocking thumb spica splint applied.

Post operatively, the patient followed an early active mobilisation regime and at the 6 week follow-up point was found to have full active range of motion at the IPJ with 5/5 MRC power grading.

Discussion:
Injuries to the flexor tendons are commonplace, and even with gold standard treatment, can significantly reduce mobility of the digits. A failure of the pulley system can result in bowstringing and decreased range of digit motion.

Kutsumi et al highlighted the importance of the oblique pulley of the thumb, showing that gliding resistance was increased after trimming and tendon repair, even if the pulley was just trimmed or squared off. The study suggested that the pulley should be left intact where possible.

The literature describes multiple techniques of pulley reconstruction such as free tendon grafts (palmaris longus), slips of extensor retinaculum, PTFE grafts and even other pulleys or sections of the flexor sheath. Also described, are the ‘turtleneck method’, the use of acellular dermal matrices, solvent dehydrated bovine pericardium and fascia lata. A Pubmed search revealed no other reports where an existing psuedotendon was used to reconstruct a pulley.

Conclusion:
Our technique demonstrates how 'spare-part' surgery using an existing pseudotendon can result in excellent outcomes in tendon reconstruction.
Clinical Characteristics, Reconstructive Options And Postoperative Outcomes In Patients With Necrotizing Fasciitis
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Necrotizing fasciitis is a destructive, rapidly progressive infection, which moves along the fascial plane and also leads to secondary destruction of the subcutaneous tissues. Its etiology varies, as it can occur as a complication of many medical conditions or surgical procedures, but also without any prominent recognizing causes. The causative bacteria can also be significantly variant. Patients that are affected are in need of vigorous resuscitation and surgical debridement, which often leads to extensive defects, demanding challenging reconstructive procedures in later stages. The choice for the reconstructive method depends on the body parts that have been affected and on the extension of the destroyed tissue. Regarding the above, we discuss the methods of reconstructive surgery in patients affected by necrotizing fasciitis, who were treated in our Plastic Surgery Department and we investigate the long term results on postoperative complications and quality of life.
Rhinoplasty
Finesse is the correct word used to describe, what is required of the most difficult of all aesthetic surgical procedures. This presentation describes the integral factors necessary to carry out successful aesthetic rhinoplasty, with consistently satisfactory results. Particular emphasis will be placed on the tip aesthetics and how to achieve a well-positioned and aesthetically balanced tip.

Important fact: there are numerous manoeuvres available to attain a particular change. One or two manoeuvres should be perfected and utilised to effect change at various parts of the nose. The trick is to know which manoeuvres to employ, and when. Naso-facial analysis will expedite these decisions. (Functional corrective procedures do not fall within the scope of this presentation.)

General approach to rhinoplasty:

- Thorough patient history and examination outlining the patient’s main concerns
- Accurate standardised photography
- Accurate pre surgical analysis
- Naso-facial analysis
- Intra-nasal aesthetic thirds:
  - Upper third: boney pyramid
  - Mid third: septum/upper lat. cartilages
  - Lower third: lower lat cartilages (LLC)/caudal septum/columella/alar base
- Surgery:
  - Open tip
  - Septal exposure
  - Radix position
  - Dorsal component reduction
  - Osteotomies
  - Tip work

  Tip work: Columella labial angle: Caudal septal shortening/Col. Strut/Septal extension graft (SEG)/Ant. nasal spine/tip rotation sutures/ hanging or retracted columella

  Projection: Projection control sutures/SEG/ Lat. crural steal/dome resection & grafts/foot processes

  Tip defining points: LLC resection/Dome spanning sutures/Medial crural fixation sutures/Grafts/Lateral crural sutures/Lat.crural positioning

  Alar base surgery: nasal sill/Alar flare

  Alar rim surgery: Alar rim grafts/lateral crural grafts

Conclusion:

A general synopsis of the surgical planning has been presented, as well as a more detailed description of various nasal tip techniques employed to attain a well-balanced and aesthetically acceptable rhinoplasty.
Component Nasal Hump Reduction: A 10-Year Experience

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Background:
Significant number of patients for primary aesthetic rhinoplasty desire hump reduction. In the recent two decades, component hump reduction has been proposed as a more controlled and stepwise approach in the treatment of nasal dorsum protrusion. This method preserves the upper lateral cartilages (ULCs) and facilitates middle vault reconstitution.

Methods:
For a period of 10 years, the author has applied component dorsal reduction in 178 patients either through open and closed approach. Other rhinoplasty techniques have been accordingly performed in favour of the individual patients' needs.

Results:
The vast majority of patients were satisfied with the achieved aesthetic outcome. Dorsal asymmetry and contour irregularities were the most common adverse effects.

Conclusion:
Unlike the composite hump resection, component reduction can be performed with predictable accuracy and safety. The graduated approach of component dorsal hump reduction technique results in an optimal aesthetic correction of the nasal dorsum while minimizing the most common complications of this procedure.
Rhinoplasty: Tips And Salient Points To Achieve An Optimal Outcome
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At the presentation important points how to achieve an optimal aesthetic and functional outcome in Rhinoplasty will be discussed both in primary and secondary Rhinoplasty. Emphasis will be given at the respiratory function of the nose and how the surgeon can avoid potential complications and achieve predictable results. Difficult rhinoplasty cases from 18 years of surgical experience in rhinoplasty will be demonstrated as well.
Scars - Regenerative Medicine
Keloids In Patients With Albinism
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Background:
Keloids are collagenous lesions that extend beyond the original area of injury and is a result of abnormal wound healing. Keloids are limited to humans and although the exact prevalence is unknown, it is reported in 5 - 16% of wounds. Certain races are more susceptible to keloid formation, especially individuals with darker pigmentation, African and Asians. According to literature Caucasians is least effected and no case reports of Albino patients with keloids have been documented

Methods:
A 26-year old patient with albinism presented with a 6-month duration of a firm, hard, non-fluctuant, nodular mass on his right ear after being stabbed with a bottle. The lesion extended beyond the borders of the injury. The lesion was excised under local anaesthetic and the specimen was sent to the pathologist for evaluation and the patient received radiotherapy. The histological specimen was then compared to a black patient that developed a firm, hard, non-fluctuant, nodular mass on the left ear of 6 month duration after ear-piercing. Both histological specimens diagnosis consisted of keloids.

Results:
The histological specimens were compared after evaluation under magnification and the following results was obtained:
(Please see table attached)

Discussion:
There is no significant difference between the two specimens. The patient with albinism's keloid showed a more advanced and mature lesion compared to the other patient. This could be attributed to the mechanism of trauma being more severe, evoking a more pronounced inflammatory response.

Conclusion:
Keloids do exist in Albino patients. The histological report concluded that the collagen fibres were thicker and the epidermis atrophic, suggesting a more aggressive growth in the patient with Albinism. Therefore the histological features shows more advanced and mature features, the pathologist did not attribute the finding as to be significant. It is only a single comparison and needs more investigation.
Growth Factors: Harnessing Healing Power, From Restoration To Rejuvenation
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Since the Nobel Prize-winning discovery of nerve growth factor (NGF) and epidermal growth factor (EGF) in 1986, scientists and physicians alike have sought to understand and apply the physiological benefits of growth factors. In both healing and rejuvenation, tissue remodeling and systemic restoration, strides have been made in this regard. While the activity of growth factors and other elements of the cell secretome in response to acute wound damage are becoming increasingly well known, it remains a novelty to many that similar principles of restoration and remodeling repair can be employed for the sake of cosmeceutical rejuvenation. Within this domain, topical serums containing an intricate balance of growth factors, cytokines and other peptides have proven effective in reversing the signs of extrinsic aging. Those engineered peptides are now patented (U.S. Pat. 8,518,819). This study corroborates the idea that the topical application of growth factors and cytokines are beneficial in reducing the signs of skin aging of the face, including the area around the eyes. Moreover, growth factors have been shown to restore hair growth and slow down the progression of Androgenetic alopecia. Our study established the effectiveness of naturally occurring growth factors for anti-aging, skin rejuvenation, wound healing and for the first time in the treatment of hair loss.
Systematic Review Of The Efficacy Of Combination Fat Grafting And Platelet Rich Plasma For Wound Healing

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Background:

Adipose derived stem cells found in fat grafts may have significant healing properties. When fat is combined with autologous platelet-rich-plasma (PRP) there may be enhanced healing effects due to the pro-angiogenic and anti-inflammatory effects of PRP. This study aimed to evaluate the current evidence on fat grafting in combination with PRP for wound healing to establish the efficacy of this technique.

Methods:

A comprehensive search in the MEDLINE, EMBASE, CENTRAL, Science Citation Index, and Google Scholar databases (to March 2017) was conducted to identify studies on fat grafting and PRP for wound healing. Case series of less than 3 cases and studies only describing harvest technique were excluded.

Results:

The database identified 571 articles, of which three articles which used a combination of fat and PRP for wound healing (one RCT and two case series) were included in this review. A total of 69 wounds in 64 patients were treated with an average wound size of 36.32cm². Of these, 67% of wounds achieved complete healing. When reported, the mean time to healing was 7.5 weeks for those who underwent a single treatment. There were no significant complications in any patients.

Conclusion:

The combination of fat grafting and PRP may achieve adequate wound healing with relatively quick wound healing time compared to standard wound management options. However evidence is extremely limited and further studies are required to evaluate its efficacy for wound healing.
Skin Malignancies and Sarcomas
A Large Single Centre 10 Year Series Of Lymph Node Block Dissection - Third Re-Audit Of Complication And Survival Rates.
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Introduction:
Block dissection is indicated for sentinel lymph node biopsy positive skin cancers to increase regional control and to prevent disease progression as per the British Association of Dermatology Skin Cancer management guidelines. Previous local audit cycles at the University Hospitals of Coventry and Warwickshire (UHCW) UK, showed patient morbidity from axillary, neck, inguinal and ileoinguinal block dissections as 31.6%, 45%, 40.5% and 66.7% respectively. When compared to published data, our complication rates from the second audit were comparable. We present our third audit cycle data.

Aims:
We aim to review complication and survival rates following lymph node block dissection (LNBD) for skin cancer management at UHCW comparing results against current literature as well as present the summary results of the previous 10 years.

Methods:
We observed complication rates following LNBD in Melanoma and Squamous cell carcinoma patients. Our inclusion criteria were adults with histologically proven melanoma or SCCs requiring completion LNBD of the head and neck, inguinal, axilla or ileoinguinal regions between April 2013 and April 2016. We identified patients retrospectively by examining the computerised Skin Specialist Multi-Disciplinary Team database. Primary outcomes were complications post-operatively and secondary outcomes included length of inpatient stay.

Results:
The third audit cycle showed a total of 79 patients that had 81 completion lymph node dissections. This comprised of; 1) 32 axillary block dissections with a complication rate of 59.4%, (high seroma rate of 53.1%) including wound healing and haematoma, 2) 20 head and neck block dissections with a complication rate of 45% (high facial palsy rate) including chyle leak, haematoma, flap necrosis, and seroma, 3) 23 inguinal block dissections with a complication rate of 75% (high seroma rate of 41.7%) including lymphoedema, delayed wound healing and haematoma. As a result of these complications the mean length of inpatient stay increased from 9.6 days to 11.8 days. Compared to published literature and previous audits these rates were higher however overall 5 year survival data was much improved at 57% compared to 35-45%.

Conclusion:
Our 10 year single centre series of lymph node block dissection outcomes is one of the largest audited including a total of 192 consecutive block dissections analysed. Our results highlight the need to consider the morbidity from this therapeutic procedure and anecdotal evidence of the use of sclerotherapy agents including doxycycline and haemostatic agents (fibrillar) seem to reduce seroma rates. We recommend a randomised controlled trial to investigate this further.
The Impact Of Shave Excisions In Primary Cutaneous Melanoma

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Introduction and Aims:
Accurate histological diagnosis of melanoma is crucial for deciding further management and prognosis. Breslow thickness remains the most important factor when predicting clinical outcomes. Various techniques are employed for histologically sampling the initial lesion, including shave biopsies. Although simple to perform, shave biopsies can potentially lead to inaccurate staging and underestimation of the lesions depth. Our aim was to assess the accuracy of shave biopsies as well as the impact on patient outcomes.

Material and Methods:
The medical notes of 100 patients that were referred to our centre with primary cutaneous melanoma were retrospectively reviewed. All those lesions initially diagnosed through shave excision were identified and data, including Breslow thickness and disease spread, extracted.

Key Results:
A total of 17 melanomas were diagnosed through shave excisions. Mean Breslow thickness was 2.74 mm. In 71% of patients the Breslow depth was greater than or equal to that on the subsequent excision, with 41% showing no residual melanoma altogether. 6 patients required T-stage upstaging from the initial histological reports. Locoregional recurrence occurred in 18% of patients, with the majority of these occurring in melanomas with a Breslow thickness >4 mm. Distant metastases were observed in 47% of patients, with 63% of these having an initial reported Breslow depth between 1-4 mm.

Conclusion:
Our findings suggest that melanomas diagnosed through shave excision have the potential to be understaged with subsequent potential consequences for patient management and outcomes.
Prognostic Implications Of Primary Cutaneous Melanoma Of The Upper Extremity

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Introduction:
The role of primary site location in prognosis of malignant melanoma (MM), has been widely debated. The present study aims to define the prognostic influence of primary tumour location in the upper extremity.

Materials and Methods:
A retrospective analysis of 280 patients, who were treated for MM from 2004 to 2017, was conducted. Among them, 35 suffered from primary melanoma of the upper extremity. Demographic data, primary site characteristics, histopathologic features, SLN biopsy and lymphadenectomy results were recorded in patients with MM of the upper limbs and compared to those of other anatomical sites.

Results:
MM of the upper extremity represented 12.6% of our melanoma patients, occupying the least frequent site, following those of the trunk (32.8%), lower limbs (32.1%) and head & neck (22.5%). The upper limb group, consisted of 15 male (42.8%) and 20 female (57.2%) patients, with a mean age of 53.7 years compared to 59.5 years for the total number of MM patients (p<0.001). Arm was the primary site in 16 cases, followed by forearm (14) and hand (2). Mean Breslow thickness was 2.17mm in the upper extremity, significantly thinner than the average 3.23mm of all melanomas (p=0.035). SLN biopsy was positive in 16% of the upper limb cases, almost half of the 30.3% positivity of SLN biopsies in all melanomas (p=0.01). Subsequent lymphadenectomy demonstrated further metastasis in 50% of the upper limb patients, lower than the 56.7% for all melanoma cases.

Conclusions:
MM of the upper extremity was related to thinner melanomas and lower rates of SLN biopsy positivity, results that imply more favorable prognosis. Furthermore, upper limb melanomas concerned younger patients. The ease of self examination, together with the potential of early identification of any lesion in the upper limbs, serve as a possible explanation, concluding that this tumour site is an independent predictor of SLN status and prognosis.
Limb Lymphoedema Following Treatment Of Melanoma
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Aim/background:
A focus of the study Health-related quality of life and surgical morbidity in melanoma patients was to describe melanoma-related limb lymphoedema (LE) and the effect of LE on health-related quality of life (HRQoL) in melanoma patients.

Material and Method:
This cross-sectional study consisted of questionnaires, a clinical examination and DXA scan of the study participants. The inclusion criteria were confirmed primary cutaneous melanoma, age 18-75, no previous or current evidence of metastatic disease, wide local excision (WLE) and unilateral axillary or inguinal sentinel lymph node biopsy (SLNB) and/or lymph node dissection (LND) at least one year prior to the study. Health-related quality of life was evaluated with official cancer generic and symptom specific questionnaires. The clinical diagnosis of LE was based on the history, patients' symptoms and clinical findings. DXA scans of the limbs were performed to describe the volume and tissue composition (fat mass and lean mass).

Results:
Of the 431 patients included (68% of eligible patients), 109 patients (25%) had clinical melanoma-related limb lymphoedema. Lymphoedema was present in 10 patients (5%) after axillary SLNB, in 13 patients (31%) after axillary LND, in 53 patients (35%) after inguinal SLNB, and in 33 patients (83%) after inguinal LND. The only treatment related risk factor statistically significant in univariate and multiple analyses was WLE on the leg in the inguinal SLNB subgroup. The majority of LE was classified as mild with the increase in volume particularly attributed to an increase in fat mass. The negative impact of LE on HRQoL in melanoma patients was statistically and clinically significant in multiple domains including global health status, role, and social functioning, pain, fatigue, financial difficulties and body image.

Conclusion:
The study emphasises the importance of increasing awareness, and improving prevention and treatment of LE in melanoma patients.
Melanoma And Non-Melanoma Incidence Statistics In Cyprus For The Last 10 Years
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Incident of Melanoma and Non Melanoma skin cancer is increasing worldwide. At the time when most cancer incidences are falling, the incidence of Malignant Melanoma is increasing at the rate of 3-7% in many European countries.

All over Europe melanoma is the cancer showing the most rapid increase in incidence including Cyprus. Higher rates are consistently reported on intermittently exposed body sites. Skin melanoma differential from non-melanoma skin cancer with regard to sex-, age-, and anatomic distribution. There is mounting evidence from several studies that the increase in melanoma incidence is a result of intermittent recreational sun exposure. Severe sunburns, in particular, is a strong risk factor. Population-based education of risk groups may lead to earlier diagnosis and thereby reduced mortality.
Evidence For The Role Of Stress And Psychological Factors In Melanoma Relapse
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Introduction:
Cutaneous melanoma is the fifth most common cancer in the UK and has a 41.5% mortality rate associated with tumours ≥1.5mm thick. The most important prognostic factor is Breslow thickness which is associated with factors such as sex, age, body mass index and socio-economic status (SES). Whilst melanoma is more common in those from higher SES, deprivation is associated with thicker tumours and poorer survival. Those in lower SES are known to experience more stress and are more affected by stressful events: this could be linked to poorer outcomes in these groups. We hypothesised that psychosocial stress and health-related personality would be associated with Breslow thickness and survival.

Methods:
A stress related risk factors questionnaire was completed by 2184 patients recruited to the Leeds Melanoma Cohort between 2000 and 2012. Unadjusted linear regression was used to assess predictors of Breslow thickness. 100x natural log was taken so that coefficients were interpreted as a percentage change in Breslow thickness. Analysis adjusting for age, sex, tumour site, body mass index, smoking and Townsend deprivation index was then carried out. Variables of interest that reached 5% significance were modelled together. The same approach was then taken in an analysis of relapse-free survival (median follow-up 5.9 years).

Results:
In this study increasing age, male sex, acral tumour site, increased body mass index and smoking were independently associated with increased Breslow thickness (p<0.05). Increasing age, male sex, tumour thickness and site were also independently predictive of relapse. Townsend index was not related to Breslow thickness but was significantly associated with relapse, HR 1.03 (95% CI 1.00– 1.07 p=0.04) per unit. Having an ‘external’ or ‘powerful others’ health locus of control was significantly predictive for increased Breslow thickness, but this was not apparent following adjustment. However, in survival analysis both ‘external’ and ‘powerful others’ were significantly associated with relapse: adjusted HR 1.39 (95% CI 1.12, 1.70 p=0.002) and HR 1.29 (95% CI 1.04, 1.61 p=0.02) respectively for high versus low.

Conclusion:
Expected characteristics were associated with Breslow thickness and relapse-free survival. Interestingly socio-economic status was associated with survival independently of Breslow thickness. Having ‘external’ or ‘powerful others’ health loci, which indicate that the patient feels out of control of their health outcomes, has not previously been evaluated for melanoma survival in a such a large study. Reasons behind this association need confirmation and further exploration but suggest a role for psychological factors in relapse.
Patient-Reported Outcome Measures (PROMs) After Reconstruction With Full-Thickness Skin Grafts In Non-Melanoma Skin Cancers In The Head And Neck: A Retrospective Audit With Objective Questionnaires.

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Aims:
The primary aim is to present the post-operative results along with the PROMs from a case series of patients with non-melanoma skin cancers (NMSCs) of the head and neck. These patients underwent reconstruction of the defects with full-thickness skin grafts (FTSGs) harvested from the supraclavicular area. Also, to investigate the safety of this procedure in the elderly population when performed under local anesthetic.

Methods:
A retrospective study of the patients treated between 2015 and 2018 was conducted in our Unit. Statistical analysis was performed using the SPSS software. The patients were categorised according to their demographic features, type of the skin lesion (actinic keratosis, basal cell carcinoma BCC, squamous cell carcinoma SCC, other melanocytic naevi), location, macroscopic and microscopic features (asymmetry, border, colour, diameter, atypia), co-morbidities, length of in-hospital stay, complication rates, functional and aesthetic outcomes based on the following patient questionnaires: Skin Cancer Index (SCI) for NMSCs as per the US National Institute of Heath, Rosenberg self-esteem Scale, Dermatology Life Quality Index (DLQI) as per the British Association of Dermatologists, Derriford Appearance Scale DAS24/DAS59, pain scale. A critical analysis of the histological margins and assessment of the completeness of the resection was undertaken.

Results:
Our early results demonstrate that most of the patients were men between the ages of 60 and 75 with BCCs and SCCs. The results of the functional and cosmetic reconstruction were deemed by our case series satisfactory and very good. On follow-up, the patients reported overall contentment with the procedure, the postoperative care, and the surgical outcome. There was only one partial necrosis of the skin graft, which was subsequently managed conservatively.

Conclusions:
In our study, the implementation of FTSGs from the supraclavicular fossa as a donor area for the reconstruction of the skin defects in the head and neck was a safe option. The operation was performed under local anesthetic with minimal patient discomfort. The patients were discharged the day after surgery. The use of PROMs is the current method of critically appraising surgical outcomes in an objective, systematic and scientific manner.
Dermatofibroma Protuberans (DFSP) - Dermatofibroma: A Rare Type Of Skin Tumor

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Our project is concentrated on Dermatofibrosarcoma Protuberans and in generally Dermatofibromas. Our presentation is an epidemiologic study of patients who suffer from either DFSP or dermatofibroma. Our sample size is 126 patients, 6 of whom presented with DFSP, all found and analyzed from the personal patient record of Dr. Mantas, plastic surgeon in Apollonion private hospital, in Nicosia, Cyprus.

DFSP is a very rare type of skin cancer that begins in connective tissue cells in the middle layer of the skin and may at first appear as a bruise or scar. As it grows, lumps of tissue (protuberans) may form near the surface of the skin. This skin cancer often forms on the arms, legs and trunk. It grows slowly and rarely spreads beyond the skin. Dermatofibroma is pleomorphic soft tissue sarcomas presumably derived from histiocytes that are capable of fibroblastic transformation, and nowadays are called pleomorphic soft tissue sarcomas.

The presentation will focus on the common characteristics of the patients such as age, gender, genetic predisposition (chromosomal translocation association). Dermatofibromas and DFSP appear to be associated with multiple systemic diseases (such as Systemic lupus erythematosus, myasthenia gravis, altered immune status) and some genetics basis, so our aim is to investigate if our sample has any of these associations and to what percent.
Reconstruction Of Complex Thoracic Wall Defects Following Excision Of Thoracic Wall Sarcomas
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Introduction:
The aim of this study is to analyze the results of complex thoracic wall reconstruction after excision of thoracic wall sarcomas in a series of 13 patients treated in our clinic during the last eight years.

Material – Method:
Thirteen patients (11 males, 2 females) with a mean age of 58 years, underwent surgical treatment for thoracic wall sarcoma from January 2010 to December 2017. The tumors (6 primary and 7 recurrent) included five chondrosarcomas, four dermatofibrosarcomas protuberans, two undifferentiated pleomorphic sarcomas, one rhabdomyosarcoma and one angiosarcoma. All patients underwent wide tumor excision that resulted in chest wall defects: partial thickness in seven and full thickness defects in six cases. Reconstruction included the use of muscle and myocutaneous flaps such as latissimus dorsi (n=6), pectoralis major (n=1), serratus anterior (n=1), rectus abdominis (n=1), combination of muscle flaps (n=3) and in one case a local skin flap. Duration of hospitalization, post-operative complications, need for further surgical interventions and final outcome were recorded and analyzed.

Results:
Mean hospitalization time was 14,5 days per patient. There was a partial loss of the skin island in two myocutaneous flaps, while one patient developed wound dehiscence that required surgical debridement and secondary reconstruction. In three patients skin grafting over a muscle flap at a second stage was performed. Six patients received adjuvant radiotherapy. After a maximum of 60 months follow-up, no local recurrence was found. Three patients died, two of them after developing distant metastases and the third because of other causes.

Conclusions:
Wide radical excision of chest wall sarcomas remains the primary goal of the surgical management of thoracic wall sarcomas, while the use of loco-regional muscle flaps, namely the latissimus dorsi flap, provides sufficient coverage with high-quality tissues, that can resist the effects of post-surgery radiotherapy.
Improving Time And Financial Efficiency In Facial Skin Lesions Excisions And/Or Reconstruction Utilizing The Nun’s Veil Drape – An Audit Of Two Different Practices

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Aims:
We have been utilizing a simple setup for facial skin procedures in the form of a modified fenestrated drape in a nun’s veil appearance and LOPA (minor procedures) set [Fenestrated drape setup] for 100 consecutive facial skin lesion excision and/or reconstruction. We hereby present and describe that setup. We also present a comparison with the conventional setup for facial skin lesions excision [Conventional setup], highlighting the savings gained from implementing our fenestrated drape setup.

Materials and methods:
Using the code S06.5 for: “EXCISION OF LESION OF SKIN OF HEAD OR NECK NEC”, we estimated the number of such procedures performed in our unit in 2017 [Conventional setup cohort]. We identified the number of patients operated upon by the first author utilizing the fenestrated drape setup [Fenestrated drape cohort]. We performed a cost analysis of each cohort and calculated the potential savings on implementing the second set up.

Results:
Using the code S06.5; 1139 procedures were performed in our unit in 2017. These were operated upon using the conventional setup (turban head drape 115x127cm, a single 90x90cm drape, and minor plastics set). A head turban drape 115x127cm costs £4.07, a 90x90cm absorbent drape costs £2.32, while 90x90cm single drape costs £0.84. The head pack, sometimes utilized in such cases, costs £30. The processing cost for Minor plastics set is £17.7. On the other hand, the first author has operated upon 100 consecutive cases of facial skin lesions excisions and/or reconstruction utilizing the fenestrated drape (from April 2015 till April 2017). It can be adjusted to include the ear for ear excisional and reconstructive procedures as well as for harvesting pre-auricular skin grafts. The processing cost for LOPA (minor procedures) set is £12.29, and the fenestrated drape 112x120cm costs £ 1.61. The least total cost for the conventional setup is (£ 4.07+0.84+17.7= £22.61) versus (£ 1.61+12.29= £13.9) for the fenestrated drape setup.

Conclusion:
The savings gained utilizing the fenestrated drape setup equals (22.61-13.9= £8.71) per procedure i.e. this saves about 40% of the cost per procedure. It does also same time of instruments counting and application of the drapes. The turban head drape needs more maneuvers and skills to apply, and not uncommonly slips back exposing the hair. On the other side, the fenestrated drape setup has proven efficient, patient and staff friendly, safe and economical technique for head draping. We are standardizing it for such procedures.
Recent Developments In The Management Of Patients With High-Risk Squamous Cell Skin Carcinoma: The Greek 10-Year Experience From Two Centers

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Background:
The presentation of the newest data on the classification of high-risk squamous cell carcinoma for local recurrence and lymph node metastases compared to low and the proposal of an algorithm for staging and management of high-risk patients based on clinical features, histological report of tumors and imaging detection techniques of lymph node metastases (US, US-FNA, SLNB). Finally, presentation of data bank interests of squamous cell carcinomas two centers of Greece the last 10 years.

Material and Methods:
A review of the literature on the management of high-risk squamous cell carcinoma and presentation guidelines of the NCCN (2015), the EDF-EADO-EORTC Consensus Group (2015) and the European Academy of Dermatology (2011). Finally, recording and processing of all patients who were operated in the last ten years.

Results:
The redefinition of risk assets has led to a better staging of squamous cell carcinomas in high - low risk and detection of lymph node metastases at the earliest possible stage. Of the total of 2,345 patients with squamous cell carcinoma of the period 2004-2014, 43 sentinel lymph node biopsies were performed in high risk patients, with five of them positive for metastatic infiltration (12%, corresponding to literature).

Conclusions:
The staging of high-risk squamous cell carcinoma by detection of lymph node metastases at an earlier stage with the least possible invasive techniques will lead to increased patient life expectancy and avoiding surgeries which are a burden not only for the patient but also for the public health system.
Microbiology Of Ulcerative Skin Cancers
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Aim:
To determine the bacteriology of ulcerative skin cancers in the different sites of the body

Methods and Materials:
This study was commenced from October 2015. We investigated malignant skin tumors that were admitted. Swabs were taken on each wound to determine the bacteriology. The management, surgical plan and outcomes were also recorded and analyzed. A total of 100 swabs where taken. They were divided into regions of the body and into specific sites of the regions following a swabbing protocol i.e scalp, face, groin, axilla, perineum, upper and lower limbs. These were then sent for microbiology gram staining, culture and sensitivity. A range of malignant wounds were swabbed including SCC’s, BCC’s, melanomas, sarcomas and DFSP lesions involving skin.

Results:
This is an ongoing study and the preliminary results have shown that in addition to contaminants both gram negative and gram positive bacteria where cultured in these wounds. A predominance of skin commensals as well as mixed growths were found. Tumor histology was recorded and it was noted that SCC tumors and sarcomas eroding the skin tended to culture more virulent haemolytic pathogens as compared to other ulcerative skin cancers like BCC.

Conclusion:
The spectrum and sensitivity of these bacteria will be presented.
Groin Dissections In Skin Cancer: Effect Of A Change In Prophylactic Antibiotic Protocol

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Introduction:
Groin dissection for metastatic skin cancer is potentially life-saving surgery, but has a high rate of surgical site complications, including infection. Postoperative antibiotic prophylaxis changed in our institution as a result of antimicrobial stewardship, from a practice of regular oral antibiotics until drain removal, to a protocol of three postoperative doses of intravenous antibiotics.

Methods:
Patients undergoing groin dissection for metastatic skin cancer were prospectively added to a database, and retrospectively reviewed for surgical site infection according to the Public Health England criteria. Surgery was performed by or under supervision of a single surgeon for all patients in this series, over a 7 year period. 80 groin dissections in 79 consecutive patients were included in the study. 40 consecutive dissections had postoperative oral antibiotic prophylaxis until drain removal, for a mean of 26 ± 7 (range 19-36) days. A protocol of three post-operative intravenous antibiotic doses was implemented for the subsequent 40 dissections.

Results:
The surgical site infection rate was lower with antibiotic prophylaxis until drain removal, 10 of 40 (25%), than in the shorter group, 22 of 40 (55%), (OR 3.67, 95% CI 1.42-9.47, p=0.006, chi-squared). Each group had 5 superficial infections, but the deep infection rate was significantly lower in the longer group, 5 of 40 (13%), than the shorter group, 17 of 40 (43%). (OR 5.17, 95% CI 1.68-15.98, p=0.002, chi-squared). The median onset of infection was 22 days (IQR 11-24, range 4-119) compared with 19 days (IQR 14-22, range 4-27, p=0.54, MWU). Readmissions for infection increased from 5 (13%) to 16 (40%), (OR 4.67 95% CI 1.51-14.46, p=0.005, chi-squared), and occurred earlier at a median of 22 days (IQR 17-31, range 9-38), compared with 50 days (IQR 42-53, range 26-128, p=0.005, MWU) in the shorter prophylaxis group. Seromas were noted in 18 (45%) and 17 (43%) respectively (OR 0.90, (95% CI 0.37-2.19 p=0.82, chi-squared), and wound dehiscence in 7 (18%) and 5 (13%) (OR 0.67, 95% CI 0.19-2.33, p=0.53, chi-squared), respectively.

Conclusions:
Surgical site infections for groin dissections more than doubled following implementation of a shorter duration of antibiotic prophylaxis, due to considerably increased rates of deep infection. Readmissions for infection increased and were sooner after surgery. Seroma and wound dehiscence rates were unchanged. Infections mainly occurred in the third and fourth weeks after surgery.
Thermal Injuries
Comparison Of Enzymatic, Mechanical And Autolytic Debridement Methods For Treatment Of The Forearm And Hand Partial Thickness Deep Dermal Burns

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Aim:
Compare debridement methods for the treatment of the forearm and hand deep dermal burns

Methods:
Randomized, controlled, single-blind, parallel-group clinical trial was designed to compare enzymatic, mechanical and autolytic debridement methods. All patients admitted to University Hospital in 2014-2017 were scanned with Laser Doppler Imaging device to determine burn wound deepness. Viable keratinocytes sites were determined according established Perfusion Units (PU) measurement system. The patients with hand and forearm burn wound of 250-600 PU were included. 82 patients participated in the trial. For the first group we used standard treatment - dressings with silver sulfadiazine. The second patients group got hydrocolloid dressings which promote autolytic debridement. The third patients group got treatment combination - dressings with silver sulfadiazine and mechanical debridement with special single-use pad of monofilament polyester fibers. The fourth group treated with application of enzymatic dressings. Wound healing status was assessed after 3,7,14 and 21 days. The postburn scars and injured extremity function were assessed after six months according to the Vancouver Scare Scale (VSS) and the Disabilities of the Arm, Shoulder and Hand Outcome Measure (DASH).

Results:
The fastest epithelisation of hand and forearm burn wounds was observed in the patients group treated with hydrocolloid dressings (15.7 days, p<0.05). Quality of scars according to VSS and extremity function according to DASH also was valued supremely for the hydrocolloid dressings group. Moderate correlation was found between the fastest wound healing time and the best VSS values (R=0.51; P<0.01) and the fastest wound healing time and DASH alteration after six months post burn (R=0.5; P<0.01) among the patients of all groups.

Conclusion:
Accelerated autolytic debridement is an effective instrument for the treatment of the forearm and hand deep dermal burns and hypertrophic scar prevention with LDI healing prediction less than three weeks.
Restoring Facial Volumes In Postburn Reconstruction
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Introduction:
Profound fibrosing resulting from deep burns of the face blocks animation and flattens natural curves and volumes destroying its individuality and expression. Postburn facial reconstruction has benefited largely from the inflow of modern microinvasive techniques as well as from the renaissance of earlier ones.

Materials and Methods:
We report our experience in rebuilding facial relief following deep burns in 50 patients. Scar dermis roll over flaps, lipofilling and bone grafts have been applied independently and in combination with the aim to restore definition of facial regions: nose, lips and perioral area, forehead, malars, chin.

Results:
Single technique was applied in 35 cases, two techniques – in 14 cases, and three techniques in one case. 23 patients had 68 scar dermis roll over flaps, 40 patients had 101 lipofilling procedures and 2 patients had 5 bone grafts.

Outcomes:
The heavy artillery of bone grafts could be successfully paralleled and in many cases even superseded by more sparing methods. Lipofilling enhances and refines the relief recreated by bone grafts or scar dermis flaps.
Improving The Quality Of Acute Burns Assessments In A Regional Burn Centre
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Introduction:

A project was commenced to improve the quality of assessment of acute burns, via admission proforma data compliance and subsequently to improve the quality of data input into an international database which feeds into specialised burn care quality dashboards.

Methods:

A retrospective review of completed admission proformas for 80 consecutive burns presentations to a regional burns centre was performed in March-April 2017. Following implementation of teaching sessions for junior doctors and introduction of a new proforma, a further review of 80 consecutive presentations in June–July 2017 was performed. Sixty-seven aspects of acute burn care were evaluated on each proforma.

Results:

Of 67 aspects of care reviewed, 63 demonstrated a documented improvement in assessment quality. An improvement was observed in the rates of assessment of key areas such as recording of: time of burn (20% improvement), total burn surface area (11% improvement), total partial thickness burn area (28% improvement), total full thickness burn area (30% improvement) and body weight (35% improvement).

Conclusions:

Simple changes to admission documentation can help centres achieve the minimum dataset for burns patients, including time of burn, body surface area involvement, partial and full thickness burn surface area, and body weight. Combining this with training sessions for junior doctors benefits burn assessment quality, which enhances the communication between the health professionals of different disciplines throughout the period of care.
Upper Limb
Proximal Carpal Crease Incision For Carpal Tunnel Release
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Introduction And Aim:
Palmar Incision for Carpal Tunnel Release (PITR) is the standard approach for treatment of carpal tunnel syndrome. Proximal Carpal Crease Incision (PCCI) is an investigated alternative. Aim - To evaluate and compare safety and results of PITR and PCCI approaches.

Methods:
A prospective randomized, controlled, parallel-group study was carried out in 2011 - 2016. Patients were randomized into 2 groups according to the incision. Measured characteristics: safety, severity of pain, DASH test, hand grip and pinch strength. Data were collected before surgery, in the early (2-3 weeks after operation) and late (3-4 months after operation) post-operative periods. Significance level of 0.05 was considered for testing statistical hypotheses.

Results:
45 patients (♀ 78.8% (35), ♂ 22.2% (10), mean age 55.14±14.33 were recruited for the study. Group 1 (PITR) - 31 patients, group 2 (PCCI) - 14 patients. Early and late post-operative results were evaluated 20.96±7.46 and 110.33±37.73 days after the operation. Results in early and late post-operative periods, respectively: pain score - PITR 2.36 ± 2.80, PCCI 1.64±2.37; PITR 1.45±2.54, PCCI 0.43±1.60 ( p>0.05); DASH score - PITR 36.18±21.14, PCCI 28.14±18.65; PITR 13.07±16.98, PCCI 10.13±16.66 ( p>0.05); hand grip strength - PITR 16.65±11.38, PCCI 21.79±12.66; PITR 26.85±11.12, PCCI 29.61±14.54 ( p>0.05); pinch strength - PITR 4.35±2.38, PCCI 5.67±2.50; PITR 5.90±2.07, PCCI 7.21±2.81 ( p>0.05). No complications appeared in both groups.

Conclusion:
Proximal Carpal Crease Incision is a safe alternative with a tendency for faster recovery after PCCI carpal tunnel release.
Thumb CMC Athroplasty: Techniques And Outcomes
A. Skarparis

1Private practice, Cyprus

At the presentation the different techniques for treating the Thumb carpometacarpal arthritis will be discussed. A comparison between the different procedures and indications for each surgical modality will be discussed. Emphasis will be given for the LRTI (Ligament Reconstruction Tendon Interposition) technique. Tips from personal experience for successful outcome will be commented.
Limb Salvage After Isolated Limb Perfusion In Sarcoma Patients
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Background:
This study describes the tumor response, complications, recurrence and survival after Isolated Limb Perfusion (ILP) with Melphalan in combination with Tumour Necrosis Factor-alpha (TNF) in Danish patients with soft tissue sarcomas (STS) as a limb-sparing procedure.

Material and method:
Single-center prospective case-study. Patients with a STS localized on a limb where excision would mean amputation or when a local resection would cause major functional morbidity was found eligible for ILP as a limb-sparing procedure. From 2004-2015 46 successful perfusions were performed.

Results:
The overall response of ILP was 70%; 17% had complete response (CR), 53% had a partial response and 30% had no change or progression. Within 2 years the limb salvage was 78% and fell to 72% overall with a median time from ILP to amputation of 144 days. Three patients with clinical CR were later amputated without relation to ILP. 4 weeks after ILP the median tumor size shrank to 6.7cm from 7.2cm and 31 patients underwent surgery, 61% with radical margin, 29% with marginal margin and 10% with intra-lesional tumor resection.

Local toxicity reactions to ILP were scored according to the Wieberdink criteria. Of all patients 85% had mild local toxicity reactions and 13% had moderate local toxicity reactions. One patient underwent amputation.

Time to local recurrence was 357 days in 27% of the patients who underwent radical surgery or had a clinical CR. Furthermore, 45% developed metastasis within 301 days. Time to death was 1.7 years and approximately half of the population died in the follow-up period.

Conclusions:
For the majority of patients ILP induced tumor regression providing the opportunity for surgical removal of the remaining tumor without amputation. Furthermore, 5 patients had a clinical complete response. The procedure had an acceptable morbidity. We are convinced that ILP is a good treatment option for locally advanced extremity sarcomas as a neoadjuvant treatment.
A Successful Case Of Thumb Pulp Replantation
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Introduction:
Thumb amputation is one of the well-established indications for replantation, due to the importance for hand function. Therefore, replantation should be tried whenever possible, even in the presence of unfavorable factors. Fingertip amputation, although being one of the most frequent lesions, represents an increase in technical difficulty, primarily given the dimension of the structures. This leads many surgeons to opt not for replantation or eventually to try to use the amputated part as a composite non-vascularised graft. However, if successful, replantation of the fingertip presents the highest rate of patient satisfaction, due to very good functional and aesthetic results.

Case report:
20-year-old male, victim of partial amputation of the left thumb, in a work-related accident with an oscillating saw. The lesion was obliquely oriented: dorsally from the lunula to the volar interphalangeal fold (Zone II in Tamai’s Classification). He was first intervened by the Orthopedics team of another local hospital, who fixed the F2’s fracture with a Kirschner wire but, as they noticed devascularization, the patient was transferred to our hospital. The flexor pollicis longus as well as the proper digital nerves were intact. Both proper volar digital arteries were sectioned and the radial one was anastomosed with Prolene 10/0. It was not possible to find veins to revascularize. In the postoperative period, profuse bleeding was noticed from the skin edges in the first 5 days, probably due to difficult venous drainage. No further complications were reported. Four months after surgery, it has an acceptable aesthetic result, with some limitation of nail growth. After attending a rehabilitation program, it now presents good mobility of the interphalangeal joint and pinch strength close to normal. The sensitivity of the pulp is normal.

Discussion:
Successful fingertip replantation, particularly of the thumb, lead to superior results when comparing to composite grafts (which in adults have a low survival rate); regional or free flaps (which imply donor site morbidity) or shortening (of the most important finger to hand’s function). Even after prolonged ischemia time, fingertips have a good survival potential. In Tamai’s zone II replantation, some joint rigidity may occur due to its proximity. It may also some come with abnormalities in nail growth or pulp atrophy. These aspects generally have no significant functional impact.

In conclusion, although technically advanced, fingertip’s replantation represents an added value for the patient and a proof of the progress of microsurgery.
The Dorsal Adipofascial Turnover Flap - A Versatile Flap For Soft Tissue Defects Of The Hand Dorsum

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Introduction:
The dorsal adipofascial turnover flap was first described by Lai et al in 1991 as a one-stage procedure for reconstruction of skin defects of the hand and fingers. Since then, Unlu et al reported using the technique for reconstruction of fingertip amputations. The biggest series was reported by Braga-Silva et al in 2004, whereby 40 patients with skin loss over the dorsal aspect of the middle and distal phalanx had cutaneous reconstruction with good outcomes. There is no description of the flap's use for reconstruction of non-cutaneous soft tissue defects or defects on the dorsum of the proximal phalanx.

We report our surgical technique and a case series demonstrating its use for dorsal skin defects and coverage of denuded bone and metalwork.

Our Technique:
Under local or general anaesthesia and tourniquet control, a chevron incision is made at the site where the flap is to be harvested from, and skin-only flaps raised. The adipofascial layer between the dermis and extensor tendon paratenon is harvested as a flap, stopping the dissection about 0.5-1cm from the edge of the defect. The flap can be distally, proximally or laterally based depending on the location of the defect. The flap is reflected on itself and inset into the defect using an absorbable suture. For skin defects, a skin graft is then harvested and secured over the flap. The skin flaps over the donor flap site are closed primarily.

Case reports:
We have used this flap to reconstruct traumatic skin defects of the dorsum and tip of the digits, a skin defect over the proximal phalanx resulting from excision of a squamous cell carcinoma, as well as to cover an exposed middle phalanx fracture prior to extensor tendon reconstruction, and an osteosynthesis of the thumb. The age of our patients ranged from 20 to 71 years. Local anaesthesia only was used when the defect was very distal. All our patients had 100% survival of the flap and graft and achieved good range of motion post-operatively.

Conclusion:
Our series demonstrates how dorsal adipofascial turnover flaps can be a simple, reliable and versatile reconstruction technique, even when they are proximally or laterally based, not only for reconstruction of cutaneous defects but also as an adjunct to tendon reconstruction. This flap also offers the advantages of being thin and pliable and can be carried out as a single-stage procedure without the need for immobilising adjacent digits.
Epidemiology Of Hand Fracture Presenting To King Saud Medical City: A Major Trauma Center In Riyadh.
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Introduction/Purpose:
Trauma is one of the leading causes of morbidity and mortality in Kingdom of Saudi Arabia and worldwide. King Saud Medical City (KSMC) is considered a major trauma center of Riyadh, the capital of Saudi Arabia. Our study main objective was to know the prevalence of hand fracture in KSMC. Henceforth, classify and describe the common phalangeal and metacarpal fracture and related injuries in KSMC. Also, to report the most common complications related to phalangeal and metacarpal fracture.

Materials and methods:
A retrospective chart review of patients’ files presented to the KSMC with metacarpal and phalangeal fracture from 1/1/2016 to 19/9/2017 was done. All primary and secondary files were identified and reviewed by the data collectors. Medical records were filled on standardized online data collection tool specifically designed for the study. Among those excluded were hand, fingertip, tendon, joint dislocation and vascular injuries without metacarpal and phalangeal fracture.

Results:
Of the 82 patients’ records reviewed, 74 (90%) were males. The mean ±standard deviation (SD) age was 27.6 ±13.4, range 1 to 69 years. The most common cause of injury was accidental fall on the hand 29 (35%). The majority of the patients were treated surgically 73 (89%) with 68 (83%) undergoing one operation. Interventions, Open Reduction and Internal Fixation with K wire was the most common; 33 (40.2%). Post intervention, 54 (65%) were healed with 70 (85%) having no complications.

Conclusions:
Most hand trauma Patients presenting in our trauma setup has to be managed by open technique to achieve best result and early return to daily work. The study will guide us in long run to employ prevention methods once we know the prevalence of hand fracture and the mechanism leading to injury.
Toe To Thumb Process - The Cyprus Experience
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Toe to thumb transfer in the upper limb has become the gold standard treatment for post traumatic thumb reconstruction. Its use covers all forms and levels of thumb injury allowing for an individualised tailored approach to reconstruction of hand function. At present microsurgical techniques are so refined and accurate that almost any thumb deformity can be corrected. We present our experience as a single team in over 100 toe to thumb transfers.

Methods:
For the purpose of the study we carried out a retrospective study of the cases carried out by our team over the period 2005-2016. A total of 112 patients have been operated on, and all were male patients. Average age was 32 years and right to left hand prevalence was equal. Mechanism of injury was work related in 70% of cases, and reconstruction was completed within 5 days in 90% of patients unless there were specific contraindications to this. Of the total cases performed, over 60% involved big toe transfers (complete or partial), and the level of thumb reconstruction in 40% was distal to the ip joint.

Results:
We are able to offer data on follow up in our patients at more than 10 years now, and share our experience on the outcomes of this surgery over this period. Complications in our experience are limited relating to wound healing issues, donor site morbidity and functional outcome, and we have had complete transfer failure in less than 2%. However, a secondary procedure is required in at least 85% of patients.

Compared to patients who have not undergone thumb reconstruction, toe transfers offer incomparable levels of hand function. The majority of patients are able to accomplish good motor skills and pinch/grip strength can be restored to at least 70% compared to the contralateral side. Sensory recovery is more variable, and the importance of rehabilitation in achieving sensory reorganisation is paramount.

Aesthetic appearance is pivotal to overall outcome assessment, and can be very challenging for the surgical team. The requirement for secondary procedures to address these issues is central to the reconstructive approach.

Conclusion:
These procedures continue to challenge the most experienced of surgeons, and although the techniques continue to evolve, the procedures are lengthy, demanding and associated with morbidity. Ultimately the aim of surgery is to return the patient to their normal activities.
Pollicization For Hypoplastic Or Absent Thumb
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Background:
Among the various congenital anomalies of the hand, thumb hypoplasia is the 2nd most frequent anomaly of the first finger. This pathology can be presented isolated or associated with systemic syndromes such as Holt-Oram, TAR, VATER and Fanconi anemia.

This pathology gives the patient a considerable functional limitation and a negative impact on their quality of life.

The type of surgical intervention proposed varies according to the degree of severity, taking into account the Blauth-Buck-Gramcko classification, based on narrowing of the interdigital space, hypoplasia of the musculoskeletal components, joint instability and abnormalities in the extrinsic tendons.

In more severe cases, grade IIIB, IV and V, the surgery with the best reproducible results is pollicization, in which transposition of the distal part of the index finger to the anatomical position of the thumb is performed.

Methods and results:
In this presentation we will discuss the fundamental concepts of thumb hypoplasia, its clinical presentation, classification and the surgical indications best established in current clinical practice.

About pollicization, we will deepen the surgical approach throughout its various operative steps and the expected complications and possible corrections.

We will present the results of some clinical cases through photographic record and videos.

Conclusions:
The surgical treatment of this pathology aims at the reconstruction of the thumb in order to allow normal mobility, stability and ability of clamp and claw.

We conclude that the results of pollicization, when all the surgical principles are respected, are uniformly good and long lasting, extending into adult life.

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Introduction:
Osteoarthritis is the single most common cause of disability in older adults. It can pose significant burden to patients' movement, ability to work, quality of life and psychosocial well-being. This cost the NHS £6.1 billion in 2008. 6% of the U.K. population above the age of 45 years seek treatment for osteoarthritis of the hand and wrist. Intra-articular steroid injections are part of the first line treatment algorithm in managing this condition.

Aim:
To perform a cost analysis and service evaluation of patients receiving steroid injections of small joints of the hand, comparing an ultrasound-assisted technique, performed by a musculoskeletal radiologist (non-surgical group) and fluoroscopic-guided injection performed by hand surgeons in an operating theatre (surgical group). Secondary outcome measures included elapsed time from point of ‘decision to treat’ to the delivery of treatment and patient experience.

Method:
A retrospective evaluation of activity across a single financial year, Healthcare Resource Group codes and tariffs for both study arms was conducted through data derived from an electronic radiology outpatient booking system and theatre procedure logs.

Results:
68 patients involving 72 joints were identified in the non-surgical group. 15 patients involving 18 joints were identified in the surgical group. The cumulative tariff of steroid injections performed surgically was significantly greater than that performed in the radiology department. The average time from point of ‘decision to treat’ to the delivery of treatment was 82 days (23-216) in the surgical group compared to 66 days in the non-surgical group (30-97).

Conclusion:
Ultrasound-assisted steroid injections performed in the outpatient setting currently provide a better patient experience and can be a solution to surgical waiting times for elective hand procedures. It offers significant cost savings, in a climate of a resource-depleted NHS.
Steroid Injections For Carpal Tunnel Syndrome In The Primary Care Setting: Where Are We Injecting?

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Carpal tunnel syndrome is a common problem affecting the hand. Non-surgical treatments include the use of splints, especially at night, and steroid injection into the carpal tunnel. Practice guidelines in the UK recommend a trial of non-surgical treatment options such as local corticosteroid injection prior to carpal tunnel surgery and this is increasingly advocated by clinical commissioning groups in the advent of increasing financial pressures on the National Health Service. As a result, steroid injections are increasingly performed in the primary care setting. There is no strong evidence as yet looking into the safety of steroid injections for carpal tunnel syndrome in a primary care setting and the incidence of iatrogenic nerve injury as a result.

The authors relate a case of a patient referred to the tertiary centre with iatrogenic injury to the median nerve following steroid injection for carpal tunnel syndrome performed by a general practitioner (GP) in the community. This leads to a study of previously known cases of median nerve injury following steroid injections into the carpal tunnel; management of suspected nerve injury; an evaluation of techniques for steroid injection into the carpal tunnel and their potential pitfalls. The authors highlight the debilitating complication related to the technique of blind injection of steroid for the condition in the community and possible dreaded outcomes. They recommend ultrasound-guided or specialised training for primary physicians performing the procedure.
Health-Related Quality of Life of Patients with Thumb Carpometacarpal Joint Arthritis with a novel Partial Trapeziectomy and Tendon Interposition Arthroplasty technique
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Background:
Complete trapeziectomy with ligament reconstruction and tendon interposition (T+LRTI) is the most common surgical technique for treatment of advanced thumb carpometacarpal joint (CMCJ) osteoarthritis (OA) in North America. The literature however indicates that this technique is associated with higher complication rates than less invasive techniques. We present a case series of a less invasive technique, partial trapeziectomy and tendon interposition arthroplasty (PT+TIA), for treatment of advanced thumb CMCJ OA and report the Health Related Quality of Life (HRQoL) outcomes associated with it.

Methods:
Patients with advanced stage arthritis (Eaton stages II-IV) of the thumb CMCJ underwent PT+TIA, which involved: 1) excision of the remaining articular surface of the trapezium (partial trapeziectomy) and the articular base of the first metacarpal bone, and 2) interposition with the palmaris longus tendon to fill the gap created by excision. This technique maintains stability of the "pseudo-joint" construct by preserving the capsule and periarticular ligaments. Patients completed HRQoL questionnaires (SF-36, DASH, and EQ-5D) at: 1 week pre-operatively, and at 1, 3, 6 and 12 months post-operatively. Quality Adjusted Life Years were calculated from outcomes at 1 week pre-operative and 6 months post-operative.

Results:
Thirty patients were invited to participate in the study, 21 (70%) did not meet the criteria because of other concomitant surgeries such as carpal tunnel release. Six patients completed all instruments. All patients were female, with an average age of 57.3 years. Improvements were seen in: the DASH disability symptom score and EQ-5D (usual activities, pain/discomfort, anxiety/depression and state of health today), SF-36 physical and mental score also improved. Seven Quality Adjusted Life Years (QALYs) were gained with this technique.

Conclusions:
PT+TIA appears to provide a large improvement in HRQoL at six months. This improvement is equivalent to a patient living an additional 7 years in perfect health. This finding provides reason to conduct a large-scale study comparing PT+TIA with the standard T+LRTI.

Trial Registration:
ClinicalTrials.gov Identifier: NCT03392454
Wrist Arthrodesis For Upper Limb Spasticity In Cerebral Palsy
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Introduction:
Wrist arthrodesis remains an important technique in the surgical armamentarium of upper extremity surgeons, providing reliable pain relief and a stable wrist for power grip at the expense of wrist motion. Recent studies demonstrate high levels of patient satisfaction and good functional outcomes with respect to pain relief and correction of deformity with wrist arthrodesis in general. In cerebral palsy, management of upper limb spasticity is often multi-modal, incorporating manual therapy, biofeedback, supports and orthotics including taping, dynamic and static splints, wheelchairs, medications, and injectable neurolytic medications such as botulinum toxin. Equally, surgical correction may require a combination of techniques.

Methods:
A retrospective review of patients with cerebral palsy undergoing wrist arthrodesis in our plastic surgery department over ten years (2008-2017 inclusive) was performed. Operative technique, ancillary procedures and outcomes were reviewed.

Results:
11 wrist arthrodesis procedures were performed in 10 patients (one bilateral) with cerebral palsy. Mean age was 22 years (range 16-37), among 7 males and 3 females. 5 patients received botulinum toxin injections or formal preconditioning before the arthrodesis. In 5 cases, a proximal row carpectomy was performed during fusion. In 8 wrists, tendon procedures were required as part of the primary operation, including transfers, lengthening or tenotomy.

Conclusions:
Wrist arthrodesis in combination with tendon surgery is an effective option for spasticity and contractures related to cerebral palsy, and preconditioning should be considered when planning surgery.
Improving Financial And Time Efficiency In Nailbed Repair And Minor Hand Procedures- An Audit Of Different Practices

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Aims:
The purpose of this study is to present our simple, efficient and cost-effective setup for nailbed repair and minor hand procedures using a fenestrated drape and LOPA surgical set. We aimed to estimate the average frequency of nailbed repair and minor hand procedures in our unit. We also estimated the costs of the procedure using the traditional hand drape and minor plastics set (conventional set up) versus the costs of using a fenestrated drape and LOPA "minor outpatient surgeries" set (simple set up). We then estimated the potential savings on implementing the use of that simple system for such procedures.

Methods:
We identified the cohort of patients who had undergone nailbed repair in theatres, coded as (Repair of nailbed – code: S66.2) from April 2016 until April 2017 (12month period). These were performed using the conventional setup. Data were analyzed using excel spreadsheet. We estimated the costs for those who had undergone the procedure using the simple set up by the first author (N=50). We compared the costs of each cohort and estimated the cost savings for this procedure.

Results:
The conventional setup cohort of nailbed repair comprised of 488 patients, 71% of whom were pediatrics (N=344, mean age=6), and the rest were adults (N=144, mean age=49). Processing cost for Minor plastics set is £17.7 and a hand drape costs £16.54 (Total cost= £34.30). On the other hand, the simple setup cohort comprised of 50 patients, 80% of whom where pediatrics. The processing cost for LOPA set is £12.29 and a fenestrated drape costs £1.61 (Total £13.90, about 40% of the conventional cost).

Conclusion:
Using simple set up saves the time of counting and sterilizing, as well as money. Potential money savings of this cohort of nailbed repair = 488x20.04 = £9,779.52 per year (60% cost saving). We expanded the utilization of the same principle to simple procedures such as (fingertip injuries, terminalisation, removal of K wires, distal extensor tendon injuries) and (open carpal tunnel decompression, trigger finger release and mucous cyst excision). We implemented these changes and prospectively re-audited our practice over a month’s period. This improves time and financial efficiency with these very common procedures.
Safety Of Wide-Awake Hand Surgery – Systematic Review Of The Literature And Practical Lessons Learned From Our First 277 Cases
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Purpose:
This paper aims at summarizing results of series of more 277 patients analysing possible pitfalls and traps giving practical tips when starting to use the „wide-awake“ approach using lidocaine anesthesia with epinephrine for vasoconstriction to avoid tourniquet use.

Methods:
We performed a systematic review of studies on wide awake hand surgery using PRISMA-criteria and analyzed our operation documents from 4/ 2013 until 4/ 2017.

Results:
Overall, the systematic review included 35 studies with 6345 patients, 29 used a mixture with 1 :100 000-Lidocain-Epinephrine, 6 studies with 1 : 1 000 000 ("one per mil"). There were 7 (0,08 %) major complications including 1 CRPS after insufficient intraoperative analgesia, 2 nerve injuries due to insufficient bloodlessness and 4 x acral (partial finger) necroses. A total of 39 patients (0,64 %) had with minor (temporary) complications, above all due to insufficient bloodlessness – 15 cases

In our own series of 277 patients, we found no iatrogenic vascular injuries, 2 possible digital nerve injuries (1 neuroma), 1 incomplete operation (partial trapeziodectomy), 4 conversions to general anaesthesia (propofol) and 6 conversions to upper arm tourniquet. Phentolamin as antidot was never required, excessive bleeding occurred only during initial phase (before waiting > 20 min between injection and incision).

Possible pitfalls in our practical experience include:
1. Some patients who cannot tolerate to „feel“ operation (not pain)
2. Reoperations with extensive scar beds – distorted anatomy, adhesions, tumescence distribution impaired,
3. Dupuytren’s contracture distal to MCP joint – beware of spiral cords, nerve deviation, bleeding despite adrenaline,
4. Deep Dissections (to the Bone) – temporary tourniquet ? 5. Trauma with vascular injury – vascular contraction / spasm – perfusion difficult to assess,
5. Tumors (above all malignancies, vascular tumors) – bloodless important field to ensure complete removal,
6. Small nerve operations, e. g. joint denervations.

Conclusions:
WALANT is not „blood-less“ surgery – you have to adapt yourself, but bloodiness can be reduced markedly if you wait about 20 min. Local anaesthesia with epinephrine in hand surgery is safe and reliable and has many advantages for patients and surgeons. Major complications are (but not nil). Risk factors for local ischaemia should be excluded and if you start with this new approach, begin with easy cases, then progress and avoid traps and pitfalls.
A Systematic Review Of Psychosocial Outcomes In Congenital Upper Limb Anomaly Surgery
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Background:
Congenital upper limb anomalies (CULA) are often associated with psychosocial difficulties including negative body image, low self-esteem and withdrawal from social activities. However, much of the literature focuses on functional outcomes with a paucity of studies addressing psychosocial outcomes. This study aims to identify, describe and evaluate all published studies addressing psychosocial outcomes in paediatric CULA surgery to guide regular psychosocial assessment within clinical practice and direct future research.

Methods:
A systematic search of Medline, Pubmed, EMBASE and PsychInfo databases from inception - March 2018 was performed. Data extracted included sample size, age, study design, CULA type, psychological measures(s) used and key psychological findings. Psychosocial outcomes were divided into four main domains for analysis: quality of life and psychosocial functioning; adjustment to/satisfaction with function, appearance and surgery; self-image; and psychological wellbeing.

Results:
Twenty-three studies were identified using seventeen psychosocial assessment tools. Three studies were prospective and three were comparative using a control group or population norm. Four studies focused on only parental perspectives of psychological outcomes and 6 focused on patient perspective only. The commonest methods of assessment were Likert scales (n =7). Only three psychosocial assessment tools were used across multiple studies. None of the assessment have been shown to be valid or reliable in a CULA population. Overall adjustment to/satisfaction with function, appearance and surgery was good post-operatively with a high level of consistency between parents and children. Quality of life and psychosocial functioning was comparable to control groups but did not appear to be improved post-operatively. Self image was improved post operatively and higher than population norms in one study. Psychological wellbeing appears to be stable post-operatively but not improved overall.

Conclusion:
There is a paucity of studies addressing psychosocial outcomes in paediatric CULA surgery. The majority of children appear to adjust well to their condition and surgery, however this is not the case for everyone. Overall, little is known about the impact of surgery on the psychosocial functioning and wellbeing of children and if surgery improves this aspect of their condition. This review highlights the need for the routine assessment of psychosocial outcomes to capture longitudinal data into adult life to help guide evidence based CULA management. We feel these should cover the domains addressed in this study. This will allow a targeted approach for both surgical and psychological intervention to facilitate the psychosocial wellbeing of children born with CULA.
The Application Of Integra® Dermal Regeneration Template In Hand And Upper Limb Reconstruction.
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Integra® is a bilayer dermal regeneration template for skin replacement. The dermal replacement layer is made of collagen and glycosaminoglycan, and the temporary epidermal substitute layer is composed of silicone. After formation of the neodermis, the silicone layer is substituted by a split-thickness skin graft.

Integra® is an effective treatment for full-thickness skin defects and is also helpful in scar contracture release procedures, both in adults and pediatric patients.

The authors report their experience with Integra® in different upper extremity clinical scenarios. In 3 cases, Integra® was used to reconstruct severe scar contractures of the hand (2 children and 1 adult); in 1 case, it was used to reconstruct a congenital contracture of the first web-space of the hand in a pediatric patient; 1 case of an acute degloving injury of the index finger; 1 case of full-thickness defects in the hand and forearm in a hand-reimplantation patient; it was also used to cover the donor area of 5 radial forearm free flaps. The epidermal autografts were placed between 14 and 21 days after surgery.

In all cases, Integra® provided stable and reliable coverage of the defects, with good range of motion. Local infection occurred in 1 case and was successfully managed with dressings and oral antibiotics. There were no major complications.

Dermal regeneration templates are easy to apply, are well tolerated by the patients, and have aesthetic and functional benefits comparable to full-thickness autografts without the associated donor-site morbidity. They can also obviate the need for flap reconstruction in some selected cases, with advantages in terms of donor-site sequelae and simpler, less-invasive and quicker operative procedures and recovery.

In conclusion, in our opinion Integra® is nowadays a valuable and indispensable tool for modern plastic and reconstructive surgery.
The Thoracodorsal Artery Perforator (TDAP) Flap As An Alternative For The Surgical Treatment Of Axillary Acne Inversa
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The axillary acne inversa is a common skin disease that often requires a surgical approach. In many cases, appropriate therapy can be provided through excision of the entire sweat-gland-bearing area. The resulting defects pose a challenge to the plastic surgeon due to the localization and the regularly severely scarred surrounding tissue. Usually, local flaps or skin grafts are applied to achieve defect coverage.

We discuss postoperative outcome after excisional therapy and secondary wound healing versus immediate axillary soft tissue reconstruction using pedicled thoracodorsal-artery perforator (TDAP) flaps regarding OR Time, functional and aesthetic outcome.

According to our experience the TDAP flap is an excellent alternative for the immediate coverage of axillary defects after resection of acne inversa.

Advantages are the reduced donor site morbidity, the wide arc of rotation and the delicate skin texture. Disadvantages might be extended operating time.
Urogenital and Perineal Reconstruction
Reconstructing Impossible In Perineal Reconstruction: A Perforator Flap Puzzle
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Introduction:
Reconstruction of extensive defects encompassing pelvic floor, perineum, vulva and bilateral gluteal areas following resection of recurrent malignancies is particularly challenging in the setting of previous local flaps, extensive scarring, recurrent infections and radiotherapy. Though abdominal flaps have been used for largest defects in this area routinely, they may not be large enough when defects extend far beyond perineum and their use is limited when several stomas are required. We present the use of multiple perforator flaps supplied by different perforasomes to reconstruct otherwise non-reconstructable defect.

Case Report:
74 year-old woman affected by radio-recurrent squamous cell carcinoma of her vulva, following multiple previous surgeries including V-Y IGAP flap reconstruction, extensive chronically infected, scarred macerated skin around urethra, anus, perineum and bilateral gluteal areas underwent extensive soft tissue resection of these areas alongside pelvic exenteration, colostomy and ureteric stents. Gynecological surgeons performed the resection of uterus and vagina, colorectal surgeons excised rectum, anal canal, urethra, part of bladder and very large previously irradiated area of soft tissue followed by colostomy whilst urologists performed a suprapubic catheterization in the right side of abdominal wall. Intra-operative Doppler was used to identify all perforators. Extensive pelvic-perineal-vulvar-gluteal defect was then reconstructed with a mega-chimeric pedicled ALT-vastus lateralis perforator flap harvested from the left thigh that covered 60% of defect. Donor site closure required a skin graft harvested from the right thigh and secured on the recipient site by using a topical negative wound pressure device. Remaining 30% of defect was covered with chimeric-blood supply extended Gracillis-PAP flap whilst remaining 10% was resurfaced with small IGAP flaps. Apart from small area of delayed healing at the flap junction, all flaps healed uneventfully and good functional outcome was achieved.

Conclusions:
Extensive defects encompassing perineum, pelvis, vulva, gluteal and perianal areas are impossible to reconstruct with a single flap. Combining different perforasomes we can harvest large amounts of healthy soft tissue in spite of many conundrums and achieve good functional outcome.
Mayer-Rokitansky-Kuster-Hauser: Vaginal Reconstruction With Dermal Matrix

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Background:
Mayer-Rokitansky-Kuster-Hauser (MRKH) is a congenital syndrome characterized by aplasia/ hypoplasia of Mullerian structures, particularly of the uterus and 2/3 of the vagina in women with normal secondary sexual characteristics and external genitalia and karyotype 46 XX.

The incidence has been estimated to be 1: 5000 female live births and it is classified as type I (isolated) and type II (association of MURCS - Mullerian Renal Cervicothoracic Somite abnormalities). Its etiology remains unknown, but studies suggest mutations in the HOX genes.

Clinically it presents with a typical triad: primary amenorrhea, cyclic abdominal pain and impossibility of vaginal penetration during intercourse. Usually the diagnosis is made in adolescence, by clinical and imagiologic evaluation through transabdominal or transrectal ultrasound and MRI.

First-line therapy can be non-surgical, by the Frank or Ingram technique, both based on progressive dilation with vaginal dilators. Surgical therapies presuppose the creation of a neovagina, and can be performed by various techniques: sigmoid vaginoplasty; McIndoe technique with partial skin graft; Horton's technique with total skin graft; Williams vaginoplasty; Vecchietti technique and vaginoplasty with internal pudendal fasciocutaneous flaps, myocutaneous VRAM or Gracilis, small lips or oral mucosa.

Methods:
We present the case of a female patient, 18 years old, with primary amenorrhea and inability of vaginal penetration. Clinically she presented a seemingly normal vulva but impossibility of vaginal touch due to the non-existence of the canal. At the MRI, atrophic uterus and vaginal aplasia were confirmed.

She was submitted to surgery where a space was created between the rectum and the bladder and a neovagina was elaborated shaped in a vaginal expander with XCM BIOLOGIC® (DePuy Synthes) acellular porcine dermal matrix and mucosal interposition in microfragments harvested from the hymen.

Results:
After 12 months, the patient presented good esthetic and functional results.

In her FSFI (Female Sexual Function Index) questionnaire she reflected good sexual satisfaction and confidence as well as improved self-esteem.

Conclusion:
MRKH’s treatment aims the reconstruction of a neovagina with correct axis, adequate size and secretory capacity in order to restore a sexual life as healthy as possible. The choice of therapy depends on patient preparation, surgeon experience and patient / surgeon preference.

In this case, the McIndoe technique was modified with artificial dermis as it presents less functional and aesthetic morbidity than with partial skin grafting, associated with a high incidence of dyspareunia, lack of lubrication, stenosis and greater scar contraction.
Reconstructing Large Groin And Pelvic Defects: A Robust Local Option
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Background:
Free anterolateral Thigh (ALT) flaps are commonly used in head and neck, and lower limb reconstruction. Small to medium sized defects in the groin and pelvis can be reconstructed with local pedicled fasciocutaneous and myocutaneous flaps, such as the ALT and tensor fascia lata (TFL) flaps. Larger defects pose a challenge, especially if free tissue transfer is not a viable option. The combined ALT and TFL flap has been described as a free flap option for reconstructing large defects in the head and neck with good effect. We present a case series of large groin and pelvic defects reconstructed with combination TFL/ALT/Vastus lateralis(VL) pedicled flaps.

Methods:
A case note review of a consecutive series of patients with large groin and pelvic defects following ablative cancer surgery.

Results:
Utilising combined ALT/TFL/VL flaps is a robust option for reconstructing large soft tissue defects in the groin and pelvis. No complete flap loss was observed and patients did not suffer functional deficit.

Conclusion:
Combined pedicled TFL/ALT/VL flaps are a reliable and robust reconstructive option for large groin and pelvic defects. The anatomy is predictable and these flaps are a good edition to our armamentarium in dealing with defects which are potentially difficult to reconstruct.
Reconstruction Of Pelvic Exenteration Defects: A Single Institutions 10 Year Results

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Background:
Pelvic exenteration (PE) is a radical surgical procedure involving en bloc resection of pelvic organs. Anterior PE removes bladder and internal reproductive organs without gastrointestinal tract resection. Posterior PE involves internal reproductive organ and rectosigmoid removal, but sparing anterior vagina. Total PE removes all organs from the pelvic cavity. These resections result in complex defects requiring reconstructions of the pelvic floor and vagina.

Methods:
Retrospective chart review was conducted for patients that underwent PE in Tampere University Hospital between January 1st, 2006 and June 30th, 2016. Data of patient demographics, operative details, complications, local recurrence and overall survival was collected.

Results:
38 women, with mean age 59 (range 30 to 78) years, underwent 39 PE surgeries during the study period. There were 26 total, 11 posterior and 2 anterior PE. One patient underwent first anterior PE and after local recurrence a posterior PE. Pelvic defects were reconstructed using bilateral TMG flap (16 cases), unilateral TMG flap (9 cases) and one TRAM flap. 13 PE did not undergo a flap reconstruction. 12 of 26 patients that underwent total PE had vaginal reconstruction. Bilateral TMG flap was used for all vaginal reconstructions. 28 patients (72%) had a total of 49 complications. Most common complications were infection (44%), wound dehiscence (33%), ileus/intestinal occlusion (10%), enteral fistula or anastomotic leakage (8%) and decubital ulcer (8%). Of the 42 flaps, there was one (2%) partial flap loss and no total flap losses. Overall survival at one year was 88% vs. 42%, at two years 74% vs. 23% and at five years 58% vs. 8% in patients with negative vs. positive resection margins, respectively.

Discussion:
PE is a procedure prone to complications and lengthy recovery with majority of the patients requiring flap reconstruction. TMG flap is suitable for both pelvic floor and vaginal reconstruction, with low flap-related complication rate. Negative resection margins are paramount for patient survival.
Vascular Anomalies and Congenital Defects
Vascular Malformations And Hemangiomas: Our Ten-Year Institutional Management Algorithm.

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Purpose:
Vascular anomalies are among the most common congenital and neonatal dysmorphogenesis, which are separated into hemangiomas and vascular malformations. They can occur in various areas through the body. The true mechanism of pathogenesis is still unclear. Various treatment methods have been reported and there are still controversies concerning the treatment protocol. We present our experience and evaluate our results in the cases of vascular anomalies that were documented and treated during the last 10(ten) years.

Materials and Methods:
A total of 15(fifteen) pediatric patients are examined every month since 2008. Treatment depends on child's symptoms, age, general health and how severe the condition is. Treatment for hemangiomas depends on their size, location, how severe they are and involves the "wait and see" method, Nd-YAG laser, use of propranolol and surgical therapy. Treatment for vascular malformations depends on the type of malformation, the flow(low or high) and if the child has a large or life-threatening growth, he or she may need a team of doctors and a combination of treatments. These may include Nd-YAG laser therapy, intralesional bleomycin injection and excision-reconstruction.

Results and Conclusion:
Our algorithm approach has helped us to manage vascular anomalies considering their pathology, extent, aesthetic and functional consequences. We propose our algorithm to all professionals who encounter these conditions in their daily clinical practice.