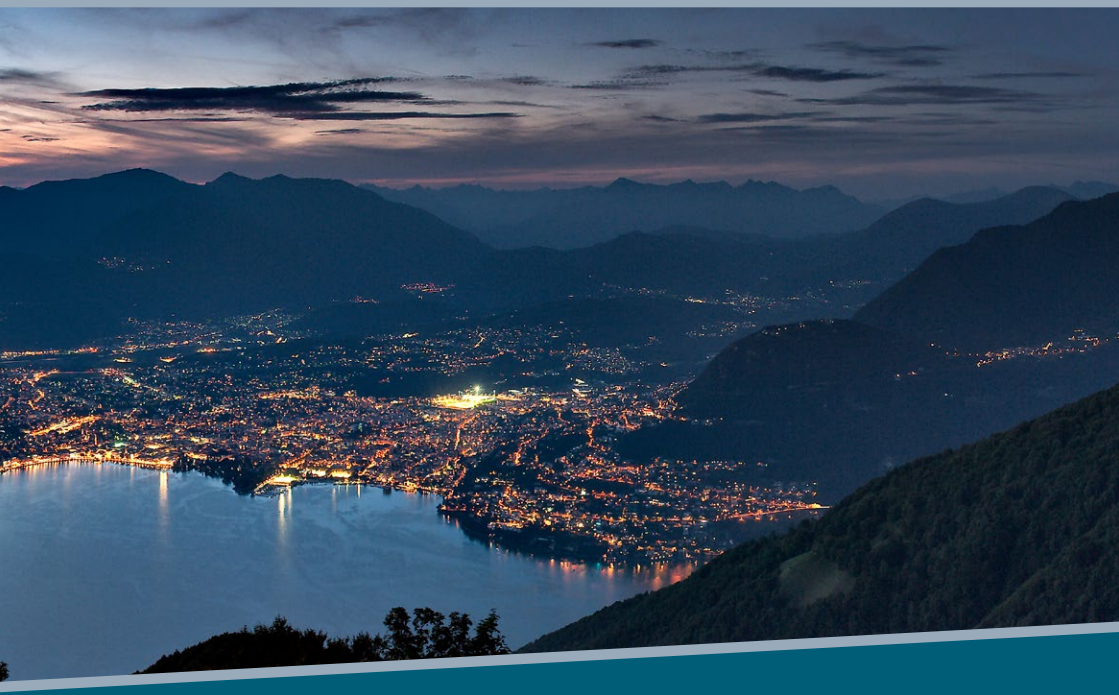
SWISS PLASTIC SURGERY // SWISS AESTHETIC SURGERY



ABSTRACT BOOK

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Free Communications

Vascularized osteocutaneous fibula flap for clavicular reconstruction: A reliable option for complex bony defects

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Objective
Clavicular defects following tumor resection, infection, trauma, or other causes present a rare but complex reconstructive challenge. While traditionally managed conservatively or with non-vascularized grafts, the vascularized osteocutaneous free fibula flap (FFF) offers a promising alternative that enables simultaneous bony and soft tissue reconstruction. This study aims to present our experience and long-term outcomes with FFFs for clavicular reconstruction over a 18-year period.

Methods
We conducted a retrospective single center analysis of all patients who underwent clavicular reconstruction using a free osteocutaneous fibula flap between 2008 and 2025. Indications included tumor resection (benign and malignant - sarcoma), infections or trauma. Data was collected on patient demographics and surgical details as well as outcomes such as flap survival, bony union, shoulder function, pain, and donor site morbidity.

Results
Five patients underwent reconstructions of the clavicle with FFFs. All flaps survived without the need for revision or salvage procedures. Radiological follow-up confirmed bony union in all cases. All but one patient demonstrated excellent shoulder range of motion with minimal restriction, although some reported mild discomfort during sports or heavy activity. One patient suffered from long-term sequelae at the donor as well as recipient site. At the donor site chronic postoperative neuropathic pain with motor deficits developed (Clavien-Dindo grade II) while at the recipient site there was persistent pain and functional impairment treated with resection of the acromioclavicular hook (Clavien-Dindo grade III). While these complications were not related to osseous or soft tissue healing, it does point out the need for careful patient selection for this complex procedure. In the remaining cases, no early or late complications occurred at the donor or recipient sites.

Conclusions
The vascularized osteocutaneous fibula flap is a reliable and effective option for clavicular reconstruction, offering stable bony union, durable soft tissue coverage, and excellent long-term functional results. With proper patient selection, it represents a valuable reconstructive alternative with reasonable donor site morbidity in cases with large and complex osteocutaneous defects of the clavicular region.

Cost burden of post-surgical complications caused by aesthetic surgery abroad: A two-center experience

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Objective
The rise of aesthetic medical tourism among Swiss residents is driven by lower costs, shorter waiting times and access to unavailable procedures. However, if complications arise, they often require costly follow-up care, typically provided after the patient's return. This results in a financial burden on our Swiss healthcare system, as insurance providers are legally obligated to cover these costs. The study aims at analyzing both the financial impact on the Swiss healthcare system and the factors driving patients to seek aesthetic surgery abroad.

Methods
This retrospective study examined the treatment costs of complications following aesthetic surgery performed abroad, in patients treated at the Departments of Plastic Surgery in Lugano (EOC) and Frauenfeld/Münsterlingen (STGAG) from 2020 to 2024. Additionally, patient motivations were explored through phone interviews. Only patients who developed complications within 3 years, or capsular contracture within 1 year, were included.

Results
Out of 275 identified patients, 32 were included. Nearly 1 patient per month required hospitalization through the emergency department (72%) or the outpatient clinic (28%). These patients had undergone 53 aesthetic procedures across 10 different countries. 56% were Swiss citizens, while 44% foreign nationals; among the latter group, 43% had surgery performed in their country of origin. Complications included infections (50%), wound dehiscence (22%), hematomas (9%), and others (19%). 39 surgeries were performed to address these complications. The reasons for seeking surgery abroad were: lower cost (42%), social media/friends (33%), residence abroad (17%) and others (8%). 42% of patients had consulted a Swiss plastic surgeon prior to undergoing surgery abroad. The treatment costs amounted to CHF 612'618, while reimbursements CHF 753'644, resulting in a net revenue of CHF 141'026 and a mean gain per patient of CHF 4'407.

Conclusions
This study highlights the significant financial burden associated with aesthetic surgery tourism. Understanding patient motivations and the economic impact of these complications is key to developing strategies to mitigate financial risks posed by this trend. Under swiss legislation, all costs related to the management of such complications are reimbursed by the healthcare system—and thus borne by the citizens —whereas other countries often exclude these costs from coverage.

Antibiotic prophylaxis in plastic surgery: A Swiss cross-sectional survey of practice variation and uncertainty among surgeons and infectious disease specialists

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Objective
Perioperative antibiotic prophylaxis is widely used in plastic surgery to prevent surgical site infections (SSIs). However, the variety of procedures and heterogeneity of patients make it difficult to establish uniform guidelines. As evidence-based recommendations remain limited, we investigated current practices among plastic surgeons and infectious disease (ID) specialists in Switzerland, focusing on plastic surgery procedures to identify areas of uncertainty and divergence in decision-making.

Methods
In a multicentric cross-sectional survey conducted in early 2025, plastic surgeons and ID specialists were invited to complete an anonymous, case-based questionnaire. Eight scenarios specific to plastic surgery were evaluated, including elective breast surgery, implant-based and autologous breast reconstruction, liposuction, lipofilling, abdominoplasty without drainage, and free flap coverage of extremity wounds after contaminated trauma. Respondents reported their routine practices regarding indication, timing, antibiotic selection, route of administration, and duration. Descriptive and comparative analyses were conducted to identify areas of high uncertainty.

Results
A total of 101 physicians responded, including 39 plastic surgeons (38.6%) and 26 ID specialists (25.7%), with a median experience of 12 years (IQR 5–21). Plastic surgeons were more likely to indicate prophylaxis across all surgeries (59.2% vs. 43.7%, p = 0.0002). Highest uncertainty was seen for elective breast surgery and abdominoplasty (47.7% and 49.2%). Discrepancies between specialties were most evident for lipofilling (35.9% vs. 7.7%, p = 0.02) and liposuction (35.9% vs. 15.4%, p = 0.09). Consensus was higher for free flaps (87.2% vs. 76.9%) and implant-based reconstruction (89.7% vs. 96.2%). Plastic surgeons more often extended prophylaxis beyond 24h (33.0% vs. 21.9%, p = 0.02), particularly in the presence of diabetes (20%), immunosuppression (22.7%), or drainages (9.3%), while no ID specialist extended duration for these factors.

Conclusions
This survey highlights the variability in the approach to antibiotic prophylaxis between surgeons and ID specialists. It also reveals high uncertainty regarding indication, choice, and duration across common plastic surgery procedures, underscoring the need for more evidence and interdisciplinary collaboration to develop procedure-specific, evidence-based recommendations.

Prepectoral breast reconstruction: Total ADM-coverage of implants versus polyurethane-coated implants without ADM. Early and long-term complications and outcomes

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Objective
Immediate prepectoral breast reconstruction (IPBR) is an increasingly popular alternative to subpectoral techniques, aiming to reduce complications and improve aesthetics after mastectomy. Two main strategies are used: total implant coverage with acellular dermal matrix (ADM) and polyurethane (PU)-coated implants without ADM. Direct comparative data on complications and long-term outcomes remain limited. This study compares clinical and aesthetic results of these two techniques, also considering the impact of postmastectomy radiotherapy.

Methods
A retrospective analysis was conducted on 97 patients (135 breasts) who underwent IPBR between April 2015 and October 2019. Patients were divided into two groups: ADM-covered textured implants and PU-coated implants without ADM. Early (<4 weeks), intermediate (>4 weeks), and long-term (≥1 year) complications were recorded. Aesthetic results were assessed using a blinded three-point Likert scale by two plastic surgeons. Statistical analysis adjusted for confounding variables, including age, BMI, and implant or mastectomy volume.

Results
PU-coated implants in prepectoral reconstruction are associated with fewer complications and improved aesthetic outcomes compared to ADM-covered implants. ADM offers some advantages in masking rippling but at the cost of higher seroma, infection, and capsular contracture rates. Surgical approach should be tailored to individual patient anatomy and needs. Study limitations include its retrospective nature and single-center design. Larger prospective studies are needed to further guide technique selection and optimize outcomes.

Conclusions
This study confirms that PU-coated implants in IPBR provide a lower complication rate and improved long-term outcomes compared to ADM-covered implants, particularly concerning seroma, infection, and capsular contracture. However, ADM remains beneficial for masking rippling and contour deformities, especially in patients with thin skin flaps. The choice between techniques should be individualized based on patient anatomy and clinical context. Study limitations include its retrospective, single-center design and the relatively small sample size. Further prospective, multicenter research is warranted to refine patient selection and optimize outcomes. Ultimately, the prevention and management of seroma remain key to successful long-term reconstruction.

Heat preconditioning of nanofat does not improve its vascularization properties

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Objective
Heat preconditioning has shown to promote nutritive perfusion and eventually tissue survival in flap and breast surgery, as well as in autologous fat grafting. However, its impact on the vascularization properties of nanofat, a mechanically processed fat derivative with a strong regenerative potential, has not been investigated so far.

Methods
Nanofat was generated from the inguinal fat of green fluorescent protein (GFP)-positive C57BL/6J donor mice and exposed to 43 °C for 1 h. Subsequently, the effects of this heat stress on cell viability and the expression of heat shock proteins (HSPs) and angiogenesis-related factors was assessed ex vivo by means of flow cytometry, immunohistochemistry, qRT-PCR and proteome profiler arrays. Non-preconditioned nanofat served as control. Moreover, dermal substitutes seeded with either heat-preconditioned or non-preconditioned control nanofat were implanted into dorsal skinfold chambers of wild-type C57BL/6J recipient mice to study their vascularization and tissue integration in vivo by means of repeated intravital fluorescence microscopy, histology, and immunohistochemistry. All values were expressed as means ± SEM. Statistical significance was accepted for $p<0.05$.

Results
Heat preconditioning upregulated the expression of HSPs in nanofat without affecting cell viability. However, it resulted in the downregulation of many pro-angiogenic factors and the increased expression of anti-angiogenic factors, indicating a shift towards an anti-angiogenic phenotype. Accordingly, implanted dermal substitutes seeded with heat-preconditioned nanofat exhibited a reduced vascularization and their integration into the host tissue was not improved when compared to controls.

Conclusions
Contrary to its beneficial effects in other tissue preconditioning contexts and despite the upregulation of cell-protective HSPs, heat exposure of nanofat at 43 °C for 1 h induces an anti-angiogenic profile and reduces the ability of nanofat to support vascularization and integration of dermal substitutes. These findings indicate that single ex vivo heat application cannot be recommended to enhance the vascularization capacity of nanofat.

A new flap selection algorithm in head and neck reconstruction

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Objective
The primary goal in the treatment of head and neck soft tissue defect is the restoration of function. However, even in microsurgery, the aesthetic outcome of scars has gained increasing importance. This work presents an innovative reconstructive algorithm based on flaps that are not commonly utilised in head and neck reconstruction.

Methods
We report the clinical experience gained from 2021 to 2024 at the cantonal hospitals of Lucerne and Winterthur in Switzerland. The flaps used were primarily SCIP/SIEA and PAP flaps. Advantages and disadvantages of these flaps are discussed in comparison with more commonly used options.

Results
SCIP/SIEA and PAP flaps proved suitable for small to medium-sized defects, with excellent donor site acceptance by patients. For large defects, the latissimus dorsi flap remained the preferred choice in our experience.

Conclusions
SCIP/SIEA and PAP flaps proved suitable for small to medium-sized defects, with excellent donor site acceptance by patients. For large defects, the latissimus dorsi flap remained the preferred choice in our experience.

Repeated autologous fat grafting significantly increases mastectomy flap thickness in pre-pectoral multi-stage composite expander-to-implant breast reconstruction: Exploring the concept of a reverse expansion

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Objective
Combining autologous fat grafting with implant placement is meant to improve the quality of implant-based breast reconstruction. The present study explores the concept of multi-stage composite breast reconstruction with repeated sessions of autologous fat grafting to increase mastectomy flap thickness and provide better pre-pectoral implant coverage.

Methods
Twenty-five consecutive patients underwent bilateral multi-stage composite expander-to-implant breast reconstruction and reverse expansion from August 2020 to April 2024. Subcutaneous thickness of the mastectomy flap was evaluated in predefined regions of interests of the breast on standardized MR images at two timepoints (before the first fat grafting session, with the tissue expander fully inflated, and 3 months after implant placement). Furthermore, the incidence of complications requiring surgery and implant-related complications were evaluated. All values are expressed as mean ± standard deviation, accepting statistical significance for a p-value < 0.05.

Results
Patients underwent an average of 2.5 ± 0.6 fat grafting sessions, with a fat injection volume of 170 ± 60 mL per breast per session. The mean duration of the reconstructive process from mastectomy to final implant placement was 12 ± 5 months and the mean follow-up was 17 ± 8 months. The overall thickness of both breasts amounted to 190% of baseline thickness and was significantly higher in the upper breast quadrants than in the lower quadrants ($p < 0.05$). Tissue thickness increase correlated well with the number of fat grafting sessions and was independent of the patient's weight gain. Complications requiring surgery occurred in eight breasts during the reconstruction, with iatrogenic expander puncture being the most frequent (three cases, 6%). During follow-up, only one implant-related complication was observed (one case of bilateral rippling, 4%). No breast animation or symptomatic capsular contracture were observed.

Conclusions
Multi-stage pre-pectoral composite expander-to-implant breast reconstruction using autologous fat grafting is an effective concept for breast reconstruction. Despite the need for multiple surgeries, the significant increase in subcutaneous tissue thickness, resulting in better soft tissue coverage, compensates for the longer reconstructive process.

Postoperative complications in breast reconstruction with deep inferior epigastric perforator flap: Looking for evidence

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Objective
This study investigated patient- and surgery-related risk factors of postoperative complications in microvascular breast reconstruction with deep inferior epigastric perforator (DIEP) flaps

Methods
We reviewed the retrospective charts of 212 patients who underwent 250 DIEP flap breast reconstructions between 2018 and 2023. Patient-related factors included demographic characteristics, comorbidities, radiation therapy, and chemotherapy. Surgery-related factors included reconstructive timing and laterality, perforator choice, venous anastomosis technique, and postoperative acetylsalicylic acid (ASA). Early flap complications (first postoperative week) included flap loss, venous congestion, and hematoma. Late flap complications (after the first postoperative week) included wound dehiscence, skin necrosis, fat necrosis, and infection. Donor-site complications (all late) included wound dehiscence, skin necrosis, infection, seroma, and bulging.

Results
The overall complication rate was 31.1%, and flap loss was 1.9%. Obesity and diabetes were significantly associated with late flap complications and donor-site complications (dehiscence, infection, fat necrosis, and seroma). Radiation therapy showed trends toward greater total flap loss, take back, and flap skin necrosis. Age, hypertension, smoking, and chemotherapy were not associated with higher complications. Harvesting multiple versus a single perforator was associated with significantly more donor-site complications. There were significantly more early flap complications and a trend toward more bulging with lateral versus medial row perforators. Venous anastomosis with a coupler versus a suture showed significantly lower flap complications. Reconstruction timing, laterality, vein number, and ASA use did not impact outcomes.

Conclusions
Complications increased by obesity, diabetes, radiation therapy, and the use of multiple and lateral row perforators, as well as sutured venous anastomoses. Conversely, outcomes were not affected by age, hypertension, chemotherapy, reconstructive laterality and timing, vein number, coupler size, or postoperative ASA use.

Enhancing patient experience during postoperative bed rest following lower extremity free flap reconstruction: A retrospective survey study

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Objective
Postoperative bed rest and dangling protocols remain a cornerstone following lower extremity free flap reconstruction but often impose a substantial burden on patients. Beyond physical immobility, individuals may experience emotional distress, limited autonomy, and insufficient support. To date, few studies have explored patient perspectives on this crucial phase of recovery. We aimed to assess subjective experiences, identify unmet needs, and evaluate preferences for supportive and activating interventions during imposed immobilization.

Methods
A retrospective survey was conducted among patients who had undergone lower extremity free flap reconstruction. The survey assessed domains such as pain, emotional well-being, psychological symptoms, perceived support, and preferences for interventions during the immobilization period. Descriptive statistics and inferential analyses, including Chi² tests, Fisher's exact tests, and logistic and linear regression models, were used to examine associations between PROMs and clinical or psychosocial factors.

Results
Eighty-six patients provided complete datasets. Flap reconstruction was performed due to acute trauma (32.6%), tumor (25.6%), trauma sequelae (22.1%), or infection (19.8%). Overall, 53.5% reported more than 10 days of bed rest. Descriptively, 27% wished for in-bed physiotherapy, 26% for more information about the clinical course, 12% for better pain management, 11% for psychological support, 9% for entertainment options, and 8% for more social support.
Logistic regression identified in-bed physiotherapy ($p = 0.018$) and perceived information about the clinical course ($p = 0.024$) as significant predictors of willingness to engage in structured activation. These associations were confirmed by Fisher's exact test ($p = 0.019$ and 0.035). A linear regression model revealed that perceived loneliness ($p < 0.001$) significantly predicted psychological burden during immobilization ($p = 0.002$).

Conclusions
Postoperative immobilization imposes not only physical challenges but also considerable psychosocial stressors. Patients express a clear demand for improved information, structured activation, and emotional support. These findings highlight the need to integrate multimodal, patient-centred interventions into recovery protocols. The goal should be to address both body and mind to optimize the patient experience and rehabilitation outcomes.

Vascularized lymph node transfer versus lymphaticovenous anastomosis in chronic lymphedema: Comparing the effectiveness of microsurgical treatment over time in upper versus lower extremities

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Objective
In the current era of personalized medicine, the development of efficient treatment algorithms is crucial to optimize outcomes and minimize complications. Although there is growing evidence for the effectiveness of lymphaticovenous anastomoses (LVA) and vascularized lymph node transfer (VLNT), little is known about the differences between upper and lower extremity lymphedema. Accordingly, the aim of this study was to compare their effectiveness in a large cohort.

Methods
A prospectively managed database was used to identify patients treated by microsurgical reconstruction for unilateral chronic lymphedema of the upper or lower extremity between Jan 2015 and Dec 2023. Patient-specific variables, including circumferential measurements at predefined anatomical landmarks on both the affected and unaffected limbs, were recorded preoperatively and at scheduled intervals between three and twenty-four months postoperatively for comparative analysis.

Results
Of the 265 patients meeting inclusion criteria, 43.0% suffered from upper and 57% from lower extremity lymphedema. Treatment approaches differed by extremity, with LVA being more frequent (81.5% vs. 38%) employed in the lower and VLNT predominating (62% vs. 18.5%) in the upper extremity. Both LVA and VLNT significantly improved outcomes in both extremities with comparable results after 24 months. Interestingly, VLNT's effectiveness gradually declined in the upper extremity but improved over time in the lower extremity. There was a low overall complication rate of 4.2 %.

Conclusions
Both LVA and VLNT show comparable results between the upper and lower extremity after 24 months with notable difference over time.

One-stage combined augmentation-mastopexy with implants

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Objective
To present a surgical technique and evaluate long-term post-operative results after a single stage augmentation-mastopexy with silicone implants.

Methods
Over 70 patients between 2023 and 2024 have undergone a single-stage augmentation-mastopexy, all performed by a single surgeon (author). The surgical technique consists of an inverted-T Mastopexy, placement of silicone implants and contouring liposuction. The post-operative evaluation took place at 6 weeks, 3, 6, and 12 months with a minim follow-up of 12 months.

Results
The medium follow up is 15 months. In 4% of patients we observed a wound dehiscence which was treated conservatively. In this cohort we did not observe a single case of infection and/or relevant hematoma. We had one case of bilateral bottoming out in a post-bariatric which was surgically revised. We also observed one case of a unilateral superficial nipple necrosis which was healed by secondary intention. All patients reported a high satisfaction rate in regards to outcomes. No case of capsular contracture was observed.

Conclusions
We present an effective and safe surgical single-stage technique for correction of breast ptosis and volume enhancement with silicon implants.

Deep plane facelift and release of the retaining ligaments to achieve a long-lasting natural result in facial rejuvenation

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Objective

The deep plane/sub-SMAS facelift has emerged as a leading technique in facial rejuvenation, offering more natural and long-lasting results compared to other methods. Central to its effectiveness is the release of key facial retaining ligaments, allowing for comprehensive repositioning of the facial soft tissues. This approach addresses not only midface ptosis but also improves the jawline and neck contour, resulting in a youthful and harmonious facial appearance.

Methods

The deep plane facelift involves dissecting beneath the superficial musculoaponeurotic system (SMAS) to release the major retaining ligaments: the zygomatic cutaneous, masseteric cutaneous, and the mandibular cutaneous retaining ligaments. In patients with jowling who desire a repositioning of the jawline, special attention is given to the mandibular cutaneous ligament, which tethers the lower face and contributes to jowl formation and loss of jawline definition with age. By carefully releasing these ligaments, the surgeon can mobilize the deep plane flap, allowing for repositioning of the midface along the zygomatic major muscle axis and maximal repositioning of the jawline tissues.

Results

We are using a High-SMAS entry to the deep plane to lift the lift midface and cheek. The skin is only dissected in a limited approach preserving the overlying skin's attachment to the SMAS. The zygomatic ligaments around the origin of zyg. maj. muscle are released which repositions the upper-cheek and midface. In the lower face the masseteric-cut. ligaments are released. To define the jaw line and the cervicomental angle a release of the mandibular cutaneous ligament is necessary. This can be combined with direct subcutaneous fat resection and anterior platysmaplasty. We describe the indications, techniques and show results after the procedure.

Conclusions

By addressing the anatomical basis of facial aging—specifically, the descent of soft tissues constrained by retaining ligaments—this technique achieves rejuvenation that is both comprehensive and natural in appearance. The release of the mandibular cutaneous ligament is particularly impactful for restoring jawline definition and correcting lower facial sagging. Compared to traditional facelifts, which often rely on skin tension and risk unnatural results, the deep plane approach provides a tension-free repositioning of deeper structures, preserving facial identity and expression.

Envelope preservation mastectomy with immediate reconstruction: My lessons learned

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Objective
Envelope preservation, like skin or nipple sparing mastectomy, followed by immediate reconstruction, has become the golden standard in patients necessitating a complete mastectomy, either in therapeutic or risk reducing intention. The main concerns in these procedures are infections, wound healing problems and skin necrosis.

Methods
Follow up / chart review

Results
Over a 10-year period, December 2014 to January 2025 I performed on 131 patients in 166 breasts, 86 nipple sparing mastectomies and 80 skin sparing mastectomies.
Reconstruction was achieved by direct to implant in 104 breasts, 45 direct to expander, 14 direct to DIEP flap and 3 direct to Latissimus dorsi flap.
Up to now, the overall complication rate is 20 out of 166 breasts including hematoma evacuation (5) revision for wound edge necrosis (4), capsulectomy and Implant replacement (3) and implant loss for infection (8).

Conclusions
All my procedures follow a standardized pre-, peri- and postoperative regime which I would like to present and discuss in my presentation.

The SCIP and SIEA flaps as the first choice in autologous breast reconstruction

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Objective
Despite its many advantages, the deep inferior epigastric artery perforator (DIEP) flap requires fascial incision and intramuscular dissection, which can lead to postoperative pain and weakening of the abdominal wall. The superficial inferior epigastric artery (SIEA) flap offers an alternative to avoid these complications but is often considered unreliable due to its variable anatomy. In this study, we share our experience with autologous breast reconstruction using either the superficial branch of the superficial circumflex iliac artery (SCIA-SB) or the SIEA as the sole flap pedicle.

Methods
Since January 2022, we have performed autologous breast reconstruction using abdominal flaps based on subcutaneous arteries (SIEA or the "superficial branch" of the SCIA) instead of the DIEP flap. A total of 22 patients underwent breast reconstruction surgery (2 bilateral and 20 unilateral) at our institution, with 18 patients receiving SCIA-SB flaps and 6 SIEA flaps. Preoperatively, all patients underwent colour-coded duplex sonography (CCDS), and the flap design was subsequently tailored based on these findings. Intraoperative and postoperative flap perfusion were assessed using indocyanine green angiography (ICGA).

Results
One of the 24 flaps was lost due to arterial insufficiency. Complications requiring additional surgery included partial flap necrosis (3 patients), mastectomy skin necrosis (3 patients), donor site dehiscence, and infection (1 patient). Minor complications treated conservatively, including seroma, wound dehiscence, and minor infection, were observed in 10 patients.

Conclusions
Based on our experience, both the SCIA-SB and SIEA flaps can be effectively used as first-choice pedicles for autologous breast reconstruction, provided that the abdominal flap design is adapted to include their functional angiosomes.

Effectivity of peer-assisted learning in training of basic surgical skills for medical students: A multicenter study in Switzerland

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Objective
Acquiring basic surgical skills is a critical component of a physician's training, yet many medical students graduate with insufficient or no competencies in suturing. This study investigated the effectiveness of peer-assisted learning (PAL) on suturing skill progression and its influence on students' engagement with surgery.

Methods
Performance and completed self-assessments at the beginning and end of the program. Videos were evaluated by surgeons using the Objective Structured Assessment of Technical Skills (OSATS) scale, ranging from 1 to 5 points. Statistical analyses were performed using Stata, and a p-value of less than 0.05 was considered statistically significant. Data were analyzed using paired and one-sample t-tests, as well as multiple linear regression.

Results
A total of 160 medical students (mean age: 24.5 ± 2.4 years; 59% women) completed the study. Participants demonstrated significant skill improvement across all evaluated domains after the suturing course. With an average progression of 0.850 points on a 5-point scale ($t = 11.4$, $p < 0.0001$), the greatest improvement was observed in instrument handling (average progression: 1.020, $t = 11.4$, $p < 0.0001$), while the smallest improvement was noted in tissue handling (0.519, $t = 6.9$, $p < 0.0001$). On multivariable analysis, progression was positively associated with age (coefficient = 0.11; 95% CI: [0.009; 0.214], $p = 0.033$) and perceived competence in suturing (coefficient = 0.29; 95% CI: [0.049; 0.538], $p = 0.020$). However, prior attendance at a suturing course (coefficient = -0.465; 95% CI: [-0.923; -0.007], $p = 0.047$) and self-reported perception of improvement (coefficient = -0.369; 95% CI: [-0.701; -0.037], $p = 0.030$) were both negatively associated with progression.

Conclusions
Peer-assisted learning is an effective approach for teaching basic suturing skills to medical students, demonstrating measurable improvements in technical performance following a 6-hour suturing course.

Pilot study on Artifical Intelligence image analysis for lower-limb reconstruction: Assessing ChatGPT-4`s recommendations in comparison to board-certified plastic surgeons and resident physicians

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Objective
This study aimed to assess the performance of ChatGPT-4 in analyzing clinical images of lower-limb defects and interpreting complex reconstructive case scenarios. Its recommendations were compared to those of board-certified plastic surgeons and resident physicians.

Methods
A cross-sectional survey was conducted across Switzerland, Germany, and Austria. A total of 52 participants, comprising board-certified plastic surgeons and plastic surgery residents, were presented with a series of fictitious patient profiles including images of lower-leg soft tissue defects. Participants were asked to select the most appropriate reconstruction technique for each case. The questionnaire featured scenarios of varying complexity, and response options did not always include the most obvious solution. ChatGPT-4 completed the same questionnaire under identical conditions. A chi-squared test of independence was used to examine the association between response options (A, B, C, D) and rater group (board-certified surgeons, residents, ChatGPT-4).

Results
ChatGPT-4 demonstrated the ability to evaluate various reconstruction methods but struggled to determine the optimal solution based on the available information in visual and written forms, when the most obvious method was not available. Inter-group rater associations showed significant overall test results ($p < 0.001$), with high agreement among board-certified surgeons. ChatGPT-4's responses were less aligned with expert consensus compared to human raters.

Conclusions
The findings indicate that while ChatGPT-4 possesses foundational competence in surgical decision-making, it lacks the contextual and clinical depth necessary for reliable patient-specific planning. Artificial intelligence may serve as a valuable adjunct in reconstructive surgery, but current models do not match the expertise of trained specialists and should be regarded as supportive tools rather than replacements.

Factors predicting soft tissue reconstruction in periprosthetic knee joint infection: A retrospective binary logistic regressional analysis

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Objective
Periprosthetic joint infection (PJI) after total knee arthroplasty (TKA) is a feared complication which can result in concomitant soft tissue defects including extensor apparatus deficiency. Here, an interdisciplinary orthoplastic treatment concept is mandatory. Soft tissue reconstruction (STR) is essential not only to prevent reinfection but also to provide a well-vascularized envelope to deliver antibiotics and nutrients to the site of infection and to preserve joint function. This study aimed to identify predictors for the need of STR in PJI after TKA.

Methods
A retrospective cohort analysis on adult PJI patients after TKA over a 23-year period (2000 – 2023) in two tertiary referral hospitals in Switzerland was performed. Patients with infections in more than one joint or with a follow-up shorter than 12 months were excluded. Descriptive statistics were used to characterize the cohort. Binary logistic regression was used to identify predictors for STR.

Results
A total of 202 patients with PJI after TKA were identified. 74 patients were excluded due to incomplete follow-up of ≥ 12 months. 128 patients were included, of which 27 underwent STR. The included patients were characterized by high comorbidity rates. The most common pathogens were coagulase-negative Staphylococci and Staphylococcus aureus. 20/128 patients (9/27 patients needing STR) showed polymicrobial infection. Independent predictors for STR included a higher number of previous surgeries on the affected knee (OR = 2.16, 95% CI: 1.56–3.00, $p < 0.001$) and presence of polymicrobial infection (OR = 6.90, 95% CI: 1.54–30.89, $p = 0.012$). The model demonstrated a strong performance with an AUC (Area Under the Curve) of 0.89.

Conclusions
Patients with PJI after TKA present with significant comorbidities. Polymicrobial infections and multiple prior surgeries are strong predictors for soft tissue reconstruction. These findings underline the importance of early interdisciplinary orthoplastic treatment management.

First experience from 200 cases with a new breast tissue expander for multi-stage pre-pectoral breast reconstruction after mastectomy

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Objective

Breast cancer is the most common cancer worldwide, and mastectomy rates are increasing. Tissue expander-based breast reconstruction is used when direct-to-implant methods are neither suitable nor desired. Recently, a novel magnetic resonance imaging-compatible breast tissue expander has been introduced. This study aims to evaluate its clinical use in pre-pectoral breast reconstruction and its complication profile.

Methods

This monocentric prospective cohort study included women undergoing expander-based breast reconstruction after mastectomy with the new tissue expander between August 2020 and October 2024. All expanders were placed in a pre-pectoral plane with optional use of acellular dermal matrices in selected cases of very thin mastectomy flaps to provide additional thickness. Demographic data, comorbidities, and surgical details were collected. Initial expander filling was guided by intraoperative indocyanine green fluorescence imaging of the mastectomy flap. Fixation of the non-adhering expander was performed with non-absorbable sutures or semi-absorbable mesh strips at the tabs' sites to minimize rotation and/or flipping. Complications were classified as tissue expander-independent (hematoma, seroma, infection, wound dehiscence, and partial mastectomy flap necrosis) or tissue expander-dependent (rotation/flipping and iatrogenic rupture).

Results

A total of 200 tissue expanders were implanted in 146 patients (92 unilateral, 54 bilateral). Major complications requiring expander replacement included infection (3.0%), partial necrosis of the mastectomy flap (2.5%), wound dehiscence (1.0%), hematoma (1.0%), and seroma (0.5%). Tissue expander rotation and/or flipping, as well as iatrogenic rupture, occurred in 2.0% and 3.5% of all cases respectively. Definitive removal was required in 7% of patients, mainly due to mastectomy flap necrosis and wound dehiscence with or without expander exposure (3.0%), as well as infection (2.0%).

Conclusions

The new breast tissue expander features a biocompatible surface that develops a thinner capsule and does not adhere to the adjacent tissues. This requires a secure fixation along the inframammary fold, particularly when placed in the pre-pectoral plane, since the pectoralis muscle does not act as a cranial stabilizer of the device. This eventually leads to a low complication rate and promising short-term results.

BIA-ALCL in aesthetic and reconstructive breast surgery: Patients' preferences after implant removal

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Objective

Breast Implant-Associated Anaplastic Large Cell Lymphoma (BIA-ALCL) is a rare subtype of non-Hodgkin T-cell lymphoma that arises within the fibrous capsule surrounding breast implants, predominantly those with textured surfaces. It typically presents as a late-onset periprosthetic seroma but may also manifest as a palpable mass, capsular contracture, or skin changes. Diagnosis is confirmed by cytology of periprosthetic fluid and immunohistochemistry (CD30+, ALK–). Currently, national data do not report on surgical decision-making or reconstructive outcomes following diagnosis.

Methods

A retrospective analysis was conducted on all confirmed cases of BIA-ALCL diagnosed at our centre from 2020-2025. Collected data included patient demographics, implant type, indication, anatomical placement, clinical presentation and post-diagnosis reconstructive strategies. Findings were compared with national data reported by Swissmedic from 2012-2024.

Results

A total of five patients were diagnosed with BIA-ALCL in the study period, accounting for 21.7% of recorded cases from Swissmedic. The mean age at diagnosis was 56 years, with a median interval of 9 years between implantation and diagnosis. The implant brands included Allergan (n=3), McGhan (n=1) and Sebbin (n=1). Two patients had undergone implant-based reconstruction following breast cancer, while three had aesthetic breast augmentation. Implants were placed subpectorally (n=4) and epipectorally (n=1). Clinical presentation consisted of late-onset periprosthetic seroma in 80%, and erythema with a palpable mass in 20% of cases. All patients exhibited capsular contracture. Reconstructive procedures included implant-based re-augmentation (n=3), periareolar mastopexy (n=1), autologous reconstruction with secondary DIEP flap (n=1) and secondary corrections, i.e. lipofilling (n=2). Notably, two patients underwent implant-based re-augmentation despite prior knowledge of their BIA-ALCL diagnosis.

Conclusions

This single-centre experience is consistent with national Swiss data and reinforces key risk factors for BIA-ALCL. Reconstruction is feasible and should be individualised based on patient preferences and clinical context. Our findings demonstrate that post-explantation decisions vary widely. Ongoing national surveillance, patient education and surgeon awareness are essential to ensure early detection and optimal, patient-centred management of BIA-ALCL.

Inner bra technique with P4HB scaffold for enhanced tissue support

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Objective

An increasing number of patients are inquiring about the Inner Bra technique during consultation, particularly in cases where tissue stability is a concern. These include mastopexy, breast reduction, and in some cases implant revision surgeries, where long-term results can be compromised by poor tissue quality. To address this issue, we offer the Inner Bra technique using a P4HB scaffold which provides internal support and reinforces soft tissues. GalaFLEX is a resorbable mesh made of poly-4-hydroxybutyrate (P4HB), a biocompatible polymer that is gradually absorbed by the body over 18 to 24 months. As it resorbs, it is replaced by a 2 to 3 mm thick layer of collagen-rich tissue, which retains mechanical strength and contributes to long-term stability. In this presentation we want to share our experience with the GalaFLEX scaffold und show how we use it.

Methods

We employ a tension-free "hammock" technique, designed to support the lower pole of the breast without overcorrection. This method provides natural-looking results while avoiding complications associated with overly high fixation of tissue or implants, such as distortion or asymmetry. Pictures are taken präoperativly, 3 month postop and 1 year postoperativ.

Results

This technique has shown to:

- Improve long-term stability in the lower breast pole
- Provide better control of the implant pocket in revision cases
- Offer enhanced tissue support in patients with low-quality soft tissue
- Reduce the risk of bottoming out and recurrent ptosis

Conclusions

The Inner Bra Technique with P4HB scaffold is a valuable option for patients seeking durable, aesthetically pleasing outcomes, especially in challenging or recurrent cases

Extended VRAM flap for lower truncal reconstruction: A case series and technical considerations

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Objective

We report our clinical experience using the extended vertical rectus abdominis myocutaneous (eVRAM) flap for reconstruction of complex suprapubic and inguinal defects in three patients. These defects resulted from extensive oncologic resections or complications such as wound dehiscence in previously irradiated fields, and posed significant reconstructive challenges due to their size, location, and compromised tissue quality. In these cases, conventional options, including standard VRAM flaps, were insufficient in either reach or volume to achieve durable coverage.

Methods

A single surgeon's series of eVRAM flaps is presented and details to the perioperative and postoperative course as well as technical considerations are provided. The eVRAM flap was selected for its superior reach and volume compared to the conventional VRAM. The eVRAM flap, inferiorly anchored at the pubic symphysis, extends vertically to the xiphoid and obliquely from the umbilicus towards the anterior axillary line, encompassing the critical periumbilical perforator zone. This configuration enables inclusion of a long, well-perfused skin paddle and provides superior reach and volume compared to the conventional VRAM.

Results

Our clinical observations showed mean flap lengths of 35 cm, significantly surpassing traditional designs. Flap widths ranged from 8–10 cm, allowing for tension-free primary closure. These dimensions supported the reliable coverage of wide suprapubic and inguinal wounds.
In all three cases, flap perfusion remained uncompromised, with no total losses. Minor complications resolved conservatively. The design enabled strategic deepithelialization to obliterate dead space and optimize inset.

Conclusions

The eVRAM flap offered reliable coverage with excellent perfusion, even in previously irradiated zones, and provided sufficient bulk to fill dead space, while its extended reach allowed rotation and inset into extended defect territories without tension or pedicle compromise. These preliminary results underscore the value of the eVRAM flap as a powerful tool for central lower abdominal and perineal reconstruction, especially when standard VRAM configurations are inadequate. This technique warrants further study in larger cohorts and may represent an important refinement in the reconstructive armamentarium for oncologic and post-radiation defects.

Alternative or modified donor sites in functional head and neck reconstruction

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Objective
Head and neck cancers (HNC) are among the most prevalent malignancies globally, with an incidence of 890,000 cases and 450,000 deaths annually. Recent advancements have improved survival rates from 50% to 70%, resulting in an increasing population of survivors with a demand for enhanced functional and aesthetic outcomes.

Methods
Microvascular free flap surgery is evolving, with new donor sites being introduced in head and neck reconstruction. These advancements not only effectively close defects but also enhance swallowing and speech functions for patients.

Results
This study presents four different donor sites employed for novel reconstruction methods, enabling tailored restorative solutions for our patients.

Conclusions
The integration of creativity and precision in microsurgery, alongside interdisciplinary collaboration, opens new opportunities for advancements in head and neck reconstruction, ultimately enhancing patient outcomes.

Soft implants for the restoration of facial movements: An in-vivo study

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Objective
Facial paralysis, characterized by the loss of facial muscle control, is a challenging condition drastically reducing a patient's ability to express his emotions and thus his quality of life. This work explores a new, less invasive approach for dynamic facial movement restoration using soft implants. Reinforced Dielectric Elastomer Actuator (rDEAs) can be placed in the paralyzed side of the face and then synchronized it to the activity of the contralateral healthy side of the face. The implants, weighting less than two grams, are implemented for acute in-vivo experiments in a rat model and controlled in real time using cuff electrodes around the sciatic nerve.

Methods
Before the surgery, the animals are anesthetized and their back fur is shaved. They are carried to the surgery table and continuously anesthetized with isoflurane using a nose cone. A lateral incision of the size of rDEA is made on the flank of the animal to prepare a subcutaneous pocket and the rDEA is placed under the skin: it is fixed to the underlying muscle tissue on one side and the dermal skin on the other side with individual surgical sutures. A laser sensor and a camera are used to monitor the displacement of the implants by using a marker placed near the neck of the rat. The implant's performance is thoroughly characterized by considering the influence of the application of gel, of fiber reinforcement, as well as any initial stretch of the implant by adapting the attachment sites. Finally, the rDEA are operated in-vivo and in real-time by placing a neural interface on a healthy nerve which sends signals to activate the implant.

Results
Primary results show a successful real-time control of the implant in an in-vivo setting using neural signals for actuation regulation. The displacement for rDEAs reach 0.78 mm for an applied voltage of 7 kVs with an increased displacement by 40 % compared to the non-reinforced actuators. The analysis of peak-to-peak amplitudes revealed consistent actuation with low variability, while comparison with baseline breathing motion confirmed the distinct contribution of the implant.

Conclusions
Acute in vivo experiments validated rDEA functionality under physiological conditions. Implanted beneath the skin of anesthetized rats, rDEAs produced measurable displacement in response to applied voltage, even against the natural resistance of skin and tissue layers.

Robotic-assisted transoral free flap inset using a mini-pharyngotomy: Technical refinements

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Objective
Robotic-assisted surgery is increasingly being used for the resection of larger pharyngeal tumors requiring free flap reconstruction. While robotic-assisted resection reduces the morbidity resulting from open surgery such as traditional transient mandibulotomy, techniques for free flap inset and pedicle positioning that respect the minimally invasive surgical access are needed.

Methods
We conducted a retrospective case series of all patients who underwent robotic-assisted pharyngeal reconstructions with the da Vinci Surgical Systems S and Xi. All procedures included a nerve- and vessel-sparing mini-pharyngotomy for minimally invasive free flap inset.

Results
From October 2017 - June 2024, a nerve- and vessel-sparing mini-pharyngotomy was used in four patients (Figure 1). Mean defect size was 23.4 ± 9.7 cm2. Mean duration of surgery was 455.5 ± 27.8 min. Surgical indications included a synovial sarcoma of the left tonsil, a squamous cell carcinoma (SCC) of the left tonsil, osteoradionecrosis following radiochemotherapy of a SCC of the nasopharynx, and chronic osteomyelitis of the cervical spine and discus after radiotherapy of a SCC of the oropharynx. All patients received coverage with a radial foreram free flap from the left arm. No flap loss occurred.

Conclusions
This is the first case series describing robotic-assisted free flap inset in head and neck reconstruction using a nerve- and vessel-sparing mini-pharyngotomy. Advantages of this surgical access include the preservation of the hypoglossal and lingual nerves, the low risk of fistula thanks to the small pharyngotomy incision, and the need for only a short pedicle to reach the neck for microvascular anastomosis.

Inpatient vs. outpatient settings for secondary procedures following breast reconstruction: A retrospective cohort analysis

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Objective
Secondary procedures such as lipofilling, scar revision, and implant exchange are common steps in the refinement phase of breast reconstruction. As healthcare systems move toward more efficient and patient-centered care models, outpatient surgery is increasingly favored. However, the evidence comparing its outcomes to inpatient care remains limited in this context. This study aimed to explore whether outpatient procedures offer comparable safety, effectiveness, and patient experience while optimizing resource use.

Methods
A retrospective analysis was conducted on 200 patients who underwent secondary procedures following mastectomy and breast reconstruction between 2021 and 2024. Patients were grouped by surgical setting: inpatient (n=100) or outpatient (n=100). Primary outcomes included operative time, length of hospital stay, complication and readmission rates, postoperative analgesia protocols, and patient-reported outcomes using the 15-item quality of recovery (QoR-15) scale. Postoperative inquiries were also recorded as a measure of follow-up burden.

Results
Outpatient procedures resulted in significantly shorter post-operative recovery times and avoided the need for overnight hospitalization. Rates of complications and readmissions were low and comparable between groups. Patient satisfaction and recovery experience, as measured by QoR-15, were similarly high in both cohorts. No significant differences were found in the volume or urgency of postoperative inquiries.

Conclusions
Outpatient secondary procedures following breast reconstruction are safe, efficient, and well-tolerated alternative to inpatient care. These findings support a broader implementation of outpatient strategies in suitable patients, enabling high-quality outcomes while reducing hospital resource demands and enhancing patient autonomy.

The SCIP–RFFF rochade: A strategic swap in donor site management

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Objective

Since its introduction by Yang et al. in 1978, the radial forearm free flap (RFFF) has become a cornerstone in reconstructive surgery—particularly in head and neck reconstruction. Due to its reliable vascular anatomy, thin pliable tissue, and ability to include skin, fascia, tendon, and bone, the RFFF remains a globally used flap for intraoral, pharyngeal, and facial soft tissue reconstruction.

However, donor site morbidity remains a drawback. Closure techniques using full- or split-thickness skin grafts, and occasionally local flaps, can lead to wound dehiscence, tendon exposure, adhesion, and hypertrophic scarring—especially in young or active patients. The conspicuous volar forearm scar is also aesthetically problematic and may hinder secondary procedures.

To address these issues, we present our experience using the superficial circumflex iliac artery perforator (SCIP) flap for donor site closure in selected high-risk patients, where conventional closure is likely to result in complications.

Methods

Between January 2020 and May 2025, six SCIP flaps were used to reconstruct RFFF donor sites. A two-team approach was employed: one team performed tumor resection and RFFF harvest, the other prepared the SCIP flap. After RFFF insetting and anastomosis, the SCIP flap was transferred to the forearm.

Results

The SCIP flap was anastomosed to the distal or proximal radial artery, or the anterior interosseous artery. One total flap loss occurred; no partial losses were noted.

All patients reported high subjective satisfaction with very good aesthetic result. No donor site morbidity or functional deficits occurred

Conclusions

Using the SCIP flap for RFFF donor site closure offers a functionally and aesthetically superior alternative—especially in young or manual working patients. The thin, inconspicuous groin flap integrates well with the forearm, and the two-team approach does not significantly prolong surgery. This technique refines donor site management in the otherwise highly versatile RFFF.

Systemic complications of silicone breast implants: Two rare cases of Autoimmune Syndrome Induced by Adjuvants (ASIA)

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Objective
To report and analyze two rare cases of systemic complications following aesthetic breast augmentation with silicone implants, highlighting the diagnostic complexity and the role of surgical revision in clinical improvement.

Methods
We present two female patients who developed rare systemic inflammatory complications after long-standing silicone breast implantation. Both patients underwent multidisciplinary management and extensive investigations following the onset of systemic symptoms.

Results
Case 1: A 42-year-old woman, that underwent breast augmentation (BA) with silicone implants (round, macro-textured, 270cc, McGhan) in 2000, progressively developed proprioceptive ataxia, generalized sensory neuropathy, and gait disturbances beginning in June 2023, refractory to immunological treatments. Investigations revealed a Sjögren-like inflammatory neuropathy associated with silicone-induced granulomas that required four months of hospitalization. After explantation in December 2024 and initiation of systemic immunomodulatory therapy, significant neurological recovery was observed, allowing her to walk independently without assistive devices.
Case 2: A 55-year-old woman, that underwent BA in 1995 (unknown brand and texture) and implant replacement for rupture in 2021 (unknown brand and texture), developed a multisystemic granulomatous reaction with eosinophilic colitis, interstitial nephritis, bilateral hearing loss, visual disturbances, and systemic myalgias, that required hospitalization for two months. Despite initial explantation in January 2022 and immunosuppressive therapy, no clinical improvement was noted. Subsequent surgical revision with "en bloc" resection of the capsule in October 2022 resulted in marked clinical improvement, allowing discontinuation of all immunosuppressive therapy by May 2023.

Conclusions
These cases underscore the potential for rare but severe systemic inflammatory syndromes associated with silicone breast implants, nowadays better known as autoimmune syndrome induced by adjuvants (ASIA). Early recognition, implant removal and "en bloc" capsulectomy are critical steps toward clinical recovery.

Nanofat promotes wound healing in skin following exposure to ionizing radiation

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Objective
Radiotherapy is a cornerstone in cancer treatment which, however, may induce symptomatic radiodermatitis of the irradiated healthy skin. This condition is characterized by chronic inflammation secondary to radiation-induced DNA damage, stem cell depletion, and dysregulated extracellular matrix remodeling, which impair wound healing promoting tissue fibrosis and disrupting the microvascular network leading to an increased risk of thrombosis and consequent hypoperfusion. Current therapeutic strategies for the management of such wounds remain limited. Nanofat, a mechanically processed autologous fat derivative rich in adipose-derived stem cells, microvascular fragments and growth factors, has shown regenerative potential in healthy skin. However, its efficacy in irradiated tissue remains unexplored.

Methods
To investigate the therapeutic potential of nanofat, full-thickness skin wounds were created in dorsal skinfold chambers of C57BL/6J mice two months after localized 20 Gy irradiation. Wounds were treated with platelet-rich plasma or with nanofat harvested from donor green fluorescence protein-expressing mice combined with platelet-rich plasma. Healing process was assessed over a 14 day-period using stereomicroscopy, intravital fluorescence microscopy, histology, and immunohistochemistry.

Results
Wounds treated with platelet-rich plasma and nanofat exhibited accelerated closure, with significantly smaller wound areas compared to controls by day 14 together with an enhanced vascularization as shown by a higher functional capillary density. Moreover, immunohistochemistry demonstrated that ~20% of microvessels and ~30% of the lymph vessels in wounds filled with platelet-rich plasma and nanofat originated from donor grafts. Additionally, wounds treated with platelet-rich plasma combined with nanofat showed a tendency towards an improved granulation tissue formation, lymphatic drainage and M2/M1 macrophage ratio.

Conclusions
These findings demonstrate the efficacy of nanofat in enhancing wound healing in irradiated tissue by promoting the formation of a solid vascular network, thereby accelerating wounds closure and improving lymphatic drainage. Therefore, platelet-rich plasma enriched with nanofat appears to be a promising strategy for the treatment of complex wounds in irradiated skin and could be of help in the management of radiation-induced complications such as lymphedema.

Single-stage arteriovenous loop for reconstruction of soft tissue defects following lower limb trauma: A case series

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Objective
Soft tissue defects of the lower limb after trauma often necessitate complex microsurgical reconstruction. Beyond the initial injury, reconstruction can be further complicated by peripheral artery disease (PAD) with atheromatosis, artery or vein occlusion or the effect of previous surgeries (1). All of those comorbidities may compromise recipient vessel quality and increase the risk of complication including thrombosis, overstretching or kinking of anastomosis. We aim to demonstrate the utility and efficacy of the single-stage AVL technique (2, 3, 4, 5, 6, 7).

Methods
At our department for plastic, reconstructive and aesthetic surgery at Kantonsspital Graubünden, we perform up to 28 microvascular reconstruction annually. Among those, we performed single-stage arteriovenous loop (AVL) technique on three patients with lower limb defects in order to flexibly plan the positioning of the loop and microvascular anastomosis. We collected data about patient history and comorbidities. This case series focuses on our surgical approach, including indications, preoperative studies and operative technique.

Results
Between 2022 and 2025, we successfully performed single-stage arteriovenous loop (AVL) reconstructions in three patients presenting with complex lower limb defects and comorbidities, including peripheral arterial disease (PAD) with diffuse atheromatosis and severe trauma. In all three cases, we performed an ALT flap. Preoperatively, each patient underwent a catheter angiography. Each patient also underwent a CT scan, requested by the traumatologist for fracture evaluation. CT imaging provided superior visualisation of atherosclerotic lesions compared to conventional angiography (8, 9). The AVL was connected to the popliteal vessels in two cases and to the posterior tibial artery in one case. The use of the AVL enabled the team to choose a plaquefree area of the donor artery and provided additional pedicle length for inset. One patient had an intraoperative intravascular thrombus requiring revision of the arterial anastomosis.

Conclusions
Single-Stage Arteriovenous Loop is a reliable and safe option in complex microsurgical reconstruction of the lower extremity by patient with poor vessel quality.

Morphometric changes after superomedial pedicle wise-pattern reduction mammoplasty: What do we plan and where do we end up?

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Objective
Superomedial pedicle-based reduction mammoplasty using Wise pattern skin resection is a widely accepted technique for breast reduction. However, data on long-term morphometric changes—such as nipple position shift and lower pole expansion—remain limited. This study evaluates postoperative morphometric changes and their predictors at 3, 6, and 12 months after surgery, compared to intraoperative planning.

Methods
A retrospective review of 100 female patients (≥17 years) who underwent primary bilateral reduction mammoplasty with a superomedial pedicle and Wise pattern skin resection was conducted. Pre- and postoperative data were analyzed, including demographics, comorbidities, resection weights, breast volumes (3D volumetric assessments), and anthropometric measurements such as midclavicle-to-nipple distance (MCN), lower areolar border to inframammary fold distance (IMFA), and areolar diameter (DA). Complications were graded using the Clavien-Dindo classification. Generalized linear and logistic regression models were used to assess associations between patient and surgical variables and postoperative outcomes.

Results
The mean patient age was 39.5 years. Average resection weights were 430 g (right) and 450 g (left), with 54% of cases in the 200–499 g range. Mean breast volumes were 630 cc (3 months), 536 cc (6 months), and 605 cc (12 months). Minor complications (grade I) occurred in 15% of patients; one grade IIIb complication required surgical intervention.
Morphometric analysis revealed a minimal downward shift of nipple position at 12 months, with a mean MCN increase of 1.01cm. A mild lower pole expansion was observed, with a median IMFA increase of 1.27 cm, along with a 0.25 cm increase in areolar diameter.
Higher postoperative breast volume was significantly associated with greater morphometric changes at 12 months. Larger resection weights (500–2000 g) and higher BMI were predictive of increased lower pole expansion.

Conclusions
Postoperative morphometric changes, including downward shift in nipple position and lower pole expansion, can be predicted by factors such as postoperative breast volume, resection weight, age, and BMI. These findings highlight the importance of individualized surgical planning and long-term follow-up to optimize aesthetic outcomes in reduction mammoplasty.

Tuberous breast: Always a challenge for the Plastic Surgeon

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Objective

Many techniques have been described for the solution to a complex problem called tuberous breast. The conference will analyze its classifications and surgical techniques described for its treatment, with and without implants. Concepts and video surgery will be presented. Current management and future vision of this interesting pathology for the plastic surgeon: classification, published techniques, and personal approach.

Secretome characterisation of adipose stem cells spheroids for tissue engineering applications

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Objective

Cell therapy presents a promising approach for nerve repair and regeneration. Human adipose-derived stem cells (hASCs) have gained attention for their regenerative properties, largely mediated by the secretion of bioactive molecules. The culture format, whether as 2D monolayers or 3D spheroids, influences the secretory profile and functional potential of hASCs. This study aims to characterised and compare the secretum of hASCs cultured in 2D monolayers versus 3D spheroids. Luminex technology was used to quantify key cytokines, growth factors, and chemokines present in the supernatant.

Methods

Spheroids were generated from hASCs (passages 4 to 5) using the microwell technique, with cell seeding densities of 1000, 2000, 3000, and 4000 cells per spheroid to determine the optimal culture conditions. These spheroids were maintained for ten days. After this period, they were characterised for size and viability, and further analysed for surface markers and the secretome profile consisting of 24 different analytes including neurotrophic factors, growth factors, cytokines and matrix remodelling factors to be able to establish the signature of the adipose stem cells in spheroid cultures.

Results

The culture of hASCs spheroids was successfully established. Data analysis showed a correlation between seeding density, growth kinetics, and cell viability over the ten-day period. Luminex analysis and secretum profiling was successful. Moreover, comparison of the spheroids' secretome revealed a distinct secretory profile compared to monolayer cultures' secretome. To our knowledge, this is the first report for establishing the secretome signature of the adipose stem cells in spheroids and comparison to the 2D-culture system.

Conclusions

Spheroid culture analysis revealed seeding density dependent size, growth and biological properties. Further, hASCs spheroids exhibited a distinct secretory profile in comparison to 2D monolayer cultures, thus indicating the improved therapeutic potential of the spheroid cultures. Together, we report a novel approach for the improving of adipose stem cell therapy in the field of issue engineering and regenerative medicine, particularly for neural tissue repair.

Autologous adipose tissue transfer in progressive hemifacial atrophy: From simple volume to regenerative cell therapy

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Objective

Progressive hemifacial atrophy (PHA), including en-coup-de-sabre morphea and Parry-Romberg syndrome, is a rare condition characterized by unilateral atrophy of facial tissues. The etiology of PHA remains unclear, though it is generally considered to be an autoimmune disease. Current treatment approaches typically involve systemic immunosuppression to stabilize the disease, followed by reconstructive surgery to restore facial symmetry, ranging from complex flap reconstruction to autologous fat transfer (AFT) and allogenic fillers. Recent evidence supports AFT not only as a volumetric filler but also for its immunomodulatory and angiogenic properties, making it a promising supplement or even alternative to systemic immunosuppressive therapy.

Methods

We present four cases of PHA treated with AFT in Dakar, Senegal, and Geneva, Switzerland. A comprehensive review of evidence supporting AFT as a cellular therapy in patients with PHA was performed discussing its potential as an effective stand-alone therapeutic option.

Results

There is growing evidence that AFT has regenerative effects in fibrotic autoimmune disease, including scleroderma and PHA. This is in line with our results showing not only improved facial contours and a restoration of symmetrical fullness but also improved overall tissue quality after AFT.

Conclusions

We advocate AFT to be a safe and reliable therapy in PHA, offering not only a substitute to the lost tissue but also local immunomodulatory benefits useful for tissue regeneration. Besides the benefits of combining local immunomodulatory cell therapy with the reconstructive volume restoration, this technique offers a low risk profile, cost-effectiveness and excellent accessibility, particularly relevant in low-income settings.

Do muscular flaps still have a role in lower limb reconstruction? A "face-to-face" comparison with fasciocutaneous flaps in foot and ankle reconstruction

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Objective
Lower limb reconstruction has witnessed a progressive shift in flap choice over the past decades, with fasciocutaneous flaps increasingly regarded as the modern gold standard due to their versatility and reduced donor site morbidity and supposed faster healing. However, as the goals of reconstructive surgery evolve, placing greater emphasis on aesthetic and functional outcomes rather than mere defect coverage, the value of muscular flaps deserves attention in particular cases and anatomical regions. Interestingly, techniques historically labeled as "obsolete" may in fact offer advantages that align closely with today's goals in reconstruction.

Methods
We conducted a retrospective chart review of free flap reconstructions of the distal lower leg (foot and/or ankle region) performed at our unit and compared fasciocutaneous versus muscular flaps. Contour, integration into weight-bearing areas, aesthetic appearance, functional recovery, and donor site morbidity were compared.

Results
Fasciocutaneous flaps were generally associated with faster wound healing. However, in critical regions like the ankle and foot, muscular flaps demonstrated the advantage progressive shrinking and shaping by muscle atrophy, while fasciocutaneous took longer to shrink and often needed secondary thinning/corrections, which impacts the patients' quality of life. This natural remodeling led to improved contour and stability, resulting in superior aesthetic and functional outcomes in given cases. In contrast, fasciocutaneous flaps tended to maintain bulk over time, occasionally leading to a "floating" appearance in dynamic, weight-bearing areas.

Conclusions
This work suggests that muscular flaps, though often considered traditional and less innovative, may in fact better fulfill aesthetic and functional expectations in complex regions such as the foot and ankle. The use of newer, unconventional muscular flaps, such as the pronator quadratus muscle flap, offers the possibility of minimizing donor site morbidity while achieving very good functional and aesthetic outcomes. The comparison between fasciocutaneous and muscular flaps is an open debate in reconstructive surgery, and the best solution must be tailored to the specific needs of each patient and defect. However, this "face-to-face" evaluation highlights how there still are indications for muscle flaps in this anatomical region.

Reconstruction of cervical tracheoesophageal fistulas: Insights from a case series and contemporary flap options

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Objective
Complex cervical tracheoesophageal fistulas (TEFs) are rare but severe complications following head and neck cancer surgery, particularly after total laryngectomy and tracheoesophageal puncture for voice restoration. These complex fistulas often arise after multiple failed attempts at closure using local options such as sternocleidomastoid muscle flaps or bovine pericardial patches. They are associated with significant morbidity, including aspiration pneumonia and serious dysphagia. Surgical reconstruction is technically demanding due to prior radiotherapy, tissue fibrosis, and the cervical anatomy. Optimal management requires an interdisciplinary approach involving plastic, ENT and thoracic surgeons and often necessitates the use of multiple flaps for reliable closure. This study aims to present clinical insights and to review the reconstructive options.

Methods
We conducted a retrospective analysis of patients who underwent surgical reconstruction for cervical or cervico-thoracic TEFs between 2010 and 2025 at two tertiary centers: University Hospital Basel and the Cantonal Hospital Aarau. Collected data included patient demographics, primary diagnosis, surgical technique, type of flap used, recipient vessels, and postoperative outcomes. A literature review using Medline was performed to identify studies on flap-based TEF reconstruction.

Results
The case series included 7 male patients with a history of head and neck cancer surgery complicated by large TEFs. The mean age was 64 years, and the mean operative time was 243 minutes. In total, 16 reconstructive procedures were performed using 13 different flaps. The most frequently used flaps were the radial forearm free flap (RFFF), anterolateral thigh (ALT) flap, and pectoralis major myocutaneous (PMMC) flap. The literature review included 33 studies with 115 patients, revealing a clear trend toward increased use of free flaps over the past decade.

Conclusions
Reconstruction of large cervical TEFs demands a highly individualized and interdisciplinary strategy, considering defect size, patient history, and available tissue. Our experience, supported by existing literature, underscores the efficacy of vascularized flaps, particularly free flaps such as RFFF and ALT. Nevertheless, high-quality prospective studies directly comparing flap outcomes remain scarce and further research is needed to develop evidence-based guidelines.

Experience with 524 microsurgical breast reconstructions: A retrospective analysis

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Objective
Microsurgical techniques have become a cornerstone in autologous breast reconstruction, offering durable and natural results with minimal donor site morbidity. This study presents the clinical experience from a high-volume center, analyzing 524 consecutive microsurgical breast reconstructions performed over a defined period.

Methods
A retrospective review was conducted of all patients who underwent microsurgical breast reconstruction, including DIEP, SIEA, and other perforator flaps. Patient characteristics, risk factors, surgical techniques, perioperative management, complications, and secondary procedures were systematically evaluated.

Results
The analysis explores surgical safety, flap viability, the incidence of microsurgical revisions, and common postoperative complications. Furthermore, trends in flap selection, operative logistics, and team learning curves are discussed.

Conclusions
This large consecutive series provides insight into the outcomes, challenges, and refinement of microsurgical breast reconstruction in a specialized setting. The findings aim to contribute to the ongoing optimization of reconstructive strategies and best practices in microsurgical breast surgery.

Lymphovenous anastamosis for prevention of upper limb lymphoedema following axillary clearance: A prospective cohort study on clinical and quality of life outcomes

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Objective
Upper limb lymphoedema is a debilitating post-operative complication of axillary lymph node clearance. Preventative lymphovenous anastomosis has been reported to significantly reduce the risk of lymphoedema. We present results on incidence of lymphoedema and quality of life outcomes for a single centre, prospective cohort study.

Methods
Preventative lymphovenous anastomosis following axillary lymph node clearance, for breast cancer or skin cancer of the trunk, was performed at Royal Free Hospital London from March 2021 to October 2024 for 41 patients. Follow up was for 36 months. Incidence of lymphoedema was evaluated based on relative arm volume and bioimpedance measurements. Quality-of-life was assessed via Short Form-36 and Lymphoedema Life Impact Scale questionnaires.

Results
3 patients were excluded due to disease recurrence. Of 38 patients, 2 (5.3%) developed lymphoedema, with average follow up of 22.5 months (1-36months). Within the subset of 31 patients with over 12-months follow up, 2 (6.5%) developed lymphoedema, with average follow up of 25.4 months (12-36 months). There was increase in relative arm volume at 3-months post operatively across the cohort (8.5% difference) but this was not statistically significant. Analysis of bioimpedance suggested it is a useful proxy for relative arm volume measurement. Quality of life data gave no significant findings in relation to time since operation, incidence of lymphoedema, or subjective symptoms of lymphoedema.

Conclusions
Lymphoedema incidence within the study group is in keeping with current literature for preventative lymphovenous anastomosis. Inclusion of quality-of-life data offers a valuable and novel insight into how this patient group may be affected by the operative procedure and subsequent diagnosis of lymphoedema.

Pro-angiogenic and antibacterial copper containing nanoparticles in PLGA/amorphous calcium phosphate bone nanocomposites

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Objective
Bone defects present a serious problem in human health care and so the development of biological substitutes to restore those defects is of big interest. However, insufficient vascularization of biological bone graft materials remains a significant limitation. Nanocomposites, such as poly(lactic-co-glycolic acid) (PLGA) and amorphous calcium phosphate (aCaP), have proven their potential in tissue engineering and researchers try to improve their vascularization . This study therefore explores the pro-angiogenic and antibacterial potential of copper oxide (CuO) nanoparticles and copper-doped calcium triphosphate (TCP) integrated into composite materials, such as PLGA/aCaP.

Methods
Bi-layered nanocomposites of PLGA/aCaP with copper nanoparticles in different concentrations (1%, 5%, 10%) were fabricated. With the chorion allantoic membrane (CAM) assay we determined the vessel density of capillaries growing from the chorioallantoic membrane into the nanocomposites that were placed on the CAM for one week. We histologically analyzed the area of vessels per area, the cell density, the tissue integration as well as the collagen intensity. We also performed qPCR of CAM tissue harvested from the nanocomposites and analyzed the expression of two target genes, VEGF and ANG-1. Furthermore two clinical bacterial isolates were used to assess antibacterial properties of the copper- containing materials.

Results
The main outcomes of our study were the findings of highest vessel and cell densities as well as collagen intensity for PLGA/aCaP with 5 % CuO, however, with lowest tissue integration into the fiber mesh. Our findings of downregulated VEGF and Ang1 gene expression through the presence of CuO NPs within the nanocomposites does not reflect the pro-angiogenic effects observed in the histological readouts of the in ovo CAM assay, but may be explained by gene expression dynamics, where upregulation of those pro-angiogenic factors may have been already over at the endpoint of 7 days. The higher the CuO content, the higher were the antibacterial properties, with 10 % CuO reducing bacterial adhesion most effectively.

Conclusions
We conclude that CuO NPs or CuTCP NPs are useful components to increase angiogenic properties of nanocomposites and at the same time exhibiting antibacterial characteristics.

The impact of preoperative radiotherapy and chemotherapy on autologous breast reconstruction outcomes: A retrospective single-center study

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Objective
While radiotherapy (RT) and chemotherapy (CT) significantly improve breast cancer outcomes, they may affect breast reconstruction by causing vascular damage and delayed wound healing. This retrospective study evaluates how preoperative RT, CT, or the combination of both impacts intraoperative and postoperative outcomes in immediate or delayed deep inferior epigastric perforator (DIEP) flap breast reconstructions.

Methods
We conducted a single-center review of all patients undergoing autologous DIEP flap reconstruction after mastectomy between 2018 and 2024. Patients were divided into four groups: RT only, CT only, a combination of RT and CT, and a control group with no preoperative therapies. Intraoperative and postoperative outcomes were then compared among these groups, with statistical significance defined as $p < 0.05$.

Results
We included 114 patients representing 141 DIEP-flap breast reconstructions. Flap survival rate was 98.5%. In the univariate analysis, total microvascular recipient site complications were significantly higher in the RT + CT group (14.0%, $p = 0.021$). Donor-site complication rates differed significantly among the four groups ($p = 0.025$), with the highest rate observed in the RT + CT group (44.7%). In the logistic regression analysis, ischemia time was found as an independent risk factor for total recipient site complications, but not for microvascular complications (OR = 1.019, 95%-CI = 1.004–1.035, $p = 0.014$).

Conclusions
Combined RT + CT significantly increased microsurgical complications. Ischemia time correlated with higher odds of total recipient site complications. Individualized patient management and diminished ischemia time are likely to improve flap survival.

Facial reanimation in moebius syndrome: A 25-year experience of treating bilateral facial paralysis

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Objective
Moebius syndrome is a rare congenital neurological disorder characterized by bilateral facial (VII) and abducens (VI) nerve palsies, resulting in facial paralysis and impaired ocular abduction. Additional cranial nerve involvement and anomalies, such as limb deformities and neurodevelopmental abnormalities, complicate its presentation. Facial reanimation using a free functional muscle transfer is the gold standard for restoring movement and improving psychosocial outcomes. This study presents over 25 years of surgical experience in facial reanimation for Moebius syndrome.

Methods
A retrospective analysis of Moebius syndrome patients who underwent bilateral facial reanimation between 1998 and 2023 was conducted. Outcomes were assessed using a surgeon's score, independent panel scoring with the Hay's rating scale, and evaluation of spontaneous smile. We describe our surgical technique, key aspects of postoperative therapy and potential pitfalls.

Results
56 patients (30 females, 26 males) underwent facial reanimation, of which 49 had complete Moebius syndrome. Partial latissimus dorsi muscle flaps were used in 93% of cases, with the masseteric nerve as neural input (91%). Facial symmetry and function were rated as excellent (n=43) or good (n=11) in 96% of patients. A spontaneous smile was achieved in 59% of cases, with the best outcomes in masseteric-innervated latissimus dorsi transfers.

Conclusions
Bilateral free functional muscle transfers are the gold-standard for facial reanimation in Moebius syndrome, yielding significant functional and aesthetic improvements, especially in children. We recommend performing bilateral facial reanimation as a single stage procedure due to its physical and psychological benefits for this patient population.

Topical application of tranexamic acid in abdominoplasties leads to lower drainage volume and earlier drain removal

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Objective
Tranexamic acid (TXA) is an antifibrinolytic agent that is successfully used in many medical fields to reduce blood loss. In plastic surgery, the systemic administration of TXA has been associated with less hematoma and seroma formation, and consequently, a reduction in the length of hospital stay (LOS). The aim of this study was to evaluate if the topical administration of TXA in patients undergoing abdominoplasty leads to a decrease in the daily drainage volume; earlier drain removal; and possibly, a shorter LOS.

Methods
In this single-center, comparative study, 60 patients undergoing abdominoplasty received either topical TXA treatment (n = 30; 1 g) or no treatment (n = 30). The primary endpoints were daily drainage volume, time until drain removal, and total LOS. Variables such as sex, age, body mass index, weight of resected skin and underlying fat, and concomitant liposuction were considered in the statistical analysis as covariates.

Results
In the TXA group, 54% less total drainage volume was observed ($P < 0.01$). The time until drain removal and LOS were reduced by 23% ($P < 0.01$) and 24% ($P < 0.01$), respectively, compared with the control group. Moreover, it was found that daily drainage volume increased with age.

Conclusions
Topical TXA administration reduces daily drainage volume, time until drain removal, and LOS significantly in patients undergoing abdominoplasty. Further studies analyzing the superiority of topical TXA compared with systemic TXA, as well as studies investigating the ideal TXA dosage could deliver further valuable information.

Dorso-ulnar reverse flow pedicled osseous flap for bone defects of the thumb

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Objective
Reconstruction of osseous defects of the distal phalanx of the thumb is usually addressed with free bone grafts or free vascularized bone flaps. Some reports demonstrated the possibility to harvest an osteo-cutaneous flap in the dorso-ulnar side of the first metacarpal bone. In the same manner, no reports are present in the literature in which bone gaps were reconstructed with this flap elevated as an exclusively osseous flap. We report our successful experience with three cases of distal phalanx reconstruction of the thumb with the dorso-ulnar reverse flow pedicled osseous flap; the flap harvesting technique and review of literature.

Methods
Three patients underwent bone resection at the thumb level, for tumor resection or due to osteomyelitis of the thumb. Different techniques were proposed to restore thumb functionality and aesthetic appearance. To overcome patient's apprehension on the donor site area and decrease the risk of resorption of bone grafts, we proposed a dorso-ulnar reverse flow pedicle osseous flap.

Results
No complications occurred and excellent functional result was evaluated at 12 months follow-up. The x-ray evaluation demonstrated complete bone consolidation and healing of the donor site area at the first metacarpal without recurrence of osteomyelitis or instability at the level of the reconstructed bone area. Patients returned to heavy manual work 12 weeks after surgery with a complete restoring of ROM, pinch grip and Kapandij score.

Conclusions
This flap may be considered as an alternative to free bone grafts in situations in which perilesional tissues may jeopardize the process of free graft taking and in cases in which free vascularized bone flaps are not feasible for patient or surgeon decision. As the anatomy of the flap is well established and documented in the literature, we believe that this flap is a valid option for distal phalanx bone reconstruction of the thumb.

Prefabrication of an axially vascularized bone graft: Proof of concept for a BMP-2 based cell-free approach

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Objective
Reconstruction of critical-sized bone defects, particularly in the maxillofacial region, remains a clinical challenge. Autologous vascularized bone grafts are currently the gold standard but are limited by donor site morbidity and availability. Prefabrication of axially vascularized bone grafts using an arteriovenous (AV) bundle improves graft viability through intrinsic vascularization. While earlier approaches involved pre-cultured stromal cells, limiting clinical translation due to regulatory constraints, recent developments have demonstrated the feasibility of a BMP-2- and stromal vascular fraction (SVF)-enhanced approach in a first-in-human case, avoiding in-vitro cell expansion. This study aims to evaluate the efficacy of this strategy in a small animal model and to assess the individual roles of BMP-2 and SVF cells to bone (re)generation.

Methods
SmartBone® (IBI SA, Switzerland), a bovine-derived composite scaffold, was combined with fibrin gel (Tisseel®, Baxter, USA) enriched with BMP-2 and/or SVF cells isolated from human adipose tissue. Each graft measured 5 mm × 5 mm × 3 mm and was implanted subcutaneously in CD1 nu/nu female nude mice (4 grafts/mouse). Grafts were explanted after 12 weeks and analyzed using micro-CT and histology.

Results
We successfully retrieved and analyzed 28 grafts from the mice. Grafts containing BMP-2 exhibited robust and homogenous mineralization across the scaffold, as confirmed by micro-CT and histological analysis. Mature bone tissue and marrow-like structures were observed after 12 weeks, indicating effective osteoinduction. Interestingly, the addition of SVF cells did not enhance bone formation, as no significant differences were detected between BMP-2 groups with or without SVF. In contrast, grafts without BMP-2, regardless of SVF cell presence, showed only minor, localized calcifications without evidence of structured bone formation. These findings underlie BMP-2's crucial role in bone formation.

Conclusions
This study supports the feasibility of a BMP-2-based, cell-free approach for prefabricating axially vascularized bone grafts. By eliminating in vitro cell expansion, this approach holds promise for clinical translation while preserving the advantages of intrinsic vascularization. Future work will focus on determining the most effective BMP-2 dose required for successful clinical translation.

A customizable autologous tissue engineering strategy for bone (re)construction following the endochondral ossification pathway

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Objective
Reconstructing large bone defects remains a clinical challenge, often relying on vascularized autologous bone grafts. Bone tissue engineering (BTE) may offer viable alternatives. Here, we used adipose-derived stromal cells (ASCs) in a developmentally inspired strategy to engineer osteogenic grafts for phalanx reconstruction via endochondral ossification (ECO).

Methods
We used a modular approach to create customizable grafts. Human ASCs were isolated from stromal vascular fraction, seeded on collagen sponges, and exposed to chondrogenic factors for two weeks to form cartilage spheres (10–60 mm^3). These were assembled into phalanx-shaped grafts and cultured with chondroprogenitor-stimulating conditions to enhance fusion, followed by re-exposure to chondrogenic media. Grafts were implanted into immunocompromised mice, and bone formation was assessed via µCT, histology, and biomechanical testing at 4, 12, and 24 weeks. We also scaled up the method using multi-sphere assemblies and 3D-printed molds to mimic long bone shapes.

Results
We successfully generated cylindrical grafts (6–14 mm long, 2–5 mm diameter) from five donors. Cartilage quality correlated with glycosaminoglycan (GAG) release and Safranin-O staining. By 4 weeks in vivo, early ECO signs appeared, with progressive mineralization. At 12 weeks, bone content increased and bone marrow pockets formed. By 24 weeks, grafts fully remodeled into bone, preserving size and shape, with cortical shells, marrow-filled centers, and trabecular networks. Elastic modulus increased alongside mineralization. Furthermore, we successfully engineered two ring-shaped constructs employing two distinct in vitro graft fabrication strategies.

Conclusions
This study demonstrates a feasible, autologous ASC-based strategy for generating patient-specific osteogenic grafts, with potential for treating bone defects and broader applications in adult bone reconstruction.

Good flaps go to heaven, bad flaps go back to surgery: The fine line between fat necrosis and flap loss

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Objective
Fat necrosis is a common benign complication that can occur after autologous breast reconstruction. Its multifactorial ethiology and variable presentation together with a lack of defined pathway for detection, have made its objectivation difficult. Hence, so far, no proper staging system has been defined.

Methods
A retrospective analysis was conducted on patients who received autologous breast reconstruction within the last 5 years in our institution.
Aim of the analysis was to define the incidence and the type of re-intervention after the detection of fat necrosis.

Results
Over a total amount of 670 flaps performed in our institution in the last 5 years, 6 flaps had to be removed due to extensive fat necrosis and replaced with either another flap or with an implant-based reconstruction.
In addition to that, 34 flaps had received major flap reshaping usually through removal of fat necrosis, scar release and lipofilling.

Conclusions
While small necrotic lumps are generally treated conservatively, flaps presenting larger and symptomatic areas of fat necrosis represent a challenge for microsurgeons.
Based on our data, an algorithm was outlined in order to provide a step by step approach for the treatment of severe fat necrosis.
At the same time a staging classification was created in order to better standardize the surgical approach.

The “crater” method in artery-only fingertip replantation in zone Tamai I. The gold standard?

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Objective
According to the latest literature, the type of venous drainage in fingertip replantation using the artery-only technique does not play a relevant role in the success of the replantation. There are several options to establish external bleeding. One of them is the method called the “crater” method, a pulp skin bleeding technique (Kayalar M. J H Surg. Am 2020). The authors of one of the largest number of cases of artery-only fingertip replantations (228 cases) have very good results with this method and prefer it as a primary choice. It is of interest whether this method can be recommended as a gold standard.

Methods
This study conducts a literature review on techniques for establishing venous outflow in artery-only fingertip replantation, evaluating the success rates of different approaches. Additionally, we present an analysis of our institutional data from the past eight years, specifically examining 21 cases of Tamai Zone I fingertip amputations.

Results
All 21 cases were treated using the artery-only technique, with venous drainage accomplished via tangential dermal excision, commonly referred to as the "crater method." Of these, 15 cases resulted in successful replantation, while 5 experienced necrosis. Notably, none of the patients required blood transfusions, and the average hospital stay was 6 days.

Conclusions
Restoration of the venous drainage in Tamai I fingertip replantation is controversial. Rarely, a direct anastomosis of the vein, even with interposition vein grafts, is possible. However, if the replantation is performed as an artery-only replantation, some type of venous drain must occur. The “crater” method is a reliable, applicable and simple method that offers advantages over other methods such as nail bed bleeding or fish mouth incisions. Based on results of recent literature and our own experience we can really recommend this method, but it must be added, however, that lager numbers of cases are needed to make a reliable statement.

Enhanced visualization of the intramuscular course of perforator arteries in CT angiography using sublingual glyceryl trinitrate for preoperative planning of deep inferior epigastric perforator flaps

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Objective
Computed tomography angiography (CTA) is the gold standard for preoperative imaging in DIEP flap breast reconstruction. This pilot project aims to improve visualization of the intramuscular course of perforator arteries by administering sublingual glyceryl trinitrate (GTN) prior to imaging. GTN, routinely used in coronary CTA for its vasodilatory effect (Okada M. et al., 2015), has also shown benefits in the preoperative visualization of vessels in intra-abdominal (Hoshika, M. et al, 2017) and anterolateral thigh (ALT) flap procedures (Lu G. et al., 2023). In collaboration with the Department of Radiology, we evaluated whether GTN administration improves the depiction of perforator anatomy in preoperative CTA.

Methods
For preoperative imaging, 0.8 mg of sublingual GTN was administered prior to abdominal arterial CTA. Perforators identified on CTA were marked on the abdominal skin immediately before surgery and subsequently exposed intraoperatively. The optimal perforator was selected based on clinical assessment, and flap perfusion was confirmed using indocyanine green (ICG) angiography. Postoperatively, the perforator identified on CTA was compared with the one ultimately used during surgery, and the predicted intramuscular course based on CTA was compared to the actual intraoperative findings.

Results
Since January 2023, 42 DIEP flap breast reconstructions have been performed at KSGR out of a total of 69 free flap procedures. In ten cases, sublingual GTN was administered prior to CTA. In these cases, CTA demonstrated enhanced visualization of the perforator arteries, attributed to peripheral vasodilation. Compared to standard imaging, perforators were more accurately localized, and their intramuscular course was delineated more clearly. Intraoperative findings confirmed the accuracy of the preoperative CTA, supporting its reliability for surgical planning. This enhanced visualization enabled more precise planning and dissection.

Conclusions
Sublingual GTN prior to abdominal CTA improves perforator artery visualization concerning the intramuscular course, aiding in the selection of the most suitable perforator preoperatively. This approach has the potential to reduce operative time and enhance surgical outcomes in DIEP flap procedures.

ADM and synthetic meshes to correct implant-related bottoming out and ptosis

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Objective
The use of synthetic meshes and acellular dermal matrices (ADMs) has become a well-established and widespread measure to reinforce the implant pocket in implant-based breast reconstruction. In our study, we aimed to investigate the efficacy of such materials in stabilizing footprint as well as breast shape in aesthetic indications to correct implant-related bottoming out and breast ptosis.

Methods
We analyzed a consecutive series of 14 patients receiving such a procedure between September 2021 and March 2025 in a total of 20 breasts. The follow-up was 11.1 +/- 4.7 months (mean +/- standard deviation). Four breasts were provided with a partially absorbable mesh (Ultrapro), 6 breasts with an ADM (Cellis) and 10 breasts with a titanic mesh (tiloop bra). The indication was to restore the inframammary fold in 7 patients (10 breasts), to correct recurrent implant-related ptosis in 5 patients (6 breasts) and prophylactically in 2 patients (4 breasts) receiving breast augmentation.
Objective data analysis was performed by measuring the position of the inframammary fold or the border of the lower breast in standardized preop and postop images. The success of the procedure was rated by semiquantitative analysis.

Results
The inframammary fold could be lifted by 2.1 +/- 0.7 cm in the bottoming-out patients, and the lower pole by 1.5 +/- 0.7 cm in the ptotic breast subset. In spite of the use of large implants (360 cc and 550cc) in the two preventive cases showing severe skin laxity, no bottoming out or ptosis occurred. The preoperative volumes of breast and implants was 486 +/-326 cc and 345 +/- 131 cc, respectively, whereas as the postoperative volumes were 513 +/- 236 ml and 334 +/- 112 ml, respectively. The aesthetic goal was fully achieved in 13 breasts, an improvement without reaching the aesthetic goal was obtained in 5 breasts and no improvement was observed in 2 breasts.

Conclusions
In our study, ADM and synthetic meshes proved to be reliable tools in secondary breast augmentation even in desperate cases of bottoming out and ptosis and even without reducing the total volume of breast or implant.

Artificial intelligence assessment of emotional expression and age analysis following aesthetic botulinum toxin injections

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Objective
Botulinum toxin type A (BoNT-A) injections are widely used in aesthetic medicine due to their high efficacy and safety. While BoNT-A effectively reduces dynamic facial wrinkles, it may also impair facial expressiveness, potentially influencing emotion recognition and social interaction. This study aimed to objectively assess changes in emotional expression and perceived age using an AI-based facial analysis tool, FaceReader, following aesthetic BoNT-A treatment.

Methods
A prospective observational study was conducted at University Hospital Basel from June 2024 to June 2025. Eighteen adult patients undergoing BoNT-A injections were assessed using standardized photographs and videos before and three weeks after treatment. FaceReader was employed to analyse six emotional expressions - happiness, sadness, anger, surprise, fear, and disgust - via Facial Action Units, and to estimate perceived age. Additionally, patient-reported outcome measures (PROMs) were collected using the FACE-Q questionnaire.

Results
FaceReader detected a statistically significant 31.4% reduction in the ability to express 'anger' post-treatment ($p < 0.005$), while other emotions showed no significant change. The most intense expression observed was 'happiness' (mean 97%), whereas 'fear' and 'disgust' were least expressive. Age analysis revealed a significant average decrease of 3.6 years in perceived age ($p < 0.0001$), with a strong correlation to patients' actual age ($r = 0.7335$). FACE-Q results supported these findings, with patients reporting a mean decrease of 2.6 years in perceived age, along with increased satisfaction regarding facial appearance and reduced facial wrinkles ($p < 0.005$). No significant change in psychological well-being or social self-confidence was observed.

Conclusions
This is the first study to utilize AI-driven FaceReader software for assessing emotional expression following BoNT-A treatment. BoNT-A selectively impairs the expression of anger without significantly affecting other emotional displays. The AI-based age estimation aligned with patient self-assessments and subjective satisfaction. These findings suggest FaceReader can serve as a valuable tool for objective outcome assessment in aesthetic medicine, potentially reducing reliance on human evaluation and enabling deeper insights into both emotional expression and perceived aging effects of BoNT-A.

Nasolabial flap modifications and other options in nasal ala reconstruction

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Objective
The nasolabial flap is commonly used for reconstructing the nasal ala due to its advantages, such as optimal location, color match, excellent blood supply, minimal donor deformity, absence of hair, and ease of transfer. Variations of the nasolabial flap include two-staged and single-staged options, but the choice between them is often unclear.

Methods
This study retrospectively analyzed consecutive alar reconstructions over a 10-year period (January 2012 to December 2021), reviewing charts and surgical reports for defect size, reconstructive techniques, cartilage grafts, complications, and secondary procedures. Patients were followed up at 3, 6, and 12 months, with aesthetic outcomes assessed through digital photographs.

Results
A total of 148 alar reconstructions were performed on 84 female and 64 male patients (mean age 69 years; range 19-89 years). The average defect diameter was 1.6 cm, with 70 cases involving the right ala and 78 the left. Of these, 110 reconstructions (74%) utilized nasolabial flaps, 90 single-staged and 20 two-staged, comprising 68 nasolabial-cheek flaps, 32 nasolabial island flaps, and 10 nasolabial transposition flaps. The remaining 38 reconstructions (26%) included other flaps (20), skin-fat grafts (14), and direct closure (4). Alar rim grafts were used in 100 patients (95 primary, 5 secondary).
Complications occurred in 42 patients (28%), including hematoma, delayed wound healing, flap necrosis, vestibular stenosis, and alar crease obliteration. Planned secondary procedures were conducted in 20 nasolabial island flaps and 12 paramedian forehead flaps, while unplanned secondary procedures occurred in 42 single-stage nasolabial flaps (47%). No revisions were needed for other single-stage flaps or skin-fat grafts.

Conclusions
Both single-stage and two-stage nasolabial flap variations are effective for nasal ala reconstruction, especially when following specific design and harvesting principles. Two-stage flaps benefit patients with pronounced alar creases and thick nostrils, while single-stage flaps suit those with flatter creases and thinner nostrils. Scars should ideally be placed at anatomical borders or existing folds. With appropriate indications, single-stage nasolabial flaps yield aesthetically pleasing results, though unplanned secondary surgeries are common.

A novel flap selection algorithm for limb reconstruction

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Objective
The primary goal in reconstructing limb defects, whether oncologic or traumatic, remains the restoration of function. However, the aesthetic outcome of donor site scars has become increasingly relevant in microsurgical reconstruction. This work proposes an innovative reconstructive algorithm based on flaps that are still underutilized in limb reconstruction.

Methods
We present our clinical experience in limb reconstruction performed between 2021 and 2024 at the Cantonal Hospitals of Lucerne and Winterthur. The flaps predominantly used were SCIP/SIEA, PAP, and latissimus dorsi. We discuss the advantages and disadvantages of these flaps in comparison to more commonly utilized options.

Results
SCIP/SIEA flaps were used in 17 cases and PAP flaps in 4 cases, and proved suitable for small to medium-sized defects, with excellent donor site acceptance by patients. The latissimus dorsi flap was used in 3 cases for large defects. With regard to complications, wound dehiscence was noted in 3 patients, venous insufficiency in 2 patients, partial flap necrosis in 2 patients, and total flap loss was observed in 1 patient.

Conclusions
In our clinical practice, SCIP/SIEA and PAP flaps have gradually replaced more traditional options such as the ALT, radial forearm and MSAP flaps, owing to their favorable donor site morbidity and versatility. For defects requiring large tissue coverage, the latissimus dorsi flap remains the preferred choice.

Semaphorin 3A promotes the long-term persistence of human SVF-derived microvascular networks in engineered grafts

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Objective
The stromal vascular fraction (SVF) of human adipose tissue is rich in vasculogenic progenitors, making it a promising cell source for engineering vascularized grafts. However, newly formed microvascular networks often lack long-term stability. This study investigates whether Semaphorin 3A (Sema3A), previously shown to promote vascular stabilization, can enhance the long-term persistence of SVF-derived microvascular networks in vivo.

Methods
Engineered grafts were generated using human SVF cells embedded in fibrin hydrogels, decorated with recombinant Sema3A cross-linked via a transglutaminase substrate sequence (TG-Sema3A) at concentrations of 0, 0.1, or 100 µg/mL. These constructs were implanted subcutaneously in immunodeficient mice and analyzed at 1, 6, and 12 weeks post-implantation through immunofluorescence and quantitative histology. Recruitment of Neuropilin-1+ monocytes (NEM) was assessed as a potential mechanism of action.

Results
Initial network formation and perfusion were comparable across all conditions after one week, with almost 90% of human vessels connected to the host circulation. However, by 6 weeks, grafts containing 0.1 µg/mL Sema3A showed a twofold increase in human vessel density compared to controls. At 12 weeks, only grafts treated with 0.1 µg/mL Sema3A maintained significant human vasculature, while networks in control and high-dose (100 µg/mL) groups had regressed. The protective effect of low-dose Sema3A correlated with the selective recruitment of NEMs, which are associated with vascular stabilization.

Conclusions
A low dose (0.1 µg/mL) of Sema3A significantly enhances the long-term stability of SVF-derived microvascular networks in engineered grafts by promoting NEM recruitment. This strategy holds promise for improving vascularization in tissue-engineered constructs and may serve as a universal "vasculogenic module" for regenerative applications.

Are swiss plastic surgery residents ready for Entrustable Professional Activities (EPAs)?

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Objective
The transition to Competency-Based Medical Education (CBME) in Plastic Surgery brings both opportunities and challenges. At KSA, we are leading this shift, having implemented 71 EPAs. One year after implementation, results show improved quality by teachers and residents' attitude towards feedback. However, elevated stress levels and negative emotional reactions were also noted. This project aims to assess the feedback and EPA readiness of residents nationally and – to support the successful integration of EPAs in Plastic Surgery training in Switzerland.

Methods
In a qualitative study, a questionnaire based on established literature was administered to Swiss Plastic Surgery residents. It explored four aspects: motivation to seek feedback, feedback targets, desired feedback content, and the ability to integrate feedback into practice.

Results
A total of 28 out of 64 residents participated (43% response rate). Three primary motivators for seeking feedback emerged: the desire to enhance the learning process, improve patient care, and obtain reliable information. However, time constraints and a perceived lack of supervisor motivation were identified as barriers to seeking feedback. Residents were selective in seeking feedback, focusing mainly on consultants or chiefs (54.1%) rather than all supervisors. The feedback they most desired was information directly relevant to their surgical skills. Two key psychological factors influencing feedback reception were identified: the "Truth Trigger" and the "Identity Trigger".

Conclusions
Our findings suggest that Swiss Plastic Surgery residents are generally prepared for the transition into a feedback-intensive environment. They recognize their responsibility in seeking feedback and have clear learning objectives.
However, effective feedback reception requires strategies to overcome "Truth and Identity Triggers". Shifting from a "right or wrong" mindset to "what can I learn?". Cultivating emotional resilience and self-awareness is key to EPA preparedness. This research highlights the need to properly prepare residents – an often overlooked yet crucial step in a sustainable competency-based curriculum. Building on these national findings, we aim to expand this research to the European level, collecting international data to gain broader insights into EPA readiness and feedback culture across various healthcare systems.

In vivo comparison of trapeziectomy and CMC-I prosthesis: Patient preferences and functional outcomes

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Objective
Thumb CMC-I osteoarthritis significantly impairs hand function and quality of life. While trapeziectomy is a well-established surgical treatment, prosthetic arthroplasty has gained traction due to promising early outcomes. Comparative studies are scarce and typically involve different cohorts. This study compares both techniques in patients who underwent trapeziectomy on one hand and CMC-I prosthesis on the other.

Methods
We conducted a mixed-methods study involving 10 patients (mean age 70; 70% female) who received unilateral trapeziectomy and contralateral prosthesis. Clinical follow-up averaged 11.3 years for trapeziectomy and 4.1 years for prosthesis. Objective outcomes included grip and key pinch strength, range of motion, pain duration, and time in postoperative hand therapy. Semi-structured interviews explored perceived hand function, appearance, autonomy, and recovery experience.

Results
Prosthesis resulted in significantly higher grip strength (26.5 kg vs. 19.7 kg, $p = 0.019$) and key pinch strength (5.6 kg vs. 4.1 kg, $p = 0.043$). Ante-/retropulsion was also significantly improved in the prosthesis group, while MP and IP range of motion showed no statistically significant differences. Postoperative pain resolved more rapidly after prosthesis implantation (12.8 vs. 57.2 days), and the duration of required hand therapy was shorter (1.2 vs. 3.2 months, $p < 0.01$). Patients rated the prosthetic thumb higher in terms of aesthetics, stability, and dexterity. Nine out of ten participants expressed a clear preference for the prosthesis, and all would choose it again. One participant noted: "I trust my prosthetic thumb more, especially for fine tasks." Another remarked: "The thumb with the prosthesis feels much more like a normal thumb. I completely forget that surgery even took place." In contrast, some patients reported dissatisfaction with the appearance of the trapeziectomy thumb. As one participant put it: "I simply like my thumb with the prosthesis better — I'd rather hide the other one."

Conclusions
In this direct intra-individual comparison, prosthesis showed superior results in strength, recovery, and satisfaction. Despite longer trapeziectomy follow-up, perceived function and appearance remained better with prosthesis. These findings support prosthetic arthroplasty as a viable primary option, especially for active patients prioritizing recovery, strength, and hand confidence.

Direct neck lift: Evaluating surgical techniques and patient selection

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Objective
Conventional cervicofacial rhytidectomy is widely considered the standard treatment for excess skin and tissue repositioning in the aging neck. However, when the primary concern is the anterior neck region in patients with excessive cervical adiposity (double chin) and/or platysma banding ('turkey gobbler' deformity), direct anterior medial cervicoplasty may provide a valid alternative. The aim of this study is to evaluate the surgical technique, aesthetic outcomes, and safety of direct anterior medial cervicoplasty.

Methods
Preoperative skin marking was performed using the pinching technique. The midline and platysmal borders served as landmarks to guide the preoperative markings. Excess skin and fat were excised using various patterns of Z-plasty and W-plasty combined with platysma plication. The surgical procedure was performed in an outpatient setting under local anesthesia, with a follow-up period of one year.

Results
All patients expressed high satisfaction with the results. No instances of scar hypertrophy, functional impairment, nerve damage, or other serious complications were observed. The scars were initially reddened during the early postoperative phase, but over time, they completely faded and became soft, thanks to meticulous scar care. Long-term follow-up showed excellent improvements in neck contour.

Conclusions
For carefully selected patients, direct anterior medial cervicoplasty is a safe, effective, and minimally invasive option for addressing both skin and fat excess, as well as platysma banding. This technique is reproducible with low morbidity and high patient satisfaction.

Mentorship in plastic surgery: Past, present and future

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Objective
Mentorship positively influences career trajectory, job satisfaction, and personal development amongst physicians. In competitive specialties, early mentorship may be particularly important. Despite broad recognition of its importance, formal programs remain inconsistently implemented and underreported. The aim of this international study is to examine the current state of mentoring in surgical subspecialties in Switzerland, and Europe, and provide a needs assessment fo a future, national mentorship program in plastic surgery.

Methods
A 10-part online questionnaire was developed by a team of specialized surgeons, psychologists, and trainees. The survey was disseminated via national mailing lists of Swiss College of Surgeons, the Swiss Society of Plastic, Reconstructive and Aesthetic Surgery and the social media platforms of the German Speaking Society of Reconstructive Microsurgery and the World Society of Reconstructive Microsurgery. Data was collected over a six month time period using a REDCap database.

Results
A total of 512 records were obtained. Participants represented a range of career stages, including 39 chief physicians. 70% of all respondents reported that mentorship was not formally introduced to them during medical school or surgical training. While 17% of respondents were pursuing or had completed board certification in plastic surgery, other represented specialties included visceral (24%) and general surgery (12%). 69% expressed dissatisfaction with current mentorship opportunities, while 82% support the development of a national mentorship platform. 97% agreed or strongly agreed that they value mentorship. Support for mentorship was consistent across all career levels: 100% of chief physicians, 92% of senior consultants and 97% of residents and students regarded mentorship as valuable or highly valuable. Participants ranked surgical skills, clinical judgement, and academic productivity as key areas of mentorship priority.

Conclusions

Mentorship is valued by surgeons independent of career stage. These findings highlight a strong demand for mentorship and a broad willingness among surgeons to participate as mentors or mentees. Moreover, mentorship structures may help address the growing shortage of young talent in surgery. Given this strong support, mentorship holds significant potential to strengthen collaboration and foster academic and clinical growth and excellence.

Fewer surgeries, better aesthetics: Immediate LICAP flap reconstruction outperforms delayed lipofilling after breast-conserving surgery

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Objective
While breast-conserving surgery (BCS) is the standard for early-stage breast cancer, volume loss can lead to poor aesthetic outcomes, often requiring multiple corrective procedures. Partial breast reconstruction using the Lateral Intercostal Artery Perforator (LICAP) flap is indicated for the reconstruction of the lateral quadrants of small or minimally ptotic breasts. It offers the potential to restore breast contour and volume while avoiding the psychosocial and physical burden of secondary procedures. This study compares outcomes between patients undergoing immediate partial breast reconstruction with the LICAP flap and those receiving conventional BCS followed by delayed lipofillings for correction volume and contour.

Methods
In this retrospective matched-pairs analysis, 30 patients who underwent BCS between 2019 and 2024 were included: 15 received immediate LICAP flap reconstruction, and 15 matched controls underwent segmentectomy followed by delayed lipofilling. Matching criteria included age, BMI, breast size, weight of resected tissue and tumor localization. Primary outcome was the number of additional breast surgeries. Secondary outcomes included breast volume asymmetry assessed via 3D imaging and aesthetic evaluation by patients and plastic surgeons using a 4-point Likert scale.

Results
Patient demographics and tumor characteristics were comparable between groups. All LICAP -patients underwent a single-stage procedure or required at most two surgeries (9/15 had only one operation). In contrast, all patients in the lipofilling group required multiple procedures, with a median of four interventions (range: 2–6) ($p < 0.001$). Bilateral surgery for symmetry was significantly more common in the lipofilling group (11/15 vs. 3/15; $p = 0.009$). In the LICAP group, objective breast volume asymmetry was low (mean 9.1% ± 6.5%), and patient satisfaction was high. Complications were minimal, with one case of seroma and one of wound dehiscence.

Conclusions
Immediate partial breast reconstruction using the LICAP flap significantly reduces the number of subsequent corrective surgeries compared to conventional BCS followed by delayed lipofilling. Given its low complication rate, high patient satisfaction, and reduced need for bilateral procedures, the LICAP flap should be considered a valuable option for immediate partial breast reconstruction for critical size resections of the lateral breast.

A single-center retrospective observational study on 106 consecutive lipedema surgeries: Defining the ideal surgical approach

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Objective
Lipedema is characterized by an anormal fat accumulation in lower and upper extremities. Patients suffering from lipedema are complaining of pain in affected area, functional impairment, and body image distortion. Nowadays, various liposuction techniques are available, with the tumescent technique increasingly considered as the gold standard. However, no study has demonstrated a statistically significant difference between these techniques in terms of surgical data or outcomes.
This study aimed to evaluate the efficacy of liposuction in the treatment of lipedema, with the secondary objective to identify potential differences between two techniques: Dry liposuction under tourniquet and Wet liposuction. We focused on surgical characteristics, complication rates, pain relief, functional improvement, and aesthetic satisfaction post-surgery.

Methods
We conducted a single-center retrospective observational study at the University Hospital of Lausanne (CHUV), between 2018 and 2023. The study population included 106 patients who underwent clinical and surgical follow-up at the CHUV. Patients were divided into two groups based on the liposuction technique used. Surgical data and complication rates were analyzed. PROMs were collected preoperatively and approximately 12 months postoperatively using standardized questionnaires.

Results
The two techniques were similar in terms of lipoaspirate volume. Operative time was significantly shorter in the wet technique group. Short-term complication rates, including postoperative anemia, did not differ between the two techniques. While both approaches demonstrated overall improvement in PROMs after surgery, the Wet technique resulted in greater pain reduction and higher aesthetic satisfaction (with fewer cases of asymmetry, skin sagging, and irregularities), 12 months post-surgery.

Conclusions
Lipedema is a complex disease that is still poorly understood. While liposuction can provide symptomatic relief regardless of the technique used, the wet technique has shown superior postoperative outcomes, including improved PROMs and fewer complications. However, optimal results require a multidisciplinary approach. Follow-up in a specialized center is essential to ensure optimal postoperative care.

3D printing fingers models for multi-step complete training in hand surgery: Dissection, tendon suture and micro-sutures

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Objective
Simulation in hand surgery procedures is mandatory to obtain and maintain over the time different surgical skills. Simulation-based training gained widespread acceptance in microsurgery courses over the last decades. In hand surgery training the microsurgical skills require proper skin incision, dissection to identify and prepare the neurovascular bundle. After a complete dissection the microsurgical skills on arterial, vein and nerve sutures could be trained. We developed an innovative portable 3D hand silicone-resins printed device for a complete multi-steps training in hand surgery procedures that include dissection, tendon suture and micro-sutures.

Methods
A dedicated team create 3D manufactured device reproducing a medium size hand. All the fingers could be dissecting. The subcutaneous tissue could be dissect to isolate the deep structures. On ring and small finger, tendon and bones could be identified; in index and middle finger vessels, nerves, tendon and bone are reproduced. On small and ring fingers tendon sutures are trainable. On index and middle finger is possible to train microsurgical sutures of vessels and nerves making a standard microsurgical termino-terminal anastomosis. A patency test system allows to verify the quality of the anastomose.

Results
The models were used during the 25th FESSH (Federation of European Society for Surgery of the Hand) Academy course in Poznan. 88 (50 % specialists in hand surgery and 50% residents) participants complete a questionnaire validated by the FESSH. The participants to the study reported a high-quality reproduction on skin, dermal and subcutaneous tissue. The vessels with the adventitial layer and nerves represents a high-fidelity simulator for microsurgical training; the patency test on the vessels allow to verify the quality of the vessel anastomosis. The tendons and bones resulted strong enough for training a standard tendon Kessler suture. The possibility to replace each finger is consider useful to restart the training and to have a sustainable device.

Conclusions
In hand surgery soft tissue dissection, microsurgical skills, the ability on tendon sutures should be trained before start real surgical approach. We create the first realistic 3D printed silicone-resins hand model for a multi-steps training approach in all these fields.

The role of montelukast in the prevention and treatment of capsular contracture (Baker Grade III-IV) - A meta-analysis and case series

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Objective
Capsular contracture remains a significant challenge in breast implant surgery. Recent research has focused on the role of inflammatory mediators, particularly leukotrienes. The aim of this article was to conduct a systematic review of existing clinical data on an orally active selective leukotriene receptor antagonist (Montelukast) and capsular contracture management in combination with surgery and to present some representative cases.

Methods
A systematic review was performed with the following keywords: "Montelukast", "Singulair", "capsular contracture", "Baker grade", "breast implants". References from identified articles were screened to capture additional studies not retrieved through database searches (PubMed and Semantic Scholar). Moreover, we provided representative case samples in patients with Baker Grade III-IV capsular contracture undergoing surgical treatment with adjuvant montelukast treatment once daily for 90 days.

Results
Five studies with 1343 patients were included. Prophylactic montelukast reduced capsular contracture rates, particularly in Baker grade I-II cases, with statistical significance in two studies. In Baker grade III-IV contracture, montelukast had limited effect, and most patients required surgery. Extended therapy downgraded some severe cases to Baker grade II. In line with the current literature, our case examples confirmed the efficacy of montelukast with minimal side effects.

Conclusions
By synthesizing available evidence, the potential of leukotriene receptor antagonism as a therapeutic adjunct to surgery for the treatment of capsular contracture is promising. The findings could pave the way for new treatment paradigms in breast implant surgery, potentially improving outcomes and patient satisfaction.

Custom tricalcium phosphate implants in septorhinoplasty for cleft lip and palate patients

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Objective
Septorhinoplasty in adults with unilateral cleft lip and palate (UCLP) addresses both functional and aesthetic nasal deformities resulting from the cleft. These deformities often include caudal septal deviation, nasal valve collapse, and alar asymmetry. Surgical approaches aim to restore nasal symmetry, improve airway function, and enhance overall facial aesthetics.

Methods
Seven patients with cleft lip and palate who underwent septorhinoplasty in an interdisciplinary setting involving otorhinolaryngology and plastic surgery were evaluated. Each patient received a custom-made tricalcium phosphate (TCP) implant to reconstruct the cleft-induced bony paranasal sagittal underprojection.

Results
Significant improvement in the sagittal projection of the ipsilateral nasal ala was achieved in all cases. One patient experienced a temporary dehiscence at the intraoral site, necessitating a minor surgical intervention under local anesthesia. Overall, the results were favorable.

Conclusions
Septorhinoplasty in adults with UCLP requires a tailored approach. Custom-made TCP implants and an interdisciplinary approach are highly advisable.

The rise of non-plastic surgeons in reconstructive microsurgery: Challenges & reflections

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Objective

Reconstructive Microsurgery originated as a distinct subspecialty within plastic and hand surgery, known historically for its emphasis on meticulous tissue handling, sophisticated reconstructive strategies, and innovative surgical techniques. However, recent trends indicate an increasing involvement of surgeons from non-plastic surgery specialties – including otolaryngology, oral-maxillofacial surgery, general surgery, and orthopedics – in microvascular reconstruction procedures traditionally managed by plastic surgeons. This presentation explores the implications of this shift, examining concerns within the plastic surgery community about potential impacts on surgical quality, patient outcomes, and training.

Methods

Currently, a significant proportion of microsurgical reconstructions, particularly head and neck cases, are performed by non-plastic surgeons in North America, Australia and parts of Europe. Common motivations for this seem to include departmental efficiency, comprehensive patient care integration, and logistical difficulties coordinating with plastic surgery teams.

Results

The plastic surgery community emphasizes that its unique strengths – extensive training, detailed soft-tissue expertise, and complex reconstructive planning – might be diluted by the involvement of surgeons with comparatively narrower microsurgical training. Additionally, decreasing procedural volume within plastic surgery departments could negatively affect training opportunities for plastic surgery residents and fellows.

Conclusions

To retain relevance and maintain standards, plastic surgeons must actively foster collaborative relationships with other specialties, emphasize consistent clinical excellence, and strategically engage hospital administration. This shifting landscape highlights the necessity for plastic surgery departments to adapt proactively, preserve their institutional presence, and continue to provide the highest quality reconstructive microsurgical care.

The impact of arterial hypertension in upper blepharoplasty for dermatochalasis: A comparative study

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Objective
Dermatochalasis is a skin excess in the upper eyelid which may be associated with orbital fat prolapse, lacrimal gland prolapse, and involutional blepharoptosis. Upper blepharoplasty is the gold standard procedure for correction of dermatochalasis, and it is the third most common plastic surgical procedure in the USA. However, it is performed mostly in elderly patients, who often have arterial hypertension, which might increase postoperative complications. It is not clear weather upper blepharoplasty can be safely performed in these patients, because of the high bleeding risk. We aimed to investigate the safety of blepharoplasty in patients affected by arterial hypertension.

Methods
A comparative retrospective study was conducted in 387 consecutive patients with dermatochalasis of the upper eyelid, who underwent upper eyelid blepharoplasty from January 1st 2015 to June 30th, 2017 at Turku University Hospital in Finland. Exclusion criteria included prior eyelid or orbital surgery. Patients were divided according to the arterial hypertension diagnosis and therapy (211 patients) versus control group (176 patients). Complications and outcomes were compared. Patient's and surgeon's satisfaction were also scored and assessed.

Results
Baseline characteristics showed significant differences in age and comorbidity rates in the arterial hypertension group. Operative time, return to work and follow-up were similar between the two groups. A trend towards an increased estimate blood loss was detected among patients affected by arterial hypertension (7.4 vs 5.6 ml, p=0.163). No significant differences in any kind complications were detected (4.3% vs 5.1%, p=0.809). Ecchymosis requiring further observation was slightly higher in the study group (0.9% vs 0%, p=0.503). Subjective patients' and surgeon's satisfaction tended to be higher in the hypertension group.

Conclusions
Occurrence of arterial hypertension appears to have no effect on the clinical outcomes of upper lid blepharoplasty for dermatochalasis. However, it is important to have a well-compensated antihypertensive treatment before operation.

3D-Guided osteotomy in the surgical management of sacral chordomas: A case series

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Objective
Chordomas are rare, slow-growing malignant tumors. The management of sacral chordomas poses a significant challenge due to their locally aggressive nature and the complexity of surgical resection. We conducted a case series analyzing sacral chordomas treated with 3D-guided osteotomy to enhance surgical precision and minimize morbidity.

Methods
A retrospective case series was conducted, including five patients diagnosed with sacral chordoma between 2020 and 2023. The mean follow-up period was 41 months. Demographic variables, surgical details, clinical outcomes, and local recurrences were analyzed.
Since 2020, patient-specific 3D-printed guides have been utilized at our institution to improve the accuracy of sacral chordoma resections. Preoperative planning involved CT-based 3D surface modeling of the sacrum and MRI for precise tumor localization. The 3D-printed osteotomy guides were depth-limited, allowing for a strictly posterior surgical approach, thereby obviating the need for an anterior exposure of the iliac vessels.

Results
A total of five patients were analyzed, with a mean age of 55.8 years. All chordomas were localized to the sacrum, with transverse sacral amputations performed at levels ranging from sub-S1 to sub-S3. No intraoperative complications occurred, and the mean operating time was 236 minutes (SD ±270 min). The substantial standard deviation was primarily due to a single case where a protective ileostomy was performed concurrently. Histological analysis confirmed the achievement of R0 margins in all patients. Two patients underwent primary flap reconstruction: one with a vertical rectus abdominis myocutaneous (VRAM) flap and one with a gluteus maximus advancement flap.
Postoperative complications included local wound infections requiring surgical revision in two cases. No long-term deficits of the lower extremity were observed, though two patients developed neurogenic bladder dysfunction. At the latest follow-up, no local tumor recurrence and no pulmonary metastases were identified.

Conclusions
Preoperative 3D-based planning and patient-specific 3D-printed osteotomy guides can facilitate precise tumor resection. The depth-limited guide design enabled a posterior-only approach, reducing surgical invasiveness and avoiding anterior vascular exposure. This technique represents a valuable advancement in the surgical management of sacral chordomas.

Single-center experience with 160 cases of robotic-assisted micro- and supermicrosurgery using the Symani® Surgical System

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Objective
Robotic-assistance is a new field in microsurgery providing potential benefits for reconstructive surgery. The Symani® Surgical System has shown feasibility in performing microsurgical and particularly supermicrosurgical anastomoses in several case series. However, large data evaluations are pending and needed to better assess the feasibility of this technique in daily clinical practice.

Methods
We describe our experience with robotic-assisted micro- and supermicro anastomoses in 160 patients who received lymphatic tissue transfer, lympho-venous anastomosis or lympho-lymphatic anastomosis, free flap reconstruction or nerve coadaptation using the Symani® Surgical System between July 2021 to May 2025.

Results
Robotic-assisted arterial anastomoses, lympho-venous, lympho-lymphatic anastomoses or nerve coadaptation were performed. No major complications related to the use of the robotic system were identified. Clinical outcomes regarding lymphatic surgery were comparable to conventional anastomoses, while ergonomics were largely improved. The learning curve for younger microsurgeons, especially in supermicrosurgery, tended to be faster, than with hand-sewn anastomoses.

Conclusions
Our findings suggest that robotic-assisted microsurgery using the Symani® Surgical System is a safe approach and is leading to satisfactory outcomes in different fields of reconstructive surgery particularly and lymphatic reconstruction. Robotic-assisted supermicrosurgery has been shown to be particularly helpful for lympho-venous anastomoses. The benefits of robotic assistance in terms of precision and ergonomics are promising for the future of reconstructive microsurgery.

Minimally invasive ceramic beaded electrosurgical dissectors: Body-wide, rapid hemostatic soft tissue dissections

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Objective
The first United States FDA-approved, 3D printed Minimally Invasive Miniaturized Ceramic Beaded Electrosurgical Dissectors are herein presented with quantification of thermal, histopathological, ultrasound, and clinical outcomes in in vivo/ex vivo subcutaneous porcine subjects/specimens spanning 90 days. Videographic evidence will demonstrate hemostatic dissection speeds of up to 100 cm2 per minute with precise maintenance of the dissection plane. Initial human subject results will also be displayed.

Methods
In vivo, locally tumesced porcine subjects experienced eight 10x10cm abdominal dissections (~50% abdominal surface area) at similar wattages. Standard & doppler ultrasounds and histopathology (H&E, collagen, elastin stains) were evaluated by university-based veterinarians with clinical, photographic, and videographic documentation. Ex vivo, non-tumesced, porcine abdominal specimens were subjected to 20, 30, & 50 W, at 1-2 cm/s ceramic tip speeds, assessed by thermocouple and FLIR imaging with matching H&E histopathology.

Results
Tumesced in vivo tissue temperatures did not exceed 37 degrees C, displayed minimal to no bleeding or lipolytic efflux, and subjects were eating/walking an hour after large (50% abdominal surface area) dissections. In vivo models histopathologically displayed collagenization and uniformity of 100cm2 dissection planes of 0.8-3 minutes durations. 90-day photographic, clinical assessment, histopathology, standard & doppler ultrasound confirmed normal healing parameters. Ex vivo, non-tumesced models showed an average thermal rise of 5 degrees C at 50W, with a histopathologically documented maximum thermal depth effect of 0.09 mm (2-bead model) and 0.16 mm (3-bead).

Conclusions
In vivo and ex-vivo studies demonstrated thermal values and clinical support for the safety and efficacy of beaded dissectors in porcine tissue. In vivo tissue tumescence maintained a normal physiological thermal gradient at ~37 degrees C. Even at the highest 50 W power setting, the 3-bead device thermal effect readings were less than the thickness of a first-degree, epidermal eyelid burn (thinnest human skin). Tumescent anesthesia in in vivo subjects/specimens mitigates thermal effects when coupled with relatively rapid movement of the device tip, characterized by rounded ceramic shapes ensconcing and protecting 1 mm electrosurgical segments, creating bloodless uniform dissection planes.

Perforator versus non-perforator flap for perineal reconstruction: Long-term comparison of complications and quality of life

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Objective
Perineal reconstruction is particularly challenging due to multimorbid patients, high functional demands in a confined anatomical space, and a substantial bacterial load. Large soft tissue defects from oncologic resection or severe infections often require extensive coverage to enable infection control, restore functional rehabilitation, and improve quality of life. While myocutaneous flaps remain a common solution, perforator flaps preserve muscle and reduce donor site morbidity. Given the perineum's essential role in excretory and sexual function, assessing postoperative quality of life represents a critical outcome measure.

Methods
This retrospective single-center cohort study included patients who underwent perineal reconstruction between 2013 and 2023. Postoperative complications and quality of life were compared between perforator and non-perforator flaps using medical records and validated patient-reported outcomes.

Results
The main indications for perineal reconstruction were oncologic resection, Fournier's gangrene, and hidradenitis suppurativa. Perforator flaps were used in 58% of cases, non-perforator flaps in 40%, and a combined approach in 2%. Perforator flaps, were more commonly applied in bilateral defects and larger defect sizes, without prolonging surgical time. Both groups had a 50% complication rate, mainly at the recipient site, including wound dehiscence, partial flap necrosis and infection. Donor site complications were more frequent in the non-perforator group. Overall, 80% of patients reported satisfaction, with no significant differences in patient-reported outcomes between the groups.

Conclusions
Perforator flaps prove to be an effective, muscle-sparing option with lower donor site morbidity, particularly in extensive defects. The limited number of perineal reconstructions over ten years in a high-volume center highlights a valuable opportunity to further strengthen collaboration between resecting and reconstructive specialities to improve functional outcomes and sustainably elevate patient quality of life.

Starting a microsurgical program in a tertiary hospital in Switzerland

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Objective
After a long way of plastic surgery residency and microsurgical training, the task of starting a new microsurgery practice can seem immense. A multitude of challenges but also opportunities exist when starting a new practice. The aim of this study was to evaluate results and share experiences made when starting a new microsurgical program in a tertiary hospital in Switzerland.

Methods
In 2021 a microsurgical program was implemented at the Cantonal Hospital Graubünden in Chur. First a supportive ecosystem was created to successfully perform microsurgery.
Teaching session for nurses and surgical nurses were held. Surgical instruments were prepared and optimized. Indication for microsurgical reconstruction were discussed with other surgical specialities like Traumatology, ENT and Gynaecology. Later a Co-Surgeon approach was established to optimize surgical efficiency and furthermore train young plastic surgery residents. The numberer of free flaps and complication rates were collected.

Results
Since October 2021 until May 2025 a total number of 79 free flaps were performed. The number of flaps could be raised annually. One free flap was performed in 2021, 7 in 2022, 18 in 2023, 31 in 2024 and 22 in 2025 so far. 52 (66%) free flaps were done for breast reconstruction, 15 (19%) for lower limb reconstruction and 12 (15%) for Head and Neck reconstruction. In 9 cases (11%) a revisional procedure had to be done, mainly because of wound healing disorder or hematoma. No flap loss was seen.

Conclusions
Our data and experience show that a microsurgical program with a low complications rate can successfully be implemented in a tertiary hospital in Switzerland. Building a multi-disciplinary microsurgery practice will improve standard of patients care in your hospital.

Enhancing aesthetic outcomes in reduction mammaplasty: Lateral limb elongation and medialized T-Junction closure

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Objective

Achieving harmonious and aesthetically pleasing breast contours is a central goal in reduction mammaplasty. Large, hypertrophic breasts are often laterally displaced, and a subtle medialization of the nipple–areola complex (NAC) and breast axis can result in a more proportionate and youthful appearance. To enable this medialization, planning a longer lateral limb may improve the lateral contour and reduce wound healing issues at the T-junction. Drawing on the aesthetic principles described by Mallucci and Branford—who defined the ideal breast as having a 45:55 upper-to-lower pole ratio and a 20° upward nipple angulation—an elongated lower pole was also considered desirable.

Methods

In our bilateral breast reduction cases, we modified the preoperative markings by asymmetrically elongating both limbs, typically adding 1 cm laterally, with adjustments based on patient age, skin quality, and breast size. Additionally, the T-junction closure was shifted approximately 1 cm medially to realign the breast axis. This approach was refined over time with a focus on aesthetic outcomes rather than fixed measurements, aiming to centralize the NAC, enhance nipple projection, and gently elongate the lower pole.

Results

Clinical observations consistently showed that this technique produced breast shapes closer to the 45:55 aesthetic ideal, with an improved upper pole slope and a longer, convex lower pole. The medial shift of the closure contributed to centralizing the NAC and reducing the visual impression of lateral breast drift. Patients frequently reported satisfaction with the postoperative breast axis, nipple position, and overall contour. Additionally, fewer wound healing issues at the T-junction were observed.

Conclusions

Aesthetic refinement in reduction mammaplasty can be effectively achieved through strategic asymmetry in vertical limb design and medialization of the T-junction closure. This technique provides an elegant, reproducible approach to improve projection, symmetry, and patient satisfaction. The observed reduction in healing complications further supports its routine use in clinical practice.

Impact of radiotherapy and mesh type on capsular fibrosis in implant-based breast reconstruction: A 7-year retrospective study

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Objective
Implant-based breast reconstruction (IBBR) with synthetic or biological mesh is widely used post-mastectomy to improve aesthetic outcomes and implant support. However, the comparative safety and efficacy of mesh types remains debated. Currently, no study has directly compared the impact of oncologic therapies across different mesh types. This study aims to evaluate the incidence and timing of capsular fibrosis in IBBR, with a focus on the influence of radiotherapy (RT) and chemotherapy (CT).

Methods
A retrospective chart review was conducted on patients undergoing IBBR with synthetic or biologic mesh in the department of Plastic Surgery and Gynecology at Cantonal Hospital Aarau (2017-2024). The primary endpoint was the timing and impact of CT and/or RT on capsular fibrosis. The secondary endpoint assessed the postoperative complications.

Results
A total of 91 patients underwent IBBR: 48 with biological mesh (52.7%) and 43 with synthetic mesh (47.3%). 24 patients received RT, 40 patients received CT, and 18 patients received both. Capsular fibrosis occurred significantly earlier with synthetic mesh, independent of the oncological treatment (median 12 vs. 46.5 months, $p = 0.0065$). Additionally, the occurrence of a capsular fibrosis was significantly associated with RT, regardless of the type of mesh used ($p=0.002$). There was no significant difference between overall complications in IBBR with biological and synthetic mesh ($p = 0.88$). The overall complication rates were significantly higher in patients receiving RT only ($p = 0.03$). Logistic regression identified RT as the strongest independent predictor of overall complications ($p = 0.0006$), with neither mesh type nor CT alone being significant.

Conclusions
RT is a major risk factor for complications in IBBR with mesh use. Patients with synthetic mesh experienced a markedly earlier onset of capsular fibrosis. Our findings confirm the current literature, namely that different types of mesh are associated with similar complication rates. These results highlight the importance of informed consent about short-term and long-term complications, particularly when RT is involved. In these patients, autologous reconstruction should be discussed and if patients opt for IBBR, long-term medical follow-up is essential.

Rebalancing symmetry and emotion in facial palsy: Measuring botulinum toxin effects with artificial intelligence

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Objective
Facial palsy, a lower motor neuron disorder, affects millions of people worldwide and may result from infections, trauma, tumors, or autoimmune conditions. While Botulinum toxin type A is a widely accepted treatment for non-flaccid facial palsy, objective data on its effectiveness remain limited. This study aims to evaluate the outcomes of Botulinum toxin injections using both objective AI tools and subjective patient-reported outcome measures (PROMs).

Methods
In this prospective observational study, patients with non-flaccid facial palsy received Botulinum toxin A (OnabotulinumtoxinA) injections tailored to individual needs. Exclusion criteria included age under 18, known hypersensitivity to Botulinum toxin, or lack of follow-up data. Pre- and post-treatment assessment (3 weeks), included facial symmetry analysis using Emotrics and emotional expression analysis using FaceReader. Patient-reported outcomes were assessed using the FaCE and FDI questionnaires. Descriptive statistics and paired t-tests were used to analyze changes.

Results
A total of eleven patients were included (mean age 50.1 ± 18 years). Botulinum toxin injections led to significant improvements in facial symmetry. In the upper face, raising the eyebrows resulted in reduced brow height deviation ($p = 0.032$). In the midface, a large smile with visible teeth showed improved smile angle symmetry ($p = 0.005$). In the lower face, displaying the lower teeth revealed improved symmetry in lower lip height ($p = 0.042$). However, analysis of emotional expression showed no significant changes across the emotions happy, sad, angry, surprised, scared, disgusted, and contempt. In contrast, patient-reported outcomes demonstrated significant improvements in social well-being as measured by the FDI ($p = 0.005$) and in aesthetic satisfaction according to the FaCE scale ($p = 0.041$). Functional scores on the FDI did not change significantly ($p = 0.662$).

Conclusions
Botulinum toxin A significantly improves objective facial symmetry and subjective satisfaction in patients with non-flaccid facial palsy. The lack of measurable change in emotion expression may reflect increased symmetry at the expense of dynamic muscle activation.

Does prepectoral placement delay adjuvant therapies compared to retropectoral immediate implant-based breast reconstruction? A retrospective analysis

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Objective
Prepectoral (PP) immediate implant-based breast reconstruction (IBBR) is becoming increasingly popular compared to retropectoral (RP) reconstruction. This study compares the timing of administration of different adjuvant therapy (ATs) after PP or RP IBBR.

Methods
A monocentric retrospective analysis was conducted on patients undergoing mastectomy and IBBR from January 2018 to December 2023. Preoperative characteristics, mastectomy procedure type, PP or RP implant placement, postoperative outcomes, AT type, and time between surgery and AT administration were collected and analyzed.

Results
167 patients (206 breasts) were included. 123 underwent PP IBBR and 44 RP IBBR. The mean time between surgery and first AT administration was similar in the PP group (45.7 days, SD 39.3) compared to the RP group (37.4 days, SD 33.1) (p-value 0.2100). No significant differences were found in the timing of endocrine therapy (ET), chemotherapy (CT), or radiotherapy (RT) initiation between the PP and RP groups. Patients with seroma had a delayed initiation of CT (83.67 days, SD 123.7) versus those without seroma (42.1 days, SD 29.7) (p-value 0.0298).

Conclusions
The average time between surgery and administration of the first AT following PP IBBR was similar compared to RP IBBR. Postoperative seromas were associated with delayed CT in the overall population.

The role of synthetic meshes in revision surgery after breast augmentation: A personal case series

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Objective
The breast implant exchange/explantation rate has been increasing in the past years due to various types of long-term complications or adverse effects, such as implant migration, rippling, capsular contracture or breast implant-illness. Furthermore, nowadays, there is a shift towards the use of smooth implants due to implant-associated anaplastic large cell lymphoma (BIA-ALCL). In this case, to reduce complications such as migration in the presence of insufficient tissue support and/or implant-pocket-mismatch, especially in patients undergoing breast implant revision surgery, surgical meshes may provide implant support. Here we present a case series about the use of a non-absorbable synthetic bra-shaped mesh in revision surgery of the breast, using implants that do not adhere to the surrounding tissues.

Methods
Eight patients underwent breast revision surgery between 2021 and 2024 due to implant-related long-term complications following aesthetic surgery. Surgical revision included implant exchange, total or partial capsulectomy, creation of a pre-pectoral implant pocket for the new implant and positioning of the non-absorbable synthetic mesh (TiLOOP Bra Pocket®), acting as an internal support for the implants. BREAST-Qs were collected from all patients providing patient reported outcome measurements (PROM).

Results
Of the 8 patients included, the following symptoms were observed: symptomatic capsular contracture (n=3), implant migration (n=4), and breast animation deformity (n=2). After revision surgery, during the follow-up period of 6-36 months, neither infection nor seroma occurred. No implant related complications were registered. The BREAST-Q analysis revealed the highest patient satisfaction in the domain "satisfaction with the implants" (median score 87.5%). Moreover, low breast and chest pain (median score 5-7%) was reported by all patients.

Conclusions
In breast revision surgery after breast augmentation the TiLOOP Bra Pocket® mesh may act as an "inner bra", reducing mechanical stress on the surrounding soft tissues. This may be particularly useful for patients with reduced tissue elasticity opting for smooth implants, possibly reducing complications related implant malposition.

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Poster Presentations

Split pedicled gastrocnemius flap for 3D knee defect: A spare-part concept

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Objective
To present a case demonstrating the use of a split muscle pedicled gastrocnemius flap for three-dimensional soft tissue defect reconstruction around the knee, utilizing the "spare part" concept to optimize functional and aesthetic outcomes while preserving donor site integrity.

Methods
The patient was placed supine with the right leg angled medially. After sterile draping and tourniquet application (260 mmHg), a 4 × 4 × 3 cm ulcer was excised and debrided. Tissue and bone samples were sent for analysis. Following irrigation, a proximally pedicled medial gastrocnemius split flap was planned. Through an S-shaped incision, the medial head was dissected, split longitudinally, and mobilized tension-free into the defect. Perfusion, confirmed via Doppler after tourniquet release, allowed safe flap transfer. The flap was tunneled subcutaneously and inset with absorbable sutures. A 0.2 mm split-thickness skin graft (4 × 4 cm, meshed 1:1.5) from the right thigh was applied. Hemostasis, layered closure, drain placement, fibrin glue, and dressings were completed without complications.

Results
The split-pedicled medial gastrocnemius muscle flap was successfully transposed to the anterior infrapatellar region of the right knee to fill a deep three-dimensional soft tissue defect. The flap demonstrated excellent integration, and a split-thickness skin graft provided durable coverage. Postoperative recovery was uneventful. At the 1-year follow-up, the flap remained stable, with complete wound closure, good functional outcome, and minimal scarring. The patient regained a satisfactory range of motion in the knee, without major contractures or discomfort.

Conclusions
The split-pedicled medial gastrocnemius flap is a reliable option for reconstructing complex anterior knee defects, especially when deep cavities need durable soft tissue coverage. It offers strong vascularized tissue, supports early healing, and delivers excellent functional and aesthetic results with minimal donor site issues.

Negative pressure wound therapy versus conventional dressing in lower limb fractures: Systematic review and meta-analysis

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Objective
Gustilo 3 lower limb fractures represent a significant challenge because of high complication risk. Two management strategies are commonly used for
wound coverage until final closure: negative pressure wound therapy (NPWT) and conventional wound dressing (CWD), also described as standard wound coverage without subatmospheric pressure. Understanding their relative effectiveness is essential to improve patient outcomes. The aim of this systematic review and meta-analysis was to compare the efficacy of NPWT and CWD in Gustilo 3 lower limb fracture management, with a focus on overall infection, superficial infection, and deep infection rates.

Methods
A systematic literature review of PubMed/MEDLINE, Web of Science, and the Cochrane Library was conducted on June 30, 2023 in accordance with PRISMA guidelines. Studies comparing NPWT with CWD for Gustilo 3 fractures were included. Data extraction and quality assessment were performed.

Results
Treatment with CWD was associated with significantly higher rates of overall infection [pooled risk ratio (RR): 0.33; 95% confidence interval (CI): 0.14–0.51] and pooled risk difference (RD: 0.27; 95% CI: 0.15–0.38), superficial infection (pooled RR: 0.35; 95% CI: 0.04–0.66), and deep infection (pooled RR: 0.20; 95% CI: 0.02–0.38) compared with NPWT treatment. Overall infection rate remained significantly higher in the CWD group after analyzing only open tibia fractures (pooled RR: 0.35; 95% CI: 0.21–0.48). Nonunion rate was significant higher in the CWD group (pooled RR: 0.30; 95% CI: 0.00–0.59). Flap failure rate was similar in both groups (pooled RR: 0.09; 95% CI: −0.05 to 0.23).

Conclusions
NPWT appears to be a reasonable option for wound management in Gustilo 3 lower limb fractures in terms of infection rates.

Single versus dual innervation in facial palsy reanimation with free functional muscle transfers: A systematic review and meta-analysis

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Objective
Facial palsy, a neuromuscular disorder resulting from impairment of the seventh cranial nerve can present with a variety of aesthetic and functional challenges. In chases of chronic facial palsy, free functional muscle transfers (FFMTs) have emerged as the gold standard for reanimation. Regardless of the muscle used for FFMT, one significant aspect of controversy is the concept of optimal neural input to power the transferred muscle tissue. The various options for neuronal input to power the transferred muscle remain an issue of debate, especially the question whether a single or two different nerves are used. One can either use a single source, such as the masseteric or hypoglossal nerve or a cross-facial nerve graft (CFNG), for reinnervation or combine two nerve sources, typically a CFNG with an ipsilateral non-facial nerve. The purpose of this study was to review the available clinical data on single versus dual innervation in FFMTs and compare their outcomes to better understand if dual innervation offers a significant benefit.

Methods
A systematic literature review and meta-analysis was performed, following the PRISMA 2020-guidelines. Cochrane, EMBASE and PubMed MEDLINE database were searched following PRISMA guidelines 2020. All publications providing original clinical outcome data on dual nerve innervation of FFMTs in human patients were included.

Results
The initial search yielded 451 studies of which 16 met the inclusion criteria for qualitative analysis and 4 for quantitative meta-analysis. A total of 98 patients were analysed, with 53 (51.94%) women, mean age of 44.5 years in the single-innervation group and 41.2 years in the dual-innervation group, and an average follow-up period of 15 months. Both groups individually showed significant improvements (single innervation 41,1%, p=0.003, dual-innervation 50.7%, p=0.017). Also, the dual innervation group tended to have longer palsy durations and slightly better post-treatment improvements than the single innervation group. However, there is insufficient evidence to conclude a statistically significant difference in outcomes between the two methods.

Conclusions
Both methods show meaningful improvements post-treatment. The dual innervation patients tended to have longer palsy durations and slightly better but more varied post-treatment improvements with overall no statistically significant difference to the single innervation group.

Why complicate things when they can be simple? Case series and systematic review on the reconstruction of full-thickness heel defects

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Objective
The main objective is to present a simple yet effective technique using a modified rhomboid-type local flap for the reconstruction of full-thickness heel defects, illustrated through three clinical cases and supported by a systematic review.

Methods
We present 3 clinical cases of full-thickness soft-tissue reconstruction of the heel using modified rhomboid flaps. The surgeries were performed following multidisciplinary ortho-plastic shared decision-making with initial surgical debridement, followed by flap coverage.
In addition, a systematic review was conducted, using PubMed, Cochrane, and EBSCO, in accordance with the PRISMA guidelines. Studies published up to May 2025 were screened. Only articles discussing local flap options to treat heel defects were included, whereas pedicled and microvascular flaps were excluded. All included studies were organized using Zotero, and relevant data were extracted and synthesized in a comparative table to facilitate narrative analysis of flap types, defects size, and outcomes.

Results
The 3 patients presented with an average defect size of 2.8cm². All defects were successfully closed using modified rhomboid flaps, adapted to the size and location of the defect. Complete healing occurred without donor-site morbidity. Neither complications, nor recurrences were observed during a follow-up period of up to 6 months.
Only 10 studies were included in the review, comprising 58 patients who underwent heel defect reconstruction using local flaps, thereby highlighting a significant gap in the current knowledge. The included studies varied in design and flap techniques, but all focused on outcomes such as flap viability, complication rates, and functional recovery. Local flap options appear to be a feasible solution for heel defect reconstruction, however, they seem most appropriate for small defects.

Conclusions
Local, rhomboid-like flaps are a very effective option to cover small, full-thickness heel defects, associated with good outcomes and low morbidity. Given the limited literature, further case reports and comparative studies are needed to better define their indications and limitations.

Round versus anatomical implants in breast reconstruction: A systematic review and meta-analysis

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Objective
Implant-based breast reconstruction (IBBR) is the most commonly used technique for oncological breast reconstruction. Implants vary in size, composition, texture, and shapes. Numerous studies tried to determine if the postoperative outcomes differ based on the shape of the implant, the two most common being round and anatomical implants. This systematic review and comparative meta-analysis aims to evaluate postoperative outcomes and aesthetic satisfaction following IBBR with round or anatomical implants.

Methods
A systematic review of the literature and comparative meta-analysis were performed to assess the differences in complication rates, patient-reported outcomes (PRO), and aesthetic satisfaction between patients undergoing IBBR with round or anatomical implants. Only comparative studies reporting on postoperative complications or PRO following IBBR were included. Odds ratios (ORs) and 95% confidence intervals (95%-CI) were calculated using a random-effects model.

Results
Nine studies were included representing 2,535 patients – with 1,578 patients and 957 patients in the round and anatomical implant groups, respectively. No difference was observed in overall complication rate between round or anatomical implants groups (OR= 0.46; 95%-CI= 0.14-1.48; p= 0.19). Specific complication rates and PRO were also similar across groups.

Conclusions
IBBR with a round or anatomical implant have similar complication rates and aesthetic results. The choice of implant type must therefore be a shared decision guided by the surgeon's experience, the patient's morphology, and personal preference to offer optimal results.

Patients in need for reconstructive surgery in sub-Saharan Africa: Estimating the unmet surgical burden

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Objective
In sub-Saharan Africa (SSA), the critically limited access to surgical care is a major public health challenge. Among surgical specialties, reconstructive surgery is particularly affected despite its key role in treating highly morbid conditions such as burns, trauma, post-oncologic defects and congenital anomalies. While the shortage of trained surgeons is documented in the literature, the burden of treatable conditions requiring plastic surgery remains poorly quantified, and no comprehensive estimates are currently available. This study aimed at providing the first estimate the annual need for plastic and reconstructive procedures in SSA and assess the availability of specialized centers.

Methods
We analyzed data from the Global Burden of Disease (GBD), EUROCAT, and the American Society of Plastic Surgeons to estimate the number of surgeries needed for burns, congenital malformations, soft tissue cancers, breast reconstruction, and pressure ulcers. For conditions in which an intervention is not systematically required, intervention rates were extrapolated from U.S. data and scaled to SSA demographics. Data on the number and distribution of plastic centers were gathered from the College of Surgeons of East, Central and Southern Africa (COSECSA), the West African College of Surgeons (WACS), and published sources.

Results
We estimate that at least 496,289 plastic surgeries (95% CI:408,702 - 577,665) are needed annually in SSA. Burns accounted for 256,687 surgeries, followed by congenital malformations with and cancer-related reconstructions with 133,654 and 105,948 procedures, respectively. Despite this demand, only 81 plastic surgery centers were identified across 17 of the 48 SSA countries. 31 countries had no accredited center, leaving an estimated 318 million people without access to specialized care.

Conclusions
There is a substantial gap between the high volume of reconstructive needs and the limited availability of trained specialists and infrastructure in SSA. This study is based on the limited available data and likely to strongly underestimate the actual numbers. However, it is to our knowledge the first attempt to estimate the number reconstructive procedures needed and highlights the urgency of investing in surgical training, infrastructure, and access to address a largely overlooked yet critical public health issue.

Postoperative outcomes and complications in menopaused patients after reduction mammoplasty

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Objective
Symptomatic macromastia is a debilitating condition that affects millions of women worldwide. Although reduction mammoplasty is the gold standard treatment, the association between estrogen levels and wound healing has been established in literature. Hence, this study aimed to compare the postoperative outcomes and complications between menopaused and non-menopaused women after reduction mammoplasty.

Methods
This study offers a retrospective multimodal observation and analysis comparing menopaused and non-menopaused women. Using data collected from January 2018 to May 2024, patients who met the selection criteria were divided into 2 groups. Complications following reduction mammoplasty were recorded and analyzed.

Results
A total of 110 patients were included in this study, among them 80 patients were in the non-menopaused group and 30 in the menopaused group. Our statistical analysis indicated that the hospital stay was significantly longer in the menopaused group (P=0.008). Additionally, postoperative dog ears were significantly more frequent in the menopaused group (P=0.034). Conversely, scar hypertrophy occurred more frequently in non-menopaused patients (P=0.02).

Conclusions
Although menopaused women undergoing single or bilateral reduction mammoplasty had longer duration of hospital stay, they did not have higher risk of postoperative complications, except for higher rate of developing dog ears, which may be ascribed to the faltering estrogen levels of this population. Non-menopaused women had a higher rate of hypertrophic scars.

The role of flow couplers in free flap monitoring: Evidence from a systematic review

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Objective

Flow couplers (FCs) are implantable devices that enable continuous Doppler-based monitoring of venous flow following microsurgical free tissue transfer. Their integration directly into the anastomotic site promises the potential for early identification of vascular compromise, particularly in buried flaps where conventional monitoring is restricted. This systematic review critically evaluates the clinical efficacy, diagnostic accuracy, limitations, and potential complications associated with FCs in reconstructive microsurgery.

Methods

A systematic literature review was conducted according to the PRISMA guidelines across PubMed, Web of Science, and Cochrane Library through April 2025. Eligible studies reported outcomes of FC use in free flap reconstruction, including flap survival, signal loss events, venous thrombosis, diagnostic accuracy, and comparative efficacy.

Results

Eleven studies comprising 1,775 free flaps, of which 876 were FC-monitored, were included in the final synthesis. Across included studies, flap survival in FC-monitored cases consistently exceeded 95%, with reported rates as high as 99.1%. Diagnostic sensitivity of FCs for detecting venous compromise was uniformly high, frequently approaching 100%, and negative predictive values ranged from 98.9% to 100%. However, specificity and positive predictive values were variable; some studies reported false-positive rates between 5.1% and 13.6%, often leading to unnecessary re-exploration. Only one study reported false-negative events. FCs have been reported to be particularly advantageous in the monitoring of buried flaps, reducing dependence on external skin paddles and thereby improving the outcomes of single-stage reconstructions. Comparative studies found FCs equivalent or superior to hand-held Doppler and Cook-Swartz probes in continuous surveillance, but emphasized the need for clinical correlation when interpreting signal loss.

Conclusions

FCs provide highly sensitive, continuous monitoring of venous outflow in microsurgical reconstruction, which may be especially advantageous in buried flap scenarios. However, variable specificity and a non-negligible false-positive rate necessitate judicious interpretation. Further high-quality, prospective studies are needed to define optimal use protocols and diagnostic thresholds.

Julius von Szymanowski's Legacy: The H-plasty for forehead skin defects

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Objective
Revisiting the contribution of Julius von Szymanwoski and his H-plasty technique by evaluating its continued relevance in modern forehead reconstruction, particularly within aesthetic units.

Methods
A historical review of Szymanowski's original surgical work was conducted alongside a retrospective analysis of our case series with forehead reconstructions using the H-plasty over a two-year period in our plastic surgery department. Data included patient demographics, defect size and location, surgical technique variations, aesthetic outcomes, and complications.

Results
The H-plasty, as originally designed by Szymanowski as double opposing rectangular advancement flaps, offers strategic advancement flaps that minimize tension and preserve key aesthetic landmarks such as the brows, glabella, and hairline. In our series, all patients had satisfactory cosmetic outcomes as judged by both surgeons and patients. Complications were minimal and included minor wound dehiscence and transient edema. The technique was most effective in small to medium-sized mid-forehead and paramedian defects.

Conclusions
Julius von Szymanowski's H-plasty remains a cornerstone technique in reconstructive plastic surgery for forehead defects. Its design reflects enduring principles of tension redistribution, scar camouflage, and respect for facial subunits — reinforcing its place in the modern reconstructive surgeon's armamentarium.

Beyond the T-Junction: Reinforce strategic sites in superomedial pedicle mammoplasties using a dual dermal flap technique

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Objective

Breast reduction using superior or superomedial pedicles provides favorable long-term aesthetic outcomes, particularly in terms of breast shape and projection. However, the T-junction and the vertical- areolar junction remain prone to wound dehiscence with reported dehiscence rates of 4% to 20%, contributing to a higher postoperative burden, suboptimal aesthetic results, and increased healthcare costs. The development of preventive techniques is a key aspect as scar quality is considered one of the most important factors by patients. Only a few techniques in the literature describe the use of dermal flaps at strategic suture sites to reduce tension and provide additional support and blood supply.

Methods

A comprehensive literature review was performed via PubMed to identify existing techniques using dermal flaps for tension reduction and scar reinforcement in breast reduction surgery using the search terms dermal flap" "dermo-glandular flaps," "de-epithelialized flaps," "breast reduction," "mammoplasty," "scar dehiscence," and "scar complication". We then present a modified superomedial pedicle technique incorporating two small, semi-circular de-epithelialized dermal flaps positioned at strategic high-risk points for wound complications, the T-junction and the junction between the vertical scar and the areola. Those flaps aim to redistribute tension and provide vascularized support.

Results

Three studies were identified reporting the use of small dermal flaps at the T-junction, all showing promising results with lower rates of scar-related complications compared to standard techniques (approximately 4.3% vs. 1.4–2.9% with dermal flaps). None of the identified studies described reinforcement of the vertical–areolar junction, as proposed in our technique, which includes dermal flap placement at both the T-junction and the vertical–areolar level.

Conclusions

Here, we present a dermal flap technique designed to reinforce weak points in T-inverted scars for superomedial and superior pedicles, based on the concept of tension redistribution and vascular enhancement. Building on previous studies, we believe that this minor modification can help stabilize scars without increasing operative time, ultimately promoting better postoperative healing.

PSG algorithm for nipple-sparing, skin-reducing mastectomy: Is it safe?

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Objective

Nipple-sparing, skin-reducing mastectomy (NS-SRM) offers oncologic safety and aesthetic benefits for ptotic breast cancer patients. However, complications such as nipple-areola complex (NAC) and skin flap necrosis remain significant challenges. Preserving NAC viability is crucial for optimal aesthetic outcomes. This study presents an algorithm developed from a cohort of 22 patients to mitigate these complications.

Methods

Between 2020 and 2025, 22 patients underwent NS-SRM with either autologous (n=16) or implant-based (n=6) reconstruction. The algorithm incorporated preoperative assessment, intraoperative techniques, and postoperative management strategies. Intraoperative measures included indocyanine green angiography to assess NAC perfusion. Postoperatively, a cohort of patients received hyperbaric oxygen therapy (HBOT) to enhance tissue oxygenation and promote healing. Additionally, topical nitroglycerin ointment was applied to NAC to improve blood flow and reduce necrosis risk in high-risk patients.

Results

Among the 22 patients, 16 received autologous reconstruction, and 6 received implant-based reconstruction. Minor wound scabs were observed in several cases. Two instances of NAC necrosis were reported. HBOT was administered to these patients, resulting in resolution of ischemic changes and preservation of the NAC in one case. No cases of flap loss or the need for reoperation were observed.

Conclusions

The proposed algorithm for NS-SRM with either implant or autologous reconstruction effectively minimizes complications such as NAC and skin flap necrosis. Intraoperative assessment of NAC perfusion and postoperative HBOT are critical components of this approach. Early intervention with HBOT in cases of compromised NAC perfusion can prevent progression to necrosis, thereby preserving aesthetic outcomes and reducing the need for additional surgical interventions.

A systematic review and meta-analysis of the sensitivity and efficacy of indocyanine green fluorescence dye in sarcoma resections

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Objective

Sarcomas, a group of malignant tumors, are particularly prone to high rates of local recurrence. Achieving negative surgical margins in sarcoma resections is critical for reducing local recurrence and improving overall patient outcomes. Indocyanine green (ICG) fluorescence imaging has emerged as a potential intraoperative adjunct to enhance tumor visualization during surgery, thereby reducing the risk of local recurrence. The goal of this study was to systematically review and analyze the existing literature on the sensitivity and effectiveness of ICG in improving tumor resection margins during sarcoma surgeries.

Methods

A literature search was conducted using PubMed and Embase, adhering to the PRISMA 2020 guidelines, for studies published up until February 2025. Clinical studies involving patients treated with ICG and undergoing intraoperative near-infrared imaging were included. Studies were excluded if they did not report data on tumor sensitivity or the impact of ICG on resection margins. The Methodological Index for Non-Randomized Studies (MINORS) was used to assess the quality of non-randomized studies.

Results

Of the 20 articles identified, 4 met the inclusion criteria. The aggregated data from these studies showed that ICG was sensitive to sarcomas in 66 out of 72 cases. Additionally, in 14 out of 50 cases, physicians reported that ICG imaging helped reduce positive margins. In the remaining 36 cases, the ICG-defined margins were consistent with the planned resections.

Conclusions

This meta-analysis suggests that Indocyanine Green is a sensitive fluorescent agent for sarcomas and may be a valuable intraoperative tool when combined with near-infrared imaging during tumor resections. Further research is needed to assess the safety and efficacy of ICG for sarcomas and to establish ICG and near-infrared imaging as standard techniques for tumor resections.

Comparing short- versus long-term quality of life following autologous or implant based breast reconstruction

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Objective

Breast cancer is the most common malignancy in women, with 2.3 million new cases and 670,000 deaths reported in 2022. As mastectomy rates rise, so does demand for breast reconstruction. Patients undergoing reconstruction report improved satisfaction and quality of life. Autologous reconstruction offers more natural results, higher long-term satisfaction, and is associated with more short-term complications, whereas alloplastic reconstruction is linked to a higher risk of long-term complications. While prior studies compared these techniques, few addressed how follow-up duration affects patient-reported outcomes. This systematic review examines the impact of short-term (≤12 months) versus long-term (>12 months) follow-up on BREAST-Q outcomes in both reconstruction types.

Methods

This PRISMA-compliant, PROSPERO-registered systematic review and meta-analysis included randomized and cohort studies reporting BREAST-Q outcomes after autologous or alloplastic breast reconstruction. Studies were stratified by follow-up (≤12 vs. >12 months). Domain scores were pooled based on data availability. Random-effects meta-analysis used inverse variance weighting, heterogeneity was assessed via I^2 statistic.

Results

9141 records were identified, after removing 2706 duplicates, 6435 were screened. 195 studies met inclusion criteria. Physical well-being was highest in long-term autologous (76.07) and lowest in short-term alloplastic reconstruction (68.57), with autologous slightly favored across time points. Sexual well-being was generally lower, with alloplastic scoring higher in both short-term (58.28 vs. 48.59) and long-term (56.66 vs. 50.29) comparisons. Satisfaction with breasts peaked in long-term autologous (70.23) and was lowest in long-term alloplastic (62.86), while short-term results were similar. Psychosocial well-being was highest in long-term autologous (74.94), with slightly higher short-term scores for alloplastic (72.78 vs. 67.37). Heterogeneity was high across most comparisons (I^2 = 74.5%–99.8%).

Conclusions

Autologous breast reconstruction demonstrated superior long-term outcomes in physical, psychosocial, and breast satisfaction domains. In contrast, alloplastic reconstruction showed higher sexual well-being and slightly better short-term scores. Follow-up duration significantly influences PROMs and should be considered to manage patient expectations and tailor preoperative information.

Stigma experiences in children with acquired or congenital facial differences

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Objective
In facial surgery, the boundaries between aesthetic and reconstructive approaches are often blurred. Facial interventions may play a critical role in improving psychosocial well-being as individuals with visible facial differences frequently experience stigmatization. In children, even the risk of stigmatization and thus psychological burden later on in life is a key factor in surgical decision-making. This study aimed to assess stigma experiences in children and adolescents with congenital or acquired facial differences. We analyzed the impact of perceived stigma on emotional and behavioral difficulties, and explored potential predictors.

Methods
Participants were identified via hospital records from two institutions. Inclusion criteria: 1) visible facial difference ≥1 cm² (burn scar, infantile hemangioma, capillary malformation, or congenital melanocytic nevus); 2) age 9 months - 16 years; 3) ≥6 months post-trauma for burn patients; 4) no evidence of mental retardation; 5) fluent understanding of German. Parents completed questionnaires, and children ≥7 years participated in standardized interviews. Stigma was assessed using the Perceived Stigmatization Questionnaire. Patient data were compared to a matched control group without facial differences. Medical, demographic and parental psychological variables were examined as predictors of proxy-perceived stigmatization.

Results
Out of 124 eligible patients, 87 participated. There were no significant age or gender differences. Children with facial differences reported significantly more stigma experiences than controls. Commonly cited experiences included expressions of pity, staring and startled reactions; about 25% reported teasing. Proxy-reported stigma was predicted by larger lesion size and older child age. Type of facial difference (congenital vs. acquired) and gender showed no significant effect.

Conclusions
Children and adolescents with facial differences are at increased risk of stigmatization, with psychosocial implications that go beyond functional impairments. Larger and more visible differences correlate with higher stigma exposure. These findings emphasize the importance of integrating psychosocial considerations into surgical decision-making, particularly in pediatric plastic surgery. Not only aesthetic but also reconstructive aspects must be assessed with regard to their impact on mental health and psychological well-being.

Robotic-assisted lymphovenous anastomosis to treat periorbital lymphedema and systematic review of lymphatic reconstruction of face and neck lymphedema

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Objective

Head and neck lymphedema is a burdening disease, affecting up to 90% of patients with head and neck cancer. However, it has only recently gained increasing attention, therefore lacking diagnostic and therapeutic guidelines. Up to date, initial treatment typically consists of conservative methods such as complete decongestive therapy, whereas a surgical approach is mainly considered in patients with persisting head and neck lymphedema. In this study, we report on the first robotic-assisted lymphovenous anastomosis in the face and neck region and systematically review the current literature on surgical lymphatic reconstruction in patients with head and neck lymphedema.

Methods

A systematic review on surgical lymphatic reconstruction in patients with head and neck lymphedema was conducted following the PRISMA guidelines. The main outcomes were lymphedema reduction and improvement of functionality (e.g. eyelid closure), additionally subjective improvement of the disease was assessed. In our case report, we present a patient with bilateral periorbital lymphedema receiving robotic-assisted periorbital lymphovenous anastomosis on each side.

Results

A total of 468 articles were identified in the literature search, of which 10 studies were included in the systematic review. All included articles reported a reduction of lymphedema using different reconstructive techniques, with lymphovenous anastomosis being the most frequently used method to restore lymphatic drainage. Our case report showed successful reduction of eyelid lymphedema following robotic-assisted periorbital lymphovenous anastomosis.

Conclusions

Reconstructive lymphatic surgery is a safe and effective treatment method of head and neck lymphedema, showing promising results regarding lymphedema reduction and improvement of quality of life. Robotic assistance may improve surgical outcomes in the head and neck region by enhancing precision and facilitating access to narrow anatomical sites such as the oral cavity. Further studies with larger patient cohorts and standardized measurement methods are required to create definite recommendations for surgical treatment of head and neck lymphedema.

Immediate pre-pectoral implant reconstruction for silicone-induced breast siliconomas: Case report and literature review

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Objective

Free silicone injection for breast augmentation is forbidden in many countries since the eighties (in 1976 by the FDA) due to its association with severe local and systemic complications, including siliconomas. Nonetheless, this prohibited practice persists in certain regions of the world, mainly induced by low cost. Chronic granulomatous reactions may develop years after injection and can mimic malignancy, autoimmune disease, or metabolic disorders. Management is often clinically, radiologically, and surgically challenging. Subcutaneous mastectomy is frequently required, and subpectoral implant reconstruction remains the most common approach.

Methods

We report the case of a 36-year-old woman who presented with chronic bilateral breast pain, nodularity and ptosis 16 years after free silicone injections practiced in Spain. MRI revealed multiple siliconomas involving the breast parenchyma, subcutaneous tissues, pectoralis major muscles, and axillary regions. We performed a bilateral sub-total nipple-sparing mastectomy via a superior hemi-areolar approach with mastopexy and correction of asymmetry, followed by immediate reconstruction using pre-pectoral implants. Radical excision was not achievable due to extensive involvement of subcutaneous fat, mammary gland and underlying musculature.

Results

The procedure was uneventful. Histopathology confirmed a granulomatous foreign body reaction consistent with siliconomas. At 3-month follow-up, the patient reported significant pain relief, a high level of satisfaction with the aesthetic outcome, and no postoperative complications. She preserved her breast sensibility.

Conclusions

Siliconomas may develop or persist long time after silicone injection, often necessitating surgical intervention and prolonged follow-up. Diagnosis and preoperative planning can be challenging due to nonspecific clinical and radiological findings. To our knowledge, this is the first reported case of immediate pre-pectoral implant-based reconstruction in this context. Our findings support nipple-sparing mastectomy combined with mastopexy and pre-pectoral prosthetic reconstruction as a safe and effective procedure to achieve esthetic and functional outcome and improve siliconomas associated pain.

Proximal tibial nerve entrapment: A rare surgical emergency not to be missed

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Objective

Proximal tibial nerve compression is a rare entity. While distal nerve compressions (i.e. tarsal tunnel syndrome) are well recognized, entrapments under the soleus arch remain uncommon and underreported. We describe a unique case of acute tibial nerve compression secondary to a ruptured popliteal cyst, complicated by popliteal vein thrombosis and compartment syndrome of the popliteus muscle. This triad has not yet been described in the literature.

Methods

A 68-year-old man presented with sudden, intense pain in the left popliteal fossa, followed by sensory loss in the sole of the foot and inability to flex the ankle and the toes. MRI revealed an effusion in the popliteal fossa, most likely as a consequence of a ruptured popliteal cyst resulting in diffuse contrast-enhancement and swelling of the popliteal muscle compressing the popliteal vein and the tibial nerve.

Results

Emergency surgical exploration confirmed tibial nerve entrapment under the soleus arch, as well as popliteal vein thrombosis and a necrotic aspect of the popliteus muscle. The necrotic muscle was excised, and the soleus arch was released to achieve a complete decompression of the tibial nerve. Postoperative recovery was partial, with significant improvement in pain and sensation, but persistent weakness in plantar flexion.

Conclusions

This case illustrates a rare and severe presentation of proximal tibial nerve compression and popliteal vein thrombosis secondary to popliteus muscle compartment syndrome resulting from a rupture of a popliteal cyst. Early imaging and immediate surgery are key to maximizing functional recovery and minimizing long-term senso-motoric deficits.

Lymphatic surgery to improve brain function: Preclinical and clinical evidence and potential robotic applications

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Objective

The central nervous system (CNS) was long believed to be devoid of lymphatic drainage. The recent (re)discovery of the meningeal lymphatics and the glymphatic system has revolutionized our understanding of cerebrospinal fluid (CSF) homeostasis and neuroimmune interactions. In addition, recent case reports suggest a role for lymphatic microsurgery in the deep neck to improve brain function, particularly in neurodegenerative disease. However, there is a lack of sufficient preclinical and clinical studies to establish the effects of cervical lymphatic surgery on neurological diseases.

Methods

We systematically searched multiple databases (PubMed, EMBASE, Web of Science, Scopus) for animal studies exploring the benefits of meningeal lymphatic drainage improvement in brain disease and disorders. Inclusion criteria comprised peer-reviewed articles in English that focus on meningeal lymphatic drainage in animal models of brain diseases and disorders. In addition, we evaluated our previous cases of lymphatic reconstruction in the deep neck and face with regards to effect on cerebral function.

Results

Our findings revealed multiple treatment methods used to enhance meningeal lymphatic drainage of waste products in disease conditions. Therapeutic strategies - such as VEGF-C delivery, photobiomodulation, pharmacological agents, and genetic modulation - were consistently associated with improved MLV structure and function, enhanced clearance of neurotoxic proteins (e.g., Amyloid-⍰), reduced neuroinflammation, and improved cognitive and motor performance across the disease models. No animal studies studying the effect of cervical lymphatic surgery on brain function were found. Lympho-venous anastomoses performed in the deep neck in May 2023 improved neurological and cognitive functions in a patient with 13q deletion 2 years follow-up.

Conclusions

The findings underscore the importance of meningeal lymphatic pathways in neurological conditions and advocate for further research to elucidate their mechanistic roles and potential as therapeutic targets. Reconstructive lymphatic surgery of the drainage pathways in the neck may be beneficial to treat these conditions. Robotic-assisted micro- and supermicrosurgery may improve access and technical feasibility.

Conclusions

Given their comparable long-term effectiveness, donor site selection should primarily focus on reduction of patient morbidity. In contrast, the recipient site significantly affects clinical outcomes, with axillary placement leading to favorable results for upper extremity lymphedema, as well as the lower leg for lower extremity cases. Scar tissue release may have a more influential role on VLNT outcomes than previously recognized.

Global variation in patient-reported outcome measures after microsurgical head and neck reconstruction: Discrepancies amongst surgical disciplines

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Objective
Patient-reported outcome measures (PROMs) have become an integral part of outcome evaluation in reconstructive microsurgery. This study explores the usage of PROMs in microsurgical oncological head and neck reconstruction across surgical specialties and geographic regions.

Methods
A systematic literature search was conducted in Embase, Medline and Web of Science to identify studies reporting on adult patients undergoing oncological head and neck free flap reconstruction. Data extracted included PROM tools used, study demographics, surgical disciplines involved, procedural details, and outcomes.

Results
Of 5006 screened studies, 354 (n = 30,369 patients) met inclusion criteria. A total of 94 PROM tools were identified. The most frequently used were the University of Washington Quality of Life Questionnaire (34.75%), non-validated tools (25.99%), and the EORTC QLQ-H&N35 (22.32%). Donor site-specific PROMs were underutilized (22%), though more frequently employed when plastic and reconstructive surgeons were involved (31.11% vs. 15.53%, p=0.019). PROM selection varied significantly by specialty and geographical location, and only 20% of studies were interdisciplinary.

Conclusions
Substantial heterogeneity exists in the use of PROMs in head and neck reconstruction, with variations driven by specialty and region. This lack of standardization hinders meaningful cross-study comparisons and the development of robust quality benchmarks. A unified, validated PROM framework is urgently needed to support international evidence-based practice. Future efforts should prioritize interdisciplinary collaboration and incorporate donor site evaluation to comprehensively assess outcomes in oncologic head and neck reconstruction.

Scarless reduction mammaplasty

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Objective
Reduction mammaplasty techniques often leave unsatisfactory scars.Techniques that leave less noticeable scars have been advocated for more than 20 years. The aim of this study was to assess the percentage of cases operated using a scarless technique and to review the results of our surgery.

Methods
A questionnaire was sent to 500 surgeons in Switzerland and in France and the author reviewed 11 cases of her technique of reduction mammaplasty without scar.

Results
More than 150 plastic surgeons responded to the questionnaire. Less than 10% practice the scarless technique. The results of the author cases are in agreement with those of the literature with a high degree of patients satisfaction. The author will show her tricks and the follow up to achieve good results.

Conclusions
The scarless reduction mammaplasty technique remains a little-used technique with good results.

Reimbursement policies of Swiss health insurances for the surgical treatment of symptomatic abdominal tissue excess after massive weight loss: A retrospective cohort study

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Objective
Patients with symptomatic abdominal tissue excess following massive weight loss (MWL) often experience various types of skin affections associated with hygiene challenges, functional impairments and psychological distress, all of which significantly impact their quality of life. Abdominoplasty effectively addresses these issues when conservative treatments prove ineffective. However, health insurance companies (HICs) in Switzerland frequently deny reimbursement. This study aimed at evaluating HICs' reimbursement policies for abdominoplasty, quantifying time delays and additional costs generated by reconsideration due to initial rejections while assessing postoperative well-being of patients.

Methods
A retrospective cohort study was conducted including patients undergoing abdominoplasty for symptomatic abdominal tissue excess after MWL between July 2019 and December 2023. Eligibility required HIC approval, informed consent and legal age. Primary outcomes measure the number of reimbursement requests needed per patient, the duration until approval and additional diagnostic and/or therapeutic interventions required after initial rejection. Secondary outcomes focused on additional consequent costs, differences in baseline characteristics and symptomatology, as well as well-being improvements.

Results
Of 52 patients included, 33 received cost approval after a single request, whereas 19 required multiple submissions. The mean duration until approval was 15 weeks, with a 26-weeks delay for the multiple-request group, resulting in additional costs of CHF 715 per patient. Both groups were comparable in terms of baseline characteristics and preoperative signs and symptoms. Abdominoplasty significantly improved patients well-being, with no differences between groups.

Conclusions

Initial reimbursement denials for abdominoplasty led to delays, including prolonged symptomatology and increased healthcare costs, despite clear surgical indications. Enhancing collaboration between HICs and plastic surgeons could improve insurance coverage policies for abdominoplasty.

Vascularized lymph node transfer (VLNT) for upper and lower extremity lymphedema: A practical algorithm for ideal donor and recipient site selection

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Objective

Vascularized lymph node transfer (VLNT) involves the autologous transplantation of functioning lymph nodes to a lymphedematous region of the body. Despite various proposed donor and recipient sites, their respective long-term effectiveness and complication rates remain inadequately studied. Therefore, the goal of this study was to create a practical algorithm to guide donor and recipient site selection in patients undergoing VLNT for upper and lower extremity lymphedema.

Methods

An encrypted, prospectively maintained database was screened for patients treated with unilateral VLNT for chronic extremity lymphedema between January 1, 2016, and December 31, 2023. Surgical effectiveness was assessed using circumferential limb measurements over time, and complications were graded according to the Clavien-Dindo classification.

Results

A total of 161 patients met the inclusion criteria, comprising 132 (82.0%) patients with upper and 29 (18.0%) patients with lower extremity lymphedema. All donor sites, including 129 (80.1%) groin-based, 16 (9.9%) lateral thoracic, 13 (8.1%) mesenteric, and three (1.9%) omental lymph node flaps, showed comparable long-term reductions in limb circumference for both upper and lower extremity lymphedema. Regarding recipient sites, axillary placement (n = 125, 94.7%) yielded greater and more rapid reductions in upper extremity limb circumference compared to the distal forearm (n = 6, 4.5%). For lower extremity lymphedema, the lower leg (n = 18, 62.1%) was a more effective recipient site than the groin (n = 10, 31.0%). Simultaneous waterjet-assisted liposuction resulted in intermittent improvements but demonstrated no long-term benefit. Complications occurred in a total of 14 (8.7%) patients and were exclusively observed in patients undergoing groin-based (n = 12, 9.1%) or thoracic-based VLNTs (n = 2, 6.9%).

Functional total lip reconstruction with free neurotized musculocutaneous serratus flap: A case report

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Objective

Total lip reconstruction remains a significant surgical challenge, especially when aiming to restore volume, contour, dynamic function, and sensibility. Traditional static free flaps, such as the radial forearm flap, often provide structure but lack mobility. While functional muscle transfers like the gracilis flap offer improved function, they lack adequate skin coverage, compromising aesthetics. To overcome these limitations, we employed a novel approach using a neurotized musculocutaneous serratus anterior free flap, enabling motor and sensory reinnervation in total lower lip reconstruction.

Methods

A 30-year-old woman underwent total lower lip reconstruction after complex arteriovenous malformation (AVM) excision. After preoperative embolization, the AVM was completely excised. A serratus anterior musculocutaneous flap was harvested from the right thoracic wall. For neurotization, a sensory branch was coapted to the mental nerve, and a motor branch was connected to the left marginal mandibular nerve. The flap was inset as a functional sling anchored bilaterally to the modiolus, with microvascular anastomoses in the left cervical region. Multiple staged revisions were subsequently required to restore normal anatomy and an aesthetically satisfactory result.

Results

Initial healing was complicated by partial necrosis of the inner mucosal lining, leading to a contracted lip and limited oral aperture. Over 18 months, the patient underwent 4 revision procedures, significantly improving lip contour, projection, and function. At final follow-up (May 2025), the patient exhibited evidence of sensory recovery, with Semmes-Weinstein filament testing revealing a sensitivity threshold of 0.02 grams on the skin paddle, 0.6 grams at the commissures, and 1 gram at the median portion of the red lower lip. ENMG demonstrated muscle reinnervation, with visible contraction of the serratus muscle upon stimulation of the marginal mandibular branch of the facial nerve.

Conclusions

This case shows that total lip reconstruction with a free neurotized serratus anterior flap can achieve both aesthetic integration and functional restoration. Motor and sensory nerve coaptation enabled dynamic oral competence and measurable sensory recovery. Though revisions were needed to refine results, this technique is a promising option for complex lip defects requiring volume and mobility restoration.

Comparison of coupler-assisted versus hand-sewn venous anastomosis in DIEP flap breast reconstruction: A single-center retrospective study

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Objective

Microsurgical venous anastomosis remains a critical step in achieving successful free flap transfer. The venous coupler device has gained popularity due to its technically less demanding and time-efficient application. However, only limited data exist regarding its use in deep inferior epigastric perforator (DIEP) flap breast reconstruction. This study aims to compare the use of microvascular anastomotic couplers with hand-sewn venous anastomosis in DIEP flap breast reconstruction.

Methods

We conducted a single-center retrospective analysis of patients who underwent unilateral or bilateral autologous breast reconstruction with a DIEP flap after oncologic mastectomy between January 2018 and June 2024. The cohort was divided into two groups: a coupler-assisted group and a hand-sewn group. The primary outcome was flap ischemia time and secondary outcomes were postoperative complications at the donor and recipient sites.

Results

A total of 114 patients were included in this study, encompassing 141 DIEP flap breast reconstructions. 76 (53.9%) of the DIEP flap breast reconstructions were performed with a venous coupler-device, and 65 (46.1%) with a hand-sewn venous anastomosis. Flap ischemia time and operating time were significantly shorter in the use of venous coupler-device ($p < 0.001$ for each). We compared postoperative complications at both donor and recipient sites between the coupler-assisted and hand-sewn groups and found no statistically significant differences.

Conclusions

Venous coupler-assisted anastomosis in DIEP flap breast reconstruction does not increase postoperative complication rates and offers significant time savings in both flap ischemia and overall operative duration. Given its reliability and efficiency, the microvascular coupler can be safely incorporated into DIEP flap breast reconstruction.

Dermatitis following expander-based breast reconstruction after skin sparing mastectomy: Diagnostic work-up and Treatment

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Objective
Post-breast reconstruction dermatitis is a rare finding. In literature, cases with both autologous and non-autologous reconstruction (i.e. expanders, breast implants) have been described. Since the underlying pathomechanisms are unclear, there is no consensus about the correct treatment. The study aim was to analyze all cases with dermatitis occurring after breast reconstruction in our center within the last 2 years regarding diagnosis, treatment and outcome.

Methods
Ten patients presenting with post-breast reconstruction dermatitis after prepectoral expander-based breast reconstruction following skin- or nipple sparing mastectomy were retrospectively reviewed. In collaboration with our dermatology department, we performed allergy testing using a Patch test for all materials contained in the implanted expander (Flora™, Motiva, Establishment Labs, Costa Rica) and used during surgery, as well as materials used for postoperative care (plasters, creams, etc.).

Results
All 10 patients developed a dermatitis of the skin of the mastectomy flap that presented after a median of 30 days (range 23-150 days) after expander insertion with a skin rash localized to the skin of the operated breast.
Infection was excluded in all patients. In 8 patients, local application of cortisone cream was sufficient to resolve the dermatitis, in one patient systemic, oral prednisone therapy was necessary for 9 days. In one case, the rash was self-limiting. Treatment success was achieved within 7-9 days in all patients.
Allergy testing revealed the following: no allergy in 4 patients, allergy to nickel (type IV) in 4 patients and allergy to NSAID in two patients (type IV reaction).

Conclusions
Dermatitis of the breast skin after expander-based reconstruction is usually treated successfully with local corticosteroids. Differential diagnoses, including infection or red breast syndrome must be ruled out. Since the expander used in our patients contains nickel in the port, patients with allergy against this component might be particularly prone to dermatitis when using this type of expander.

Analysis of postoperative outcomes in unilateral versus bilateral DIEP flap reconstructions: A single-center retrospective study

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Objective
The DIEP flap is among the preferred techniques in autologous breast reconstruction due to better long-term outcomes, including higher satisfaction and more natural breast shape compared to implant-based breast reconstruction. With the rise in genetic testing, bilateral DIEP reconstructions are becoming more common, though they carry a higher risk of complications. This study aims to compare the risks between unilateral and bilateral procedures to improve surgical decision-making.

Methods
A retrospective, single-center review was conducted on female patients who underwent DIEP flap breast reconstruction between January 2018 and May 2024. The study included patients with complete medical records and follow-up data, excluding those with incomplete records. Patient characteristics, operative details, and complications were thoroughly analyzed, with donor site complications assessed per patient and recipient site complications per breast.

Results
During the study, 141 DIEP flaps were performed on 114 women, with 87 unilateral and 27 bilateral reconstructions. Age and BMI were similar between groups. However, chemotherapy was more common in the bilateral group (85% vs. 47%, $p = 0.0011$). Operative time was significantly longer in bilateral procedures (650 vs. 460 min, $p < 0.0001$). There were no statistically significant differences in recipient and donor site complications across groups. The hospital stay was significantly longer in the bilateral group (11 vs. 8.8 days, $p = 0.024$).

Conclusions
Bilateral and unilateral DIEP flap breast reconstructions have similar complication and early take-back rates.

Exploring the role of artificial intelligence in lymphedema management: An international multidisciplinary evaluation of its safety, reliability, and impact on decision-making

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Objective
Upper and lower extremity lymphedema is a progressive and debilitating disease, significantly impairing quality of life of affected patients. Despite the recently established effectiveness of physical therapy and (super-)microsurgical interventions, current guidelines commonly remain outdated and lack stage-specific treatment algorithms. This gap in evidence-based guidance may prompt clinicians with limited experience to seek support from large language models such as ChatGPT. Given the potential of artificial intelligence to rapidly integrate emerging research, this study aimed to assess the safety and reliability of ChatGPT-generated, personalized treatment recommendations for lymphedema management.

Methods
ChatGPT-generated treatment recommendations were evaluated for six fictional cases of lymphedema. An interdisciplinary panel of 67 doctors and lymphedema therapists from 34 institutions across 11 different countries assessed the quality and reliability of these treatment recommendations using the validated DISCERN questionnaire.

Results
ChatGPT received high ratings for its diagnostic accuracy and treatment relevance, particularly among resident doctors. In contrast, experienced board-certified lymphedema specialists rated the responses significantly lower, expressing concerns over lack of sources and inadequate communication of clinical uncertainties. Younger participants reported higher overall trust in ChatGPT and greater willingness to incorporate it into clinical decision-making. In general, advanced practice nurses appeared to evaluate ChatGPT more critically than physicians.

Conclusions
ChatGPT shows great potential as a supplementary decision-making aid for the management of lymphedema, particularly for less experienced clinicians. However, its current value is still limited for experienced lymphedema specialists due to significant limitations in transparency of citations and prompt sensitivity.

Experimental models and perfusion assessments in vascularized bone grafts: A systematic review

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Objective
Vascularized bone grafts (VBGs) are assumed to have advantages over non-VBGs, including preservation of cell viability, infection resistance, and accelerated osteogenesis. Indications include the reconstruction of large bone defects or non-unions associated with poor vascularity and previous radiation. However, clinical evidence supporting their superiority is limited. Thus, a return to the basic science of animal and cadaver models seems appropriate. This systematic review focuses on perfusion assessment in VBG studies. Only by understanding the vascular anatomy and ensuring perfusion is truly maintained in VBGs, can we expect to find any difference to non-VBGs in subsequent studies.

Methods
A systematic review was performed according to the PRISMA checklist in February 2025 with the following search terms: ((vascularised bone graft*) OR (vascularised bone flap*) OR (vascularised bone transplant*) OR (vascularized bone graft*) OR (vascularized bone flap*) OR (vascularized bone transplant*)) AND ((model*) OR (animal*) OR (cadaver*)). Out of 520 initially identified publications, 25 studies were included.

Results
Pedicled and free VBGs from various anatomical sites were examined, covering indications, contraindications, benefits, and limitations. A multitude of perfusion assessment techniques were employed, including histology, radiography, CT, MRI, Tc-based scintigraphy, near-infrared fluorescence imaging (NIRFI), methylene blue, angiography, radioactive microspheres and fluorochrome bone labeling (FBL). Histology helps confirm viable osteocytes and osteoid formation, while FBL and angiography provide insight into vascular integrity. CT effectively visualizes intraosseous vessels, while scintigraphy and MRI offer indirect perfusion markers but have high false-positive rates. NIRFI seems accurate intraoperatively but is of limited use postoperatively. Advantages and disadvantages of each method are explored and recommendation on their use in VBG-research given.

Conclusions
Reliable perfusion assessment is crucial in research on VBGs and requires a multimodal approach. Future research should standardize models and timing of perfusion assessment while accounting for confounding factors such as spontaneous neoangiogenesis and considering pitfalls of each modality. This overview provides the foundation for future studies comparing functional outcomes of VBGs versus non-VBGs in animal models.

Posters

Bioengineered collagen scaffolds (BioBridge™) for lymphatic reconstruction in therapy-refractory secondary lymphedema: A case report

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Objective

BioBridge™ (Fibralign Corp., USA) is a nanofibrillar collagen scaffold designed to support lymphangiogenesis by mimicking the extracellular matrix, promoting endothelial migration and unidirectional lymphatic flow. Its pro-angiogenic and anti-edema effects have been described by Hadamitzky and Huang et al. (2016). We present a case of therapy-refractory secondary lymphedema (LE) treated with BioBridge™ implantation. The therapeutic goal was to bypass a segmental lymphatic obstruction—not to repair intrinsic dysfunction—therefore, microsurgical techniques such as vascularized lymph node transfer (VLNT) or lymphovenous anastomosis (LVA) were not used as first-line. This report evaluates clinical effects on infection burden, lymphatic rerouting, and symptom distribution over a 1-year follow-up.

Methods

A 64-year-old woman with secondary LE following multiple abdominal surgeries was treated at our clinic after 21 episodes of cellulitis between 2018 and 2023, including 10 hospitalizations. Pre-op MRI showed edema in the abdomen, mons pubis, and proximal thigh. Indocyanine green (ICG) lymphography confirmed segmental lymphatic obstruction. Conservative treatment included compression garments, lymphatic drainage, antiseptic washes, and antibiotic prophylaxis. In Jan 2024, 10 BioBridge™ filaments were implanted subcutaneously from right to left groin.

Results

At 3 months, ICG showed early rerouting of lymphatic flow to the contralateral groin and reduced abdominal edema. At 6 months, LE was confined to the mons pubis. Infection rate decreased from 3.8 to 2.3 episodes/year. While the disease initially involved the abdomen, thigh, and mons pubis, following the intervention it was confined to the mons pubis alone. Antibiotic use declined. Among the 3 post-operative infections, 1 was mild (treated with oral antibiotic), 1 moderate (i.v. then oral), and 1 severe with bacteremia requiring hospitalization.

Conclusions

In this case, BioBridge™ led to clinical improvement, including reduced edema and fewer, more localized infections. Observed effects are compatible with its pro-angiogenic and anti-edema properties. Although a clear improvement was achieved, relevant infections still occur. A pubic VLNT is under evaluation to complement the scaffold approach. This combination may offer added benefit in selected cases. Further studies are needed to confirm these findings.

Scarless breast reconstruction with three free flaps

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Objective
Breast reconstruction with free flaps is considered in many cases the gold standard for breast reconstruction, enabling durable and natural results while at the same time the need for implants.
Among the main drawback of these technique is the need to make scars at the donor site that can be difficult to be concealed in some cases.

Methods
In this report, we describe the use of the free omental flap for breast reconstruction after right nipple sparing mastectomy in a thin patient who had previously undergone a TUG (transverse upper gracilis) - PAP (profunda artery perforator) flap reconstruction for the left breast.

Results
The omental flap harvest was performed with a laparoscopic (scarless) approach. The omental flap was insetted using a Vycril mesh in order to give the new breast the desired natural shape. Recovery was uneventful.

Conclusions
To the best of our knowledge, it is the first time this kind of reconstruction has been described in Switzerland.

Complex nasal reconstruction using free SCIA-SB / SIEA flaps and exteriorized skin- grafted pedicles

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Objective
Reconstruction of extensive nasal defects is technically challenging due to the nose's aesthetic importance and intricate three-dimensional structure. The gold standard for nasal reconstruction typically involves local flaps, with or without the addition of free flaps, depending on the defect's extent and complexity. In cases where traditional reconstructive options are unavailable, innovative approaches may be considered.

Methods
A 79-year-old female patient presented with a large nasal defect following the excision of an extensive basal cell carcinoma and multiple failed reconstruction attempts. Due to the unavailability of pedicled forehead flaps, an alternative approach was adopted using abdominal free skin flaps, specifically a flap based on the superficial branch of the SCIA (SCIA-sb), followed by a flap based on the superficial inferior epigastric artery (SIEA), incorporating an exteriorized skin-grafted pedicle to minimize further damage to facial tissues.

Results
This approach achieved nasal reconstruction with satisfactory aesthetic and functional outcomes by utilizing redundant abdominal skin, while avoiding the use of large local facial flaps that could have resulted in additional tissue injury and distortion.

Conclusions
Abdominal skin represents a promising donor site for flaps in the reconstruction of complex nasal defects. While the exteriorized skin-grafted pedicle technique carries inherent risks, it warrants further investigation as a potentially valuable advancement in the reconstructive armamentarium.

Childbearing and pregnancy trends among female plastic and orthopaedic/trauma surgeons in german-speaking countries

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Objective
Female surgeons are confronted with obstacles when trying to cope family planning and surgical duties. We therefore set out a study to characterize the perception of female plastic and orthopaedic and trauma surgeons towards pregnancy, childbearing, and experiences with work-related burdens in Germany, Switzerland, and Austria.

Methods
A multicentric self-administered 48-item online survey was distributed electronically through email via the Association of the German Society for Plastic, Reconstructive and Aesthetic Surgery (DGRPRAEC), the Association of the Austrian Society for Plastic, Aesthetic and Reconstructice Surgery (OGPAERC), the Swiss Plastic Surgery (SGPRAC), and the Germany Society for Orthopaedics and Trauma Surgery (DGOU), which forwarded the email to their female members. The survey included basic demographic questions, pregnancy history including complications, desire to have children, opinions towards burdens having children as a plastic or orthopaedic/trauma surgeon, and fertility issues.

Results
Mean age during first pregnancy was 33 years. More than a third of all surgeons intentionally postponed pregnancy for professional reasons. About a third of the German surgeons was banned from clinical work during pregnancy while six percent of all Swiss/Austrian surgeons were banned. In accordance, the Swiss/Austrian surgeons were operating more often during pregnancy. Obstetric complications ranged from 41% to 58%. The Swiss/Austrian plastic surgeons had the least total complication rate. The rate of cervical insufficiency was approximately 4% which was higher than in the normal population and in US surgeons while fertility issues and miscarriage were lower in the German-speaking plastic surgeons.

Conclusions
Despite national maternity protection laws, obstetric complication rates of surgeons in German-speaking countries and the US were similar. Cervical insufficiency was even more prevalent in the study population which could be associated with a higher age of the expectants. Therefore, certain measures need to be implemented, e. g. work modification instead of bans as well as proactive consideration of potential family planning by training institutions and education of female employees concerning pregnancy could aid in overcoming the obstacles of gender gap in the surgical specialties, which is essential given the current gender distribution amongst medical students.

Hand acrometastasis from renal cell carcinoma: A case report

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Objective

Acrometastases are secondary lesions located distally to the elbow and knee, representing only 0.1% of all metastases. The first case was described by Hinterstoisser in 1889. The average age of affected patients is 59 years, with a male predominance. The primary tumor most commonly originates from the lungs, followed by the kidneys and the colorectal region. In the upper limb, the phalanges are most frequently affected, followed by the metacarpals and then the carpal bones. Clinical symptoms include pain or discomfort leading to a reduced range of motion. Diagnosis is based on radiographs showing irregular osteolytic lesions without periosteal reaction. The diagnosis is confirmed by biopsy.

Methods

A 79-year-old right-handed patient with a known history of clear cell renal carcinoma treated by right nephrectomy in 2013, noticed 11 years later a painless swelling on the dorsal side of his left hand, without any history of trauma. Radiographs showed a lytic, expansile, heterogeneous lesion in the proximal metadiaphyseal region of the 3rd metacarpal, with cortical breach. Biopsy confirmed the diagnosis of clear cell renal carcinoma metastasis. A 3rd ray amputation was performed, along with carpometacarpal arthrodesis of the 2nd and 4th rays and transposition of the 2nd ray onto the capitate. Due to instability, an intermetacarpal ligament reconstruction between the 2nd and 4th rays was performed using an ipsilateral palmaris longus graft. The 2nd–4th commissure was reconstructed with a local flap.

Results

Histopathological analysis revealed an R1 resection margin. The postoperative course was uneventful. Radiographs on postoperative day 10 showed arthrodesis with hardware in place. A CT scan at two months confirmed consolidation of the arthrodesis. A dorsal scar adherent to the bone was noted, yet the overall aesthetic and functional results were satisfactory. The patient subsequently underwent adjuvant radiotherapy.

Conclusions

Acrometastasis is a poor prognostic indicator for survival and represents a diagnostic challenge. In 10% of cases, it is the first manifestation of an occult cancer, and is misdiagnosed in nearly half of the cases, most often as an infection or gout. No standardized therapeutic strategy currently exists; however, a 2023 literature review recommends amputation at the nearest joint to minimize tissue loss and preserve function.

Intramuscular recurrence of noninvasive breast papillary carcinoma after mastectomy and lipofilling

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Objective
Papillary carcinoma of the breast is a rare entity. It is considered as an in situ lesion that may harbor an invasive component, which determines prognosis.

Methods
We report the case of a young woman presenting with in situ papillary carcinoma without invasive component and negative sentinel lymph node, who presented a multifocal intramuscular recurrence shortly after mastectomy and immediate breast reconstruction with implant and lipofilling.

Results
A young woman presented with a low-grade intraductal papillary carcinoma without invasive component. She underwent a skin-sparing mastectomy and sentinel lymph node biopsy, with disease-free margins and lymph node. She underwent immediate breast reconstruction with an expander, later replaced by an implant and lipofilling. She developed an early invasive recurrence within pectoralis and serratus muscles. Histopathology showed an encapsulated papillary carcinoma without metastasis. After en bloc resection, she had adjuvant radiotherapy and hormonotherapy.
Cases of EPC recurrence in the literature are linked to residual tumor after resection, invasive component, or treatment with breast-conserving surgery. In this report, resection margins after initial surgery were close to the tumor. The lipofilling may have disseminated residual tumor cells present at the margins of the mastectomy site. This could explain the early subcutaneous recurrence of this non-invasive form of breast cancer.
Secondly, although many studies have proven lipofilling to be safe after mastectomy, it was also suspected to promote breast cancer recurrence in some in vitro studies. Some forms of encapsulated papillary carcinoma of the breast may be aggressive even though no biomarker has been identified yet, so these cases require special caution.

Conclusions
Even though lipofilling was shown to be oncologically safe, we question the use of early autologous adipose tissue transfer in this unusual type of cancer where physiopathology remains unclear.

Does intraoperative heparin administration reduce postoperative complications in DIEP flap breast reconstruction: a single-center analysis

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Objective
The deep inferior epigastric perforator (DIEP) flap is the gold standard for breast reconstruction. Limited evidence exists regarding the efficacy of intraoperative anticoagulants in reducing pedicle thrombosis and their potential to elevate the risk of hematoma formation. Hence, in this study, we report a retrospective analysis comparing postoperative microsurgical outcomes and complications of patients who have received intraoperative administration of unfractionated heparin (UFH), versus patients who have not received intraoperative UFH.

Methods
This single-centre analysis offers a retrospective review of all female patients who underwent DIEP flap breast reconstruction from January 2018 to June 2024. Subjects were divided into two groups, a control group and a treatment group with the intraoperative administration of UFH. Patient characteristics, intraoperative details and postoperative outcomes were analysed. Postoperative complications were classified into acute microsurgical complications (<4 days), and delayed complications (>4 days).

Results
This study included 114 patients (141 breasts), corresponding to 48 patients in the control cohort, and 66 patients in the UFH cohort. No significant differences were observed in terms of acute microsurgical or delayed postoperative complications. Notably, the risk of hematoma was also comparable. However, ischemia time and total operative duration were significantly prolonged in the control group ($p<0.05$), highlighting a potential procedural advantage in the intervention cohort.

Conclusions
Perioperative anticoagulant prophylaxis using UFH did not diminish acute thrombotic complications; however, it was also not associated with an increased risk of hematoma and bleeding. These findings offer valuable insights regarding the clinical relevance and safety profile of perioperative UFH administration.

Fortuitous discovery of chronic occlusion of the right external iliac artery during preoperative assessment for abdominoplasty: Implications for clinical and surgical practice

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Objective

A 31-year-old female patient sought consultation for an abdominoplasty. A preoperative abdominal CT scan incidentally revealed a complete chronic occlusion of the right external iliac artery. Further investigations demonstrated recanalisation of the arterial axis from the common femoral artery, with blood flow maintained via superficial collateral vessels. A primary downstream re-injection at the femoral bifurcation was observed from a branch of the deep femoral artery with retrograde flow, without stenotic lesions. A differential diagnosis between external iliac artery endofibrosis and atherosclerosis was considered. No treatment was initiated due to the absence of symptoms. However, the risk of iatrogenic injury to epigastric vessels, which could have led to limb thrombosis and/or ischaemia, resulted in the decision not to proceed with the abdominoplasty.

Methods

This case report describes the management and clinical reasoning involved in this particular case.

Results

This case was discussed in a multidisciplinary meeting, where it was determined that revascularisation of the EIA was not indicated. After carefully weighing the risks of a thrombolic event with the potential benefits, the decision was made to forgo the abdominoplasty.

Conclusions

Preoperative imaging, though not always routine, can reveal critical incidental findings that may significantly alter surgical decisions. Plastic surgeons must have a thorough understanding of underlying vascular anatomy, including anatomical variations, to anticipate and mitigate surgical risks. Multidisciplinary discussions are crucial when unexpected anatomical findings arise, ensuring optimal patient safety and tailored management. In cases of chronic arterial occlusion, collateral circulation can maintain perfusion, but surgical interventions must carefully consider the risk of disrupting compensatory pathways. This case underscores the importance of individualized surgical decision-making, where the risks of vascular compromise must be carefully weighed against the benefits of elective procedures.

Recurrent postoperative seroma and fistula after lumbar spine instrumentation: A case report and doxycycline sclerotherapy protocol

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Objective

Postoperative wound complications after spinal instrumentation, particularly in the context of previous infection and multiple revision surgeries, present a significant therapeutic challenge. We report a complex case of recurrent seroma and fistula following multi-level lumbar spondylodesis managed with an interdisciplinary approach including plastic surgery and novel use of doxycycline sclerotherapy.

Methods

A 75-year-old patient with a history of L3-L5 spondylodesis in 2017, complicated by postoperative hematoma and infection, required extension of fixation to L5-S1 in 2018. In 2024, the patient presented with a rod fracture and underwent revision. Postoperatively, a seroma developed with purulent discharge and altered consciousness; imaging revealed air in the cerebral ventricles, raising suspicion for dural breach. Multiple surgical revisions followed, and despite negative peroperative findings, cerebrospinal fluid (CSF) leakage was later confirmed via Beta-Trace protein. A pedicled SGAP flap was used to obliterate dead space, but was complicated by persistent drainage, cutaneous fistula, and chronic infection with S. epidermidis. CRF leakage stopped spontaneously.

A new revision in November 2024 involved mobilisation of the flap and complete capsulectomy of the seroma cavity. Persistent seroma formation prompted implementation of a doxycycline sclerotherapy protocol: daily drainage via radiologically placed drain, with 200 mg doxycycline instilled every 48 hours and left in situ for 24 hours before removal.

Results

The sclerotherapy protocol resulted in progressive decrease in drain output, ultimately reducing to <30 cc/24h. Following stable imaging, the drain was removed. A follow-up ultrasound 7 days post-drain removal confirmed absence of significant fluid collection. No further fistula or seroma formation was noted during 6 months follow-up.

Conclusions

This case highlights the complexity of managing postoperative wound complications in spinal surgery, suchh as previous infection, hardware exposure, and suspected CSF leakage. Pedicled SGAP flap provided durable soft tissue coverage, and doxycycline sclerotherapy proved to be an effective salvage option for persistent seroma. This multidisciplinary approach emphasizes the importance of collaboration between spine surgeons, plastic surgeons, microbiologists, and radiologists in managing such high-risk patients.

Microsurgical versus complex physical decongestive therapy for chronic breast cancer-related lymphoedema: A cochrane systematic review

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Objective

Chronic breast cancer-related lymphoedema (BCRL) is a debilitating complication of breast cancer treatment, significantly affecting patients' quality of life (QoL). Although complex decongestive therapy (CDT) remains the standard of care, it primarily provides symptomatic relief. Microsurgical techniques such as lymphovenous anastomosis (LVA) and vascularised lymph node transfer (VLNT) have shown promising effects on both volume reduction and QoL, but are not yet routinely implemented. This review aimed to evaluate the outcomes of microsurgical interventions (LVA and VLNT) compared to CDT, focusing on treatment efficacy and QoL.

Methods

We systematically searched the Cochrane Breast Cancer Group's Specialised Register, CENTRAL, MEDLINE, Embase, and Web of Science for randomised controlled trials (RCTs) and non-randomised studies of interventions (NRSI) published from 1993 onward. Studies comparing LVA or VLNT to CDT in adult BCRL patients were eligible; those involving other lymphoedema types or lower limbs were excluded. Two reviewers independently screened records and extracted data. Primary outcomes were arm volume and QoL. Risk of bias was assessed per Cochrane methods; certainty of evidence using GRADE. Data synthesis used random-effects models with DerSimonian–Laird estimation.

Results

Out of 1,409 identified records, 599 duplicates were removed, and 810 records were screened. Seven studies met the inclusion criteria and were included in the analysis, all comparing microsurgical interventions to CDT. Following the risk of bias assessment, only a small number of high-quality comparative studies were identified that assessed the defined primary and secondary outcomes.

Conclusions

The current evidence base is limited by a lack of high-quality, prospective studies directly comparing microsurgical interventions and conservative therapy in BCRL, while taking QoL into account. Further randomised controlled trials are needed to establish the comparative effectiveness of these approaches and to define the role of microsurgery in clinical practice.

Clinical characteristics and management of post-surgical pyoderma gangrenosum: A systematic review and case report

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Objective
Pyoderma gangrenosum (PG) is a rare, rapidly progressing inflammatory skin disease that can occur postoperatively, referred to as postsurgical pyoderma gangrenosum (PSPG). PSPG is often misdiagnosed as other postoperative complications, resulting in delayed treatment and poor outcomes. We conducted a systematic review to analyze clinical presentation, risk factors, treatment strategies and outcomes of PSPG.

Methods
A database search was performed to identify all cases of PG following surgery or invasive procedures, with symptom onset within 30 days. Surgical procedures were categorized into eight groups: breast, cardiothoracic, abdominal, obstetrics/gynecology, vascular, orthopedic, head & neck, and puncture & other. Data extraction included information on diagnosis, treatment timing and modality, and outcomes. We included a representative case report from our institution following body contouring surgery to highlight diagnostic challenges.

Results
The search strategy identified 1521 cases of PG, of which 284 met the inclusion criteria. Of these, 65.4% were women, with a mean age of 51 years. Symptoms appeared on average 8.5 days post-surgery. Initial signs often included pustules and bullae, progressing to painful ulcerations with violaceous, undermined borders and systemic symptoms like fever. Histopathology showed neutrophilic infiltrates and sterile cultures. Treatment primarily involved high-dose corticosteroids, averaging 98 days. Some patients received combination therapy with immunosuppressants or IVIG. Combination therapy was associated with fewer complications ($p = 0.0097$), but recurrence rates were not significantly different ($p = 0.075$). PSPG occurred most frequently after breast (33.1%) and abdominal (21.5%) surgeries. Common initial misdiagnoses included surgical site infection, necrotizing fasciitis, abscess, and cellulitis. Autoimmune disease was present in 34% of complicated cases; hematologic disease in 10%.

Conclusions
PSPG typically occurs within two weeks post-surgery. It mimics infections but presents with ulceration with violaceous, undermined borders. Early recognition and corticosteroid-based treatment, especially combination therapy can reduce complications and improve outcomes. These findings emphasize the importance of early, accurate diagnosis and appropriate treatment to improve patient outcomes.

Synthetic simulators for microsurgery training: A systematic review

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Objective
Microsurgery has a steep learning curve. Synthetic simulators have proven to be useful training tools for the initial learning stages, as well as being ethically sound, viable, safe, and cost-effective. The objective of this review was to determine the quality, effectiveness, and validity of these simulators as well as to assess their ability to evaluate microsurgical skills.

Methods
A systematic review following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines was performed. We searched databases (Web of Science, Scopus, and PubMed) to identify original articles describing synthetic training models for microsurgery. Three reviewers evaluated articles for inclusion following predefined selection criteria. Data were extracted from full-texts of included articles.

Results
Thirty-nine studies met the inclusion criteria. A total of 38 different devices have been recorded. Microsurgical training devices offer a low-cost, fast, and consistent method to concretely quantify and assess the initial microsurgical skills of trainees using standardized exercises that can be scored by the examiner. According to the authors, the outcomes were satisfactory, with a tangible improve- ment in microsurgical abilities, despite the lack of a common comparison scale.

Conclusions
Thanks to their availability, cost, and effectiveness, synthetic models are the recommended option to train basic, intermediate and advanced proce- dures before executing them on in vivo models.

Hand gangrene after repetitive IV midazolam injections

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Objective

In the IV drug user (IVDU) population injection may inadvertently be intra-arterial or in the subcutaneous tissue causing a various range of complication ranging from simple cellulitis to artero-venous embolization.

Case presentation

We present here a case of a full hand mummification and necrosis following repeated injection of chopped midazolam at the elbow, forearm and hand. A 36 year-old man presented to the emergency de- partment with a 24 months history of slowly progressive necrosis to his right. Dry necrosis had progressively evolved into gangrene with almost spontaneous amputation at the level of the wrist. Surgical intervention was performed urgently with amputation at the proximal forearm level. No early complications were detected, and the patient did not show up at least follow-up. The present case represents an example of progressive microembolisation initially involving the hand and progressively affecting the whole forearm in an impressive mummification process over a 2-year period.

Conclusions

Minimal but repetitive distal drug embolization can give silent and initially negligible symptoms, before clear signs of tissue sufferance are detected. When dealing with patients with IVDU history, anamnestic record of eventual use of chopped/pulverized should be performed. Careful examination of the limb should be always conducted, considering the risk of silent embolization and long term potentially devastating consequences.

Periorbital necrotizing fasciitis: Presentation to management

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Objective

Periorbital necrotizing fasciitis is a rare but severe infection that spreads quickly along fascial planes, often leading to sepsis and associated with significant morbidity and a high mortality rate. Early recognition is paramount, yet initial symptoms such as localized pain and eyelid swelling are often nonspecific. These are quickly followed by blister formation, periorbital skin and subcutaneous tissue necrosis, and systemic symptoms. Management of necrotizing fasciitis usually involves aggressive surgical debridement alongside broad-spectrum intravenous antibiotics. However, this approach is unsuitable for the periorbital area due to risks of eyeball exposure, decline in vision, and disfigurement.

Methods

In this report, we present the case of an 85-year-old male patient referred to our clinic for evaluation of a suspected upper eyelid abscess, accompanied by a rapidly worsening decline in his overall clinical condition.

Results

The patient underwent two surgical debridements of the periorbital area, followed by reconstruction using a combination of a Mustardé cheek advancement flap and a full-thickness skin graft. No surgical complications were observed, and the patient achieved both aesthetic and functional improvement shortly after definitive reconstruction.

Conclusions

Early recognition and debridement are crucial to ensure good outcomes, while reconstructive surgery techniques allow satisfactory cosmetic results.

An unexpected intraoperative twist: Unilateral absence of the latissimus dorsi muscle in a 69-year-old comorbid patient: A case report and adaptive surgical strategies for breast reconstruction

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Objective
Congenital absence of the latissimus dorsi (LD) muscle is an exceptionally rare occurrence. When present, it is most frequently associated with broader genetic anomalies, particularly Poland syndrome, and is commonly accompanied by the absence of other muscles such as the pectoralis major, pectoralis minor, and trapezius. In the context of reconstructive microsurgery, the LD flap remains a cornerstone technique, extensively employed for defect coverage throughout the body and still considered the standard for breast reconstruction when free flaps are contraindicated.

Methods
A 73-year-old female patient with multiple comorbidities and significant arterial disease was scheduled for a left breast reconstruction using a pedicled latissimus dorsi flap. Due to her general condition, a free flap was ruled out. Intraoperatively, no LD muscle was found during the dissection, despite the preservation of surrounding anatomical landmarks. Surprised by the finding, the surgical team proceeded with a pedicle serratus anterior musculocutaneous flap, which provided an adequate volume for defect coverage.

Results
A review of the literature reveals only three previously documented cases of unilateral congenital absence of the LD muscle not associated with other malformations. One case was discovered during cadaveric dissection, while the other two were intraoperative findings in reconstructive surgeries. All reported cases involved female patients. In one of these cases, as in ours, preoperative CT imaging demonstrated the absence of the LD muscle, but it was not reviewed beforehand due to the rarity of the condition. Alternative solutions included the use of two cobined freestyle perforator-based flap and, in another case, a thoracodorsal artery perforator (TDAP) fasciocutaneous flap. The laterality involved was left-sided in two cases and right-sided in one.

Conclusions
This case emphasizes the need for intraoperative flexibility in reconstructive surgery, especially in high-risk patients. It also underlines the critical importance of carefully reviewing all available preoperative imaging, including CT scans, regardless of how routine the anatomy may seem. Although rare, congenital LD absence should be considered in unusual dissections, and knowledge of alternative local flaps can ensure successful outcomes when standard options are unavailable.

Bulging of the masseter muscle following botulinum neurotoxin type A injection: A case report

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Objective

Botulinum toxin type A (BoNT-A) is incremental in managing facial paralysis, especially synkinesis and asymmetry. Though the masseter muscle is not innervated by the facial nerve, it may still be affected in facial nerve palsy due to abnormal regeneration and coordination. A targeted treatment with botulinum toxin BoNT-A has been shown to effectively reduce this abnormal activity. It is crucial to perform a precise injection of the neurotoxin, as uneven distribution can raise undesirable side effects. This case report discusses a female patient with right-sided facial palsy who developed the rare complication of paradoxical masseteric bulging after BoNT-A injection.

Methods

A 48-year-old woman with a 25-year history of right-sided idiopathic facial palsy presented with synkinesis, hypertonicity, and facial asymmetry. Examination showed right-sided synkinetic movements and masseter hypertonicity. 36 units were administered in total, covering the areas exhibiting synkinesis. Two units of BoNT-A were injected into the right masseter, followed by another 2 units 12 days later due to limited response. One week after the second injection, a visible bulge in the anterior right masseter was developed, pronounced during clenching. Ultrasonography confirmed superficial masseter bulging, consistent with the rare complication of paradoxical masseteric bulging after BoNT-A injection.

Results

The uneven distribution of BoNT-A was found to be caused due to the presence of intramuscular septations within the masseter muscle, which hinders the uniform diffusion of the neurotoxin. This anatomical barrier can result in inadequate weakening of certain muscle regions, leading to compensatory bulging in areas unaffected by the injection.

Conclusions

This case highlights the need to consider muscle anatomy and its variations when injecting BoNT-A into the masseter in facial palsy patients. Intramuscular septations may impede even toxin diffusion, causing only partial inactivation and compensatory bulging. Awareness of such anatomical variability is essential to avoid complications and ensure optimal outcomes.

Autologous dermis reinforcement in severe rectus diastasis with cutaneous excess: A case report

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Objective

Reconstruction of large rectus diastasis (RD), often associated with umbilical hernias, is commonly performed using synthetic mesh. However, autologous deepithelialized dermis presents a promising alternative, particularly in young patients or cases where foreign body implantation is contraindicated. Despite its potential, this technique remains underutilized. We present a case illustrating its application and key surgical steps.

Methods

A 36-year-old multiparous woman presented with a severe RD, measuring 15 cm at rest and expanding to 25 cm during the Valsalva maneuver, accompanied by significant abdominal skin excess following three pregnancies and postpartum weight fluctuations. She experienced core weakness, lower back pain, and body image dissatisfaction.
A standard abdominoplasty approach was performed. A 30 × 15 cm abdominal dermal flap was harvested, deepithelialized, resected, and defatted. Methylene blue dye was used intraoperatively to ensure complete deepithelialization and guide final graft shaping. The autologous dermal graft was then positioned in the retro-rectus (sublay) space following the Rives-Stoppa technique. Umbilical reconstruction was successfully achieved.

Results

This case highlights the utility of autologous dermis as a biologic reinforcement for abdominal wall reconstruction. It eliminates the need for synthetic mesh, making it an attractive option in infection-prone settings or for young patients. When combined with abdominoplasty, sufficient dermal tissue can be harvested to cover extensive defects.
Although clinical data are currently limited to case reports and small series, early outcomes suggest this method is both safe and effective. In our patient, postoperative recovery was uneventful, with excellent functional improvement and a highly satisfactory cosmetic result.

Conclusions

Autologous dermis reinforcement during abdominoplasty is a feasible and effective option for the repair of severe rectus diastasis. It offers an economically attractive biologic alternative to mesh, with favorable outcomes in selected patients.

Integrative strategies in the management of multidrug-resistant mycobacterium abscessus: A surgical and infectious disease perspective: A systematic review illustrated by a case report

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Objective
Mycobacterium abscessus is a rapidly growing nontuberculous mycobacterium (NTM) increasingly linked to skin and soft tissue infections (SSTIs). Its emergence is associated with the rise in invasive surgical/cosmetic procedures, improved diagnostics, and greater awareness of atypical infections. As one of the most drug-resistant NTMs, M. abscessus poses major therapeutic challenges. This systematic review aims to clarify current treatment strategies—including antibiotic regimens and surgical approaches—for M. abscessus SSTIs, and is illustrated by a complex clinical case.

Methods
A systematic review was conducted following PRISMA guidelines. Studies reporting on SSTIs caused by M. abscessus were identified through searches of PubMed, Cochrane Library, and Google Scholar. The focus was on treatment approaches, including antibiotic regimens, combination therapies, and surgical strategies. Additionally, we present a case of a 40-year-old who developed a deep abscess extending to the deltoid muscle following anabolic agent injection.

Results
Out of 2,038 records screened, 153 studies met the inclusion criteria. Among these, 22 large case series (≥10 patients) involving 807 individuals were used to extract primary outcomes on treatment strategies and duration. 37% of studies described infections following cosmetic/plastic surgery. Clarithromycin was used in 77% and amikacin in 59% of studies, most often in combination therapy. Surgical intervention was reported in 82% and used alongside antibiotics. In several cases, repeated debridement necessitated coverage or corrective procedures. Reported clinical cure rates ranged from 65% to >90% when medical and surgical therapies were combined. Among 15 studies reporting treatment duration, the median was 6 months (3–19.5 months). The case we present was managed with imipenem, azithromycin, tigecycline, and clofazimine. The patient underwent 5 debridements, and due to extensive tissue loss, coverage was achieved using a propeller flap. Infection resolved after 6 months of therapy.

Conclusions
Effective management of M. abscessus SSTIs requires a multidisciplinary approach, combining prolonged targeted antibiotic therapy with timely surgical intervention. Given the increasing incidence of this resistant pathogen, developing standardized treatment protocols, and fostering multidisciplinary collaborations are essential for improving clinical outcomes.

Management of recurrent gluteal abscesses following injection of a non-resorbable filler in a patient who developed ulcerative colitis

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Objective
To describe the therapeutic challenges in the management of recurrent dermohypodermitis with abscess formation following the injection of a non-resorbable filler in the gluteal region. To present the subsequent diagnosis of ulcerative colitis (UC) during follow-up. To evaluate whether there could be a link between the development of an autoinflammatory disease and the filler injection, as well as whether UC could have influenced the recurrence of infection.

Methods
Through this case report, we describe the atypical medical history of a young patient and the multiple complications that occurred even several years after the filler injection. We detail how these complications were managed. Finally, we conducted a brief literature review using PubMed and Google Scholar to evaluate a potential link between filler injection and autoimmunity.

Results
A multidisciplinary approach involving plastic surgery, infectious disease specialists, and gastroenterologists was crucial. Nevertheless, infection control proved to be extremely challenging. The patient is currently under close follow-up, with a high probability of recurrence. In the literature, several case reports suggest that patients with autoimmune diseases may have a slightly increased risk of adverse reactions, although large-scale studies are lacking.

Conclusions
This case highlights the severe and recurrent infectious complications that can arise from filler injections, particularly in patients with undiagnosed autoimmune diseases. A thorough evaluation and a multidisciplinary, staged approach are essential for optimal management. Raising awareness among patients and healthcare professionals about the potential risks associated with certain fillers is critical to preventing such complications.

Prosthetic rehabilitation for ear reconstruction and facial symmetry management in hemifacial microsomia: A case report

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Objective
Hemifacial microsomia (HFM), the second most common congenital craniofacial anomaly after cleft lip and palate, varies in severity from mild asymmetry to major deformities affecting the mandible, soft tissues, orbit, ear, and facial nerve. Ear reconstruction in severe microtia is especially complex; while surgery is often used, bone-anchored auricular prostheses offer a valuable alternative in selected cases.

Methods
This case report details the rehabilitation of a 43-year-old woman with right-sided hemifacial microsomia and grade III microtia, marked by the absence of the auricle and a displaced lobule. She had both aesthetic and functional concerns, including auricular and mandibular hypoplasia and a tilted occlusal plane. Treatment included a bimaxillary osteotomy with genioplasty using patient-specific titanium plates, followed by placement of a custom titanium mandibular prosthesis and autologous cheek lipofilling. For ear reconstruction, two craniofacial implants were placed in the mastoid area to support a customized silicone auricular prosthesis.

Results
The patient experienced an uneventful recovery and was highly satisfied with the aesthetic result. Although additional procedures like rhinoplasty and a unilateral facelift could enhance facial symmetry, they were not pursued due to the patient's satisfaction. For skeletally mature patients with severe microtia, implant-retained auricular prostheses provide a valuable alternative to autologous reconstruction, reducing surgical interventions and avoiding issues such as cartilage resorption, skin tone mismatch, and asymmetry. Additionally, autologous methods may hinder future prosthetic options due to scarring or bone loss.

Conclusions
This case underscores the necessity of long-term, individualized treatment planning in adult patients with hemifacial microsomia and grade III microtia. A staged, patient-specific approach combining skeletal reconstruction and soft tissue contouring can yield favorable aesthetic outcomes. Although autologous reconstruction remains the standard of care, implant-retained auricular prostheses should be considered a viable and often preferable option, even when traditional surgical reconstruction is feasible.

Multi-stage surgical treatment of hidradenitis suppurativa in the axilla including extracellular matrix (Kerecis Omega3) and split-thickness skin grafting: A case report

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Objective

The treatment of Hidradenitis suppurativa (HS) depends on severity and includes topical or systemic medications and surgical interventions. Wide excision in severe cases shows good long-term outcomes if proper defect reconstruction is achieved. Reconstruction methods include negative pressure wound therapy (NPWT), split-thickness skin grafting (STSG) and local flaps, with recent studies favoring reconstruction with local flaps. NovoSorb BTM and extracellular matrix-based materials have shown its applicability in single case reports. Kerecis, a decellularized cod skin graft, has shown excellent wound healing in diabetic foot ulcers. However, to our knowledge, no study has investigated the use of Kerecis in combination with BTM in treating HS. In this report, we aimed to investigate potential benefits of combining Kerecis and BTM in HS.

Methods

A 34-year-old male with a long history of HS, Hurley stage III, was referred to our clinic for wide excision. Due to the involvement of potential donor sites for local flaps, a multi-stage surgical approach was utilized. We performed bilateral wide local excision and applied Kerecis and NPWT to improve wound granulation. After 8 days, NovoSorb and NPWT was applied to establish a graftable "neodermis". After 19 days, the delamination of the NovoSorb and defect coverage with STSG was performed.

Results

No major complications were observed. In the left axilla, graft healing was delayed and local steroid injections were required to manage hypertrophic scarring. The patient's cumulative hospitalization time totaled 11 days across three separate admissions. At three months postoperatively, the SF-36 questionnaire demonstrated improved overall health, with the patient scoring 100/100 points in 5/7 domains.

Conclusions

The patient experienced improved quality of life and reduced axillary discomfort despite hypertrophic scarring. The combined use of Kerecis® and NovoSorb BTM supported rapid healing. Nonetheless, fasciocutaneous flaps remain our preferred option when feasible, as they prevent scar contraction and allow for a one-step procedure. Hospitalization was two days shorter than with excision and NPWT, and far less than the 254 days reported for healing by secondary intention. Further studies are needed to evaluate this approach for large defects, as long-term outcomes of the combined treatment with Kerecis, BTM and STSG are not available.

The impact of hormonal therapy on autologous microvascular breast reconstruction: A systematic review and meta-analysis

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Objective
Hormonal therapy (HT) is pivotal in managing hormone receptor-positive breast cancer. However, in autologous microvascular breast reconstructions (AMBR), HT raises concerns, particularly regarding venous thromboembolic (VTE) risk and its potential impact on flap viability. This systematic review and meta-analysis aim to evaluate the impact of HT on complications of AMBR.

Methods
We performed a systematic review and meta-analysis of all comparative studies reporting postoperative complications of AMBR in patients receiving HT in comparison with a control group. All types of free flaps were included. Complications were categorized and compared. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated using a random-effects model.

Results
Eight studies, encompassing 4,776 flaps performed on 3,796 patients undergoing AMBR with or without HT, were included. Patients undergoing HT were treated with either Selective Estrogen Receptor Modulators (SERMs) or Aromatase Inhibitors (AIs). Five studies compared both treatments to a control group, while three studies focused on tamoxifen. Only studies with retrospective design were included. There was no statistically significant difference between the two groups in terms of overall flap complication rates, partial and total flap loss, flap fat necrosis, flap pedicle arterial and/or venous thrombosis, or systemic VTE. The subgroup analysis revealed a significantly higher risk of systemic VTE in the SERMs group compared to controls while other complications were not significant.

Conclusions
Our results show that based on the existing literature, HT does not increase the risk of flap complications in the context of AMBR, while SERMs increase the risk of systemic VTE.

Sacral nerve reconstruction following 3D-guided partial sacrectomy for chordoma to restore urinary, sexual, and bowel function: A case report

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Objective

Chordomas are rare, slow-growing malignant tumors with a high propensity for local recurrence. En bloc resection offers the best chance for durable local control but is frequently associated with severe and permanent neurological deficits, particularly affecting bowels, bladder and sexual function due to the sacrifice of sacral nerve roots. In this case report an innovative approach that combines 3D-guided partial sacrectomy with microsurgical reconstruction of the sacrificed sacral nerves to preserve neurological function in a young female patient.

Methods

Following multidisciplinary evaluation, the patient underwent 3D-guided en bloc partial sacrectomy via a posterior approach. Patient-specific osteotomy guides enabled the bilateral preservation of the S1 and S2 nerve roots. Intraoperative neurophysiological monitoring and electrical stimulation were employed to map and preserve functional neural structures. After tumor resection, microsurgical reconstruction of the bilateral S3 and left S4 nerve roots was performed using processed nerve allografts to bridge the proximal and distal nerve stumps. Soft tissue reconstruction was achieved with bilateral gluteus maximus advancement flaps.

Results

Pathological assessment confirmed R0 resection. Postoperatively, the patient exhibited partial anal sphincter dysfunction, urinary retention, and reduced genital sensation. The motor function and sensory functions of the lower extremity remained unimpaired. At the three-month follow-up, no local recurrence or distant metastases were detected on MRI of the pelvis and CT chest. On neurolophysiological follow-up we could seen an improvement of the genital sensation.

Conclusions

Microsurgical reconstruction of sacral nerves following oncological resection appears to be a promising strategy to improve autonomic and pelvic floor function in patients undergoing surgery for sacral chordomas. The combination with 3D-guided osteotomy enhances surgical precision and facilitates nerve-sparing strategies.

When common diagnoses fail: A challenging case of arteriovenous malformation of the thumb

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Objective
To highlight the diagnostic complexity of arteriovenous malformations (AVMs) of the upper extremity and emphasize the importance of high-resolution imaging and multidisciplinary collaboration in cases with persistent and unexplained symptoms.

Methods
A 24-year-old healthy female presented with persistent pain and warmth at the interphalangeal joint of her right thumb. Initial workup suspected cellulitis; antibiotics and ergotherapy were prescribed. MRI revealed soft tissue edema. Despite treatment, symptoms persisted. Rheumatologic evaluation suspected tenosynovitis or CRPS. Laboratory workup, including autoimmune and infectious parameters, was unremarkable. A follow-up MRI showed signs of tenosynovitis of the flexor pollicis longus tendon. NSAIDs, DMSO, and local steroid injection brought only temporary relief. Vascular consultation and initial duplex sonography were inconclusive. A later sonographic exam of the thumb revealed a pulsatile vessel on the ulnar aspect of the thumb. MR angiography confirmed a palmar AVM. The case was discussed in an interdisciplinary angiodysplasia board, which recommended a biopsy for histological clarification and potential therapy planning.

Results
The patient initially hesitated to undergo biopsy, delaying further diagnostic clarification. Eventually, the biopsy was performed, but results were still pending at the time of submission, and specific pharmacological treatment (e.g., Rapamicin) could not yet be initiated. In the absence of trophic changes or ischemic signs, conservative management including immobilization and compression therapy was chosen. Due to the functional limitations caused by AVM and the risk of exacerbation with manual labor, the patient is currently unable to return to her profession as a carpenter. Vocational retraining or alternative professional education will likely be necessary to ensure future employability.

Conclusions
AVMs of the hand are rare congenital vascular malformations caused by errors in embryological vascular development. They are often misdiagnosed due to nonspecific symptoms. This case illustrates the diagnosing and therapeutic challenges in AVMs. It highlights the importance of high-resolution imaging, interdisciplinary planning, and individualised patient counseling. Beyond medical management, AVMs may have significant occupational and psychosocial consequences that must be addressed as part of holistic care.

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