

# SCAPLAS ABSTRACTS



2022  
**SCAPLAS Congress**  
Scandinavian Association of Plastic Surgeons

# Breast Reconstruction



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Abstract nr.

1

**Comparison of pain management strategies to reduce opioid use postoperatively in abdominal based free flap breast reconstruction**

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Topic

Breast reconstruction

Keywords

**Introduction**

Perioperative management of autologous breast reconstruction patients has gained focus as the deep inferior epigastric perforator (DIEP) flap increases in popularity. This study compared two pain management protocols in patients undergoing abdominal based free flap breast reconstruction: a past protocol (PP) and a current protocol (CP). Both were intended to reduce opioid consumption postoperatively. We hypothesised that the CP reduced opioid consumption compared to the PP as well as shortened the length of hospital stay (LOS).

**Materials and Methods**

One hundred and two patients underwent breast reconstruction with an abdominal based free flap at the Uppsala University Hospital, Sweden from December 2017 to January 2020. Data was collected retrospectively. Two postoperative pain management strategies were used during the study period; from December 2017 to September 2018 the PP was used which entailed the use of a pain catheter with ropivacaine applied in the abdominal wound intraoperatively with continuous distribution postoperatively in addition to paracetamol (acetaminophen) orally and oxycodone orally pro re nata (PRN). From October 2018 to January 2020 the CP was used. This protocol included a combination of intraoperative subfascial nerve block and a postoperative oral pain management regime that consisted of paracetamol, celecoxib, and gabapentin as well as oxycodone PRN.

## **Results**

The study consisted of 39 patients in the PP group and 63 patients in the CP group (n=102). The CP group had lower opioid consumption compared to the PP group when examining all aspects of opioid consumption during the hospital stay including daily opioid usage in morphine milligram equivalents (MME) for postoperative days one to four and total opioid usage during the stay ( $p<0.001$ ). The CP group had shorter LOS, a median of four days compared to five in the PP group ( $p=0.001$ ).

## **Conclusions**

Introduction of a CP protocol reduced opioid use postoperatively and contributed to a shortened LOS.

Presentation Preference

Oral presentation



Abstract nr.

3

**An observational study comparing the SPY-Elite® vs. the SPY-PHI QP System in breast reconstructive surgery**

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Breast reconstruction

Topic

Keywords

**Introduction**

Indocyanine green angiography (ICG-A) can be applied to visualize per-operative tissue perfusion. Perfusion cut-off values based on ICG-A are important in guiding the intraoperative decision making. Two modalities able to quantify relative tissue perfusion values exist: the SPY-Elite® and the SPY-PHI QP system. We conducted an observational study comparing the quantitative perfusion values of the SPY-Elite® and the SPY-PHI QP with the postoperative outcomes in breast reconstructive procedures.

**Materials and Methods**

Sixteen consecutive patients undergoing breast reconstructive surgery (20 breasts) were included. The SPY-Elite® and the SPY-PHI QP imaging systems were applied simultaneously during surgery. There exists no international consensus on cut-off values, therefore cut-off was set to 33% as previous reported by Moyer et al.

**Results**

Five patients had implant-based breast reconstruction, 4 oncoplastic techniques (volume displacement- or replacement), 7 autologous tissues (2 pedicled latissimus dorsi flaps and 5 free deep inferior epigastric artery perforator flaps). In 4/16 cases (25%) results of the imaging systems were unequal in quantifying tissue perfusion. The SPY-PHI QP system yielded a sensitivity of 50%, specificity 77%, positive predictive value 25%, negative predictive value 91% and 73% accuracy. The SPY-Elite® had a sensitivity of 50%, specificity 100%, positive predictive value

100%, negative predictive value 93% and 93% accuracy.

### **Conclusions**

Imaging modalities assessing and quantifying real-time tissue perfusion is a valuable tool in breast reconstructive surgery. We tested the SPY-Elite® and the SPY-PHI QP using a perfusion cut-off value of 33%. The results were not comparable in assessing and quantifying tissue perfusion using the chosen cut-off value. Further studies investigating specific cut-off values for the SPY-PHI QP is needed.

Presentation Preference

Oral presentation



Abstract nr.

18

**Autologous Fat Grafting Is Not Superior to Placebo When Treating Post-mastectomy Pain Syndrome: A Randomized Controlled Trial**

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Breast reconstruction

Topic

Keywords

**Introduction**

Post-mastectomy pain syndrome is a common and disabling side effect of breast cancer treatment. Medical treatment seems to be insufficient for a considerable proportion of patients. Fat grafting has shown promise in relieving pain from PMPS and is used extensively around the world. However, no randomized clinical trial comparing fat grafting to a sham operation has been performed to date. Our objective was to compare the effect of fat grafting compared to a sham operation for treating post-mastectomy pain syndrome.

**Materials and Methods**

We conducted a single-centre double-blinded randomized clinical trial with two arms between October 2017 - September 2020. We assessed forty-five patients suffering from PMPS for inclusion. The intervention group received scar-releasing rigotomy and fat grafting (50 ccs) to the area of pain. The control group received scar-releasing rigotomy and a placebo of saline solution (50 ccs). The primary outcome was the degree of pain measured using the numerical rating scale (NRS). The secondary outcomes were the degree and quality of neuropathic pain (Neuropathic Pain Symptom Inventory) and Quality of Life (Short Form-36). Follow-up was six months.

## **Results**

Thirty-five participants completed follow-up: eighteen participants in the intervention group and seventeen in the control group. We observed a small reduction of around one point on the NRS in both the maximum and average degree of pain. The results were identical in both the intervention and the placebo group. We detected no statistically significant changes in neuropathic pain. Regarding the quality of life, the control group reported a statistically significant improvement in emotional problems parameters, whereas the intervention group reported a deterioration. We observed no serious adverse effects.

## **Conclusions**

We did not find evidence to support that fat grafting is superior to a placebo when treating post-mastectomy pain syndrome.

Presentation Preference

Oral presentation



Abstract nr.

33

**Implementing a standardized care program in a new fast-track surgery protocol for breast reconstruction**

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Topic

Breast reconstruction

Keywords

**Introduction**

In 2020 we have implemented a fast-track surgery protocol for women who undergo breast reconstruction using breast implants. These patients often went through a hard recovery and prolonged hospitalization. Therefore, we put together an optimized fast-track surgery protocol and care plan. The goal was to reduce the burden of postoperative symptoms, minimize complications and subsequently be able to discharge the patients on day 2-3. The surgery protocol and care plan has been continually adapted and improved since the beginning.

**Materials and Methods**

An interdisciplinary work group decided which changes were made in medication and care regimen. Patient involvement is of key importance so the patients know what to expect and what is expected of them. To help both the patients and the nursing staff, we have formulated a simple standardized care program with day-to-day goals. There is a version for the nurses and a version for the patient/relative. The patients are given the program before surgery and have it bedside afterwards so we can follow the program together.

Before introducing any changes, we collected baseline patient data by journal auditing (60 cases) and later we included a questionnaire for the patients. Data monitoring is repeated annually to measure our progress.

**Results**

The changes in medication have been successful in reducing the burden of symptoms. The nursing staff find that following the standardized care program is very useful to both staff and patients as it helps us focus our care and work better as a team with the patients. The care program supports our continuity in care, but still allows for individual adaptation. We have decided, that even if a patient cannot complete all the daily goals by the expected time, we don't see it as a failure on either part.

**Conclusions**

We conclude that focused nursing efforts are critically important when implementing a fast-track

surgery protocol and that a standardized care program can contribute to better patient involvement and nursing performance.

Presentation Preference

Oral presentation



Abstract nr.

41

**Interaction of adipose stem cells with active and dormant breast cancer cells**

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Topic

Breast reconstruction

Keywords

**Introduction**

Although autologous fat grafting (AFG) is considered a successful method for management of contour deformities, little is known about the interaction between fat graft and the prior oncological environment, where tumour-stromal interactions potentially can induce cancer reappearance by fuelling dormant breast cancer cells. In this study our aim was to better characterize the role of adipose-derived stem cells (ASCs) in tumorigenesis using an *in vitro* experimental system.

**Materials and Methods**

Cobalt chloride (CoCl<sub>2</sub>) was used to induce dormancy in MCF-7 breast cancer cells. Proliferation of either active or dormant cancer cells was determined in the presence of ASCs. A proteome oncology array was used to detect cancer-related protein expressed in the conditioned medium (CM). The migration/invasiveness of cancer cells was also measured in response to CM from the ASCs.

**Results**

CoCl<sub>2</sub>-treated cancer cells showed clear hallmarks of dormancy, hallmarks that were reversible upon withdrawal of the CoCl<sub>2</sub>. Adipogenic derived stem cells isolated from four human donors

exhibited varying effects on both active and dormant cancer cell growth, from none or minimal influence to clear anti-growth effects. Out of 84 different proteins measured in the CM, only Tenascin C expression was altered in the co-cultures. MCF-7 cells alone did not express Tenascin C while ASCs-cancer co-cultures expressed significantly more Tenascin C versus ASCs alone. Compared with control medium, CM from ASCs or co-cultures did not significantly increase the migration of the cancer cells.

### **Conclusions**

Adipogenic derived stem cells have the ability to mediate prolonged dormancy in breast cancer cells. However, the increased expression of Tenascin C observed in co-cultures with breast cancer cells and ACSs is of unclear significance. Importantly, ASCs neither increased growth or invasion of active or dormant cancer cells suggesting that AFG may be oncologically safe if tissue reconstruction is postponed until there is no evidence of active disease.

Presentation Preference

Oral presentation



Abstract nr. 42

**A short-term comparison of expander prosthesis and DIEP flap in breast reconstructions: A prospective randomized study**

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Topic Breast reconstruction

Keywords

**Introduction**

There is yet no clear consensus on which method is preferable in secondary breast reconstructions, prosthesis, or autologous tissue.

**Materials and Methods**

In this first prospective randomized study, 29 women underwent reconstruction with expander prosthesis (EP) and 44 with deep inferior epigastric perforator (DIEP) flap. Inclusion started in 2012 and ended in 2018. Demographic data, complications, surgery time, hospital days, and consulting visits were recorded. Patient satisfaction was evaluated pre- and postoperatively using the BREAST-Q questionnaire. Health care costs were calculated based on rates from the financial year 2018. Here, we report the results related to the surgery and the first 30 postoperative days.

**Results**

The two groups were comparable regarding demographics and clinical characteristics. Satisfaction with breasts, measured with BREAST-Q, was significantly higher in patients who had undergone reconstruction with DIEP flap compared with EP. Within 30 days after breast reconstruction, significantly fewer women ( $n = 2$ ) in the EP group suffered complications compared to the DIEP flap group ( $n = 16$ ;  $p < 0.01$ ). The health care cost was also significantly higher in the DIEP flap group relative to the EP group ( $p < 0.01$ ).

**Conclusions**

This patient cohort will be studied systematically over time, and results concerning the need for complementary surgery, costs, esthetics, and the patient-reported outcome (PRO) will be reported

in future work. In this short-term report, EP seems to be preferable in regard to cost and complications, and DIEP flap is to choose from the patient's perspective.

Presentation Preference

Oral presentation



Abstract nr.

43

**Breast softness in patients randomised to postmastectomy breast reconstruction with an expander prosthesis or DIEP flap**

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Topic

Breast reconstruction

Keywords

**Introduction**

Objectively measured breast softness in reconstructed breasts and its relation to patients' subjective satisfaction with breast softness has not yet been investigated. The aim of this study was to evaluate breast softness in patients 1 year following delayed breast reconstruction with an expander prosthesis (EP) or deep inferior epigastric perforator (DIEP) flap, using objective and subjective methods.

**Materials and Methods**

Seventy-three patients were randomised to breast reconstruction with an EP or DIEP flap between 2012 and 2018. Of these, 69 completed objective evaluation at a mean of 25 (standard deviation, SD 9.4) months following breast reconstruction. Objective evaluation included measurements of breast volume, jugulum-nipple distance, clavicular-submammary fold distance, ptosis and Baker scale grading. Breast softness was assessed with applanation tonometry. Subjective evaluation was performed using the BREAST-Q questionnaire.

**Results**

Objectively, DIEP flaps were significantly softer than EP breast reconstructions. Non-operated contralateral breasts were significantly softer compared with reconstructed breasts. In the subjective evaluation, the median score on the question (labelled 1.h) "How satisfied or dissatisfied have you been with the softness of your reconstructed breast (s)?" was higher in the DIEP flap group corresponding to greater satisfaction in this group. A fair correlation was found

between the applanation tonometry and the patient-reported satisfaction with the reconstructed breast's softness ( $r_s = 0.37$ ).

### **Conclusions**

In terms of breast softness, breast reconstructions with DIEP flaps result in more satisfied patients. Concerning applanation tonometry as an objective tool for softness assessment, future studies on interobserver agreement are warranted.

Presentation Preference

Oral presentation



Abstract nr.

68

**Liberal versus modified intraoperative fluid management in abdominal flap breast reconstructions. A clinical study.**

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Topic

Breast reconstruction

Keywords

**Introduction**

The outcome of reconstructive microsurgery is influenced by the intraoperative anaesthetic regimen. The aim of this study was to assess the impact of two different fluid management strategies on the intra- and postoperative complication rates in abdominal-flap breast reconstructions.

**Materials and Methods**

This retrospective study analysed adverse events related to secondary, unilateral abdominal-flap breast reconstructions. The patient population was divided into two cohorts corresponding to whether a liberal fluid management (LFM) protocol or a modified fluid management (MFM) protocol had been used during the surgery. The LFM protocol allowed larger intravenous fluid volumes of both crystalloids and colloids, whereas the MFM protocol comprised restricted crystalloid infusion and minimal use of colloids. In addition, noradrenaline and propofol were used in the MFM protocol to support normotension and reduce postoperative interstitial oedema. The primary endpoints were surgical and medical complications as observed during and early after the hospital stay.

**Results**

Of the 214 patients included in the study, the MFM protocol was utilized during the surgery of 172 patients. Prior radiotherapy and venous superdrainage as part of the surgical procedure were more frequent in the MFM cohort. The LFM protocol was associated with a significantly higher incidence of intraoperative and postoperative complications, and specifically resulted in more frequent partial and total flap failure. Prior radiotherapy or venous superdrainage did not have an independent impact on outcome.

## **Conclusions**

The incidence of adverse events during and after abdominal-flap breast reconstructions was reduced with the introduction of a modified fluid management protocol. Strict intraoperative fluid control combined with noradrenaline and propofol was both beneficial and safe.

Presentation Preference

Oral presentation



Abstract nr.

72

**Comparison of pain management strategies to reduce opioid use postoperatively in abdominal based free flap breast reconstruction**

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Topic

Breast reconstruction

Keywords

**Introduction**

Perioperative management of autologous breast reconstruction patients has gained focus as the deep inferior epigastric perforator (DIEP) flap increases in popularity. This study compared two pain management protocols in patients undergoing abdominal based free flap breast reconstruction: a past protocol (PP) and a current protocol (CP). Both were intended to reduce opioid consumption postoperatively. We hypothesised that the CP reduced opioid consumption compared to the PP as well as shortened the length of hospital stay (LOS).

**Materials and Methods**

One hundred and two patients underwent breast reconstruction with an abdominal based free flap at the Uppsala University Hospital, Sweden from December 2017 to January 2020. Data was collected retrospectively. Two postoperative pain management strategies were used during the study period; from December 2017 to September 2018 the PP was used which entailed the use of a pain catheter with ropivacaine applied in the abdominal wound intraoperatively with continuous distribution postoperatively in addition to paracetamol (acetaminophen) orally and oxycodone orally pro re nata (PRN). From October 2018 to January 2020 the CP was used. This protocol included a combination of intraoperative subfascial nerve block and a postoperative oral pain management regime that consisted of paracetamol, celecoxib, and gabapentin as well as oxycodone PRN.

## **Results**

The study consisted of 39 patients in the PP group and 63 patients in the CP group (n=102). The CP group had lower opioid consumption compared to the PP group when examining all aspects of opioid consumption during the hospital stay including daily opioid usage in morphine milligram equivalents (MME) for postoperative days one to four and total opioid usage during the stay ( $p<0.001$ ). The CP group had shorter LOS, a median of four days compared to five in the PP group ( $p=0.001$ ).

## **Conclusions**

Introduction of a CP protocol reduced opioid use postoperatively and contributed to a shortened LOS.

Presentation Preference

Poster presentation



Abstract nr.

84

**Donor site morbidity after delayed LD or TAP flap breast reconstruction: Long-term follow-up.**

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Topic

Breast reconstruction

Keywords

**Introduction**

Breast cancer patients treated with mastectomy are often eligible for delayed breast reconstruction with a pedicled flap from the back. The latissimus dorsi (LD) flap is considered the workhorse of pedicled flaps for breast reconstruction. However, the thoracodorsal artery perforator (TAP) flap has gained popularity during the last decade. Studies comparing shoulder and arm function between the LD and TAP flap when used for delayed breast reconstruction favoured the TAP flap, concluding that TAP flap reconstructed patients are less likely to experience shoulder-related pain and have a better function of the shoulder one year after their reconstruction. The aim of this study was to compare physical function and symptoms of the shoulder, arm, and hand after LD or TAP delayed breast reconstruction using the disability of arm, shoulder, and hand (DASH) questionnaire.

**Materials and Methods**

In this multicenter retrospective cohort study, 228 patients who had undergone delayed breast reconstruction after mastectomy using a LD or TAP flap at the departments of plastic surgery at

Odense University Hospital, Lillebaelt Hospital, and Copenhagen University Hospital, Herlev and Gentofte between January 2010 – December 2020 were invited to answer the DASH questionnaire.

## **Results**

The response rate of the invited patients was 141/228 (62%), three of which were bilaterally reconstructed, resulting in 144 answered questionnaires. The median DASH score for patients reconstructed by the TAP flap was 8.3 (range: 0-68.3) compared to 13.3 (range: 0-70) for the LD group.

## **Conclusions**

There was no significant difference between the shoulder and arm morbidity, when comparing the DASH scores of the TAP and the LD groups.

Presentation Preference

Oral presentation



Abstract nr.

86

**Enhanced Recovery After Surgery (ERAS) in Finnish DIEP patients, a pilot study**

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Topic

Breast reconstruction

Keywords

**Introduction**

ERAS-protocol (Enhanced Recovery After Surgery) has proven to be effective in many surgical procedures but are infrequently applied in breast surgery. In this study we evaluated the impact of ERAS-protocol in patients undergoing microvascular breast reconstruction at a middle-sized center.

**Materials and Methods**

Pre-Protocol study population, operated in years 2018 and 2019, and Post-Protocol study population, operated between January 2021 and February 2022 were compared. We analyzed patient demographics (age, BMI, smoking status, comorbidities), surgical procedures (timing and laterality of reconstruction), adjuvant treatment and the length of hospital stay (LOS).

Postoperative complications were divided into three categories: medical complications, major surgical complications, and minor surgical complications.

**Results**

Patients in the Post-Protocol group (n = 37) had a reduction in mean LOS as compared to those in the Pre-Protocol group (n = 65), mean 6,2 to 3,9 postoperative nights (not a statistically significant difference, P=0.665). The two groups were demographically comparable. The total number of complications decreased -9,1%. There were no medical complications in the post-protocol group and major wound healing complications decreased -12,2% while minor wound healing complication rate increased by +3,1%.

## **Conclusions**

In this pilot study, a structured pathway for accelerated postoperative recovery (ERAS) reduced hospital stay and cost of care following microvascular breast reconstruction without increased complications.

Presentation Preference

Oral presentation



Abstract nr.

90

## **11-years' Experience using the TAP flap for Breast Reconstruction**

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Topic

Breast reconstruction

Keywords

### **Introduction**

A decade ago in 2011 the LD flap was a standard for secondary breast reconstruction where microsurgery was not indicated. We were wondering if the TAP flap could be a feasible alternative with less arm and shoulder morbidity? Experiment led to a study and a cycle began: The first study – a feasibility study started an unforeseen journey with research activities and discoveries of the many different aspects and applications of the TAP flap in breast reconstruction.

### **Materials and Methods**

Since 2013 our team have published 16 papers in a multicentre international collaboration; written by 25 participating authors published in 9 different journals. The papers represent the many different aspects and the versatility of the TAP flap discovered along the journey. The work has been reviewed and summarized for presentation emphasizing learning points and solutions.

### **Results**

The first paper was a feasibility study of 15 patient, which showed that the propeller TAP flap can be used for delayed breast reconstruction with an ADM hammock. Our developing and refined surgical technique for unilateral and bilateral TAP flap breast reconstructions is described. The choice between LD and TAP comparing morbidity in a randomized controlled trial. We examined and compared the shoulder and arm morbidity between the LD and TAP, which showed a significant difference favoring the TAP after 1-year follow up. However, we found no difference with regard to quality of life between the groups. Having many options makes for a challenge in flap selection for breast reconstruction with options from extended LD, LD, MS-LD, propeller TAP to classic TAP flap.

### **Conclusions**

The TAP flap has proven to be a true work horse flap for breast reconstruction, oncoplastic breast surgery and salvage surger. The flap is a versatile adjunct for creative solutions in difficult situations. The review emphasizes a journey of an evolving flap from a classic LD flap to TAP flap with continuous modifications fitting each case to current variations.

Presentation Preference

Oral presentation



Abstract nr.

91

**Breast Reconstruction by Combined Pedicled Perforator Flaps**

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Topic

Breast reconstruction

Keywords

**Introduction**

For the last 15 years we have increasingly been using pedicled perforator flaps for breast reconstruction. We started with the LICAPs, AICAPS for partial breast reconstruction followed by TAP flaps in combination with an implant for breast reconstruction. Lately, we have started to combine different pedicled perforator flaps for total breast reconstruction. In this presentation we share our initial experience combining different pedicled perforator flaps for breast reconstruction.

**Materials and Methods**

We have performed 9 reconstructive procedures in women with large BMI's or following massive weight loss. We have used the available tissue in different combinations of TAP flaps, IMAP flaps, SEAP flaps, LICAP flaps, AICAP flaps and central pedicled flaps for unilateral and bilateral breast reconstruction as well as contralateral auto augmentations for symmetry.

**Results**

Selected patient cases are presented. This includes preoperative markup based on the available tissue and a discussion of the different reconstructive options. Different surgical procedures using multiple pedicled perforator flaps for uni- and bilateral breast reconstruction is presented. The first procedure is the harvest and shaping of volume for breast reconstruction, the second procedure is a shaping/refinement procedure to optimize volume and shape by use of fatgrafting and classical shaping procedures.

**Conclusions**

Combined pedicled perforator flaps can be used for breast reconstruction in selected patients, where other reconstructive options are excluded.

Presentation Preference

Oral presentation



Abstract nr.

93

**Breast reconstruction is associated with lower satisfaction with breasts and worse psychosocial well-being than breast-conserving surgery on long-term follow-up**

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Breast reconstruction

Topic

Keywords

**Introduction**

Surgical treatment of breast cancer alters the appearance of the breasts and can influence the woman's health-related quality of life. The aim of this study was to assess whether the long-term impact of mastectomy and breast reconstruction differs from that of breast-conserving surgery (BCT) or mastectomy.

**Materials and Methods**

A cross-sectional survey study was performed. Five hundred women operated on for breast cancer in 2017 were approached, with 339 women who had breast reconstruction 8/2017-7/2019. The BREAST-Q sections Satisfaction with Breasts, Psychosocial Well-being and Sexual Well-being were assessed. The effect of the surgical group was evaluated with the Kruskal-Wallis test and the groups compared using the Mann-Whitney U test with Bonferroni correction.

**Results**

A total of 326 (39%) patients participated, with a mean age of 62 (SD 11) years, 3.0 (SD 1.3) years

after the operation. Of these, 151 had undergone breast reconstruction, 85 BCT and 90 mastectomy. The group effect was significant for all three scales ( $p < 0.01$ ). Satisfaction with Breasts score was higher for the reconstruction (mean 60, SD 18) than the mastectomy group (52, SD 17;  $p < 0.01$ ) but worse than for the BCT group (72, SD 22;  $p < 0.01$ ). The Psychosocial Well-being was also lower in the reconstruction group (68, SD 18) than the BCT group (79, SD 16;  $p < 0.01$ ), being close to that in the mastectomy group (66, SD 17;  $p = 1.00$ ). The Sexual Well-being did not differ between the reconstruction (53, SD 21) and the other groups (61, SD 20 for BCT;  $p = 0.07$ ; 40, SD 20 for mastectomy;  $p = 0.13$ ).

## **Conclusions**

Women who have undergone breast reconstruction are less satisfied with their breasts and experience lower psychosocial well-being than those who have undergone BCT. This emphasizes the importance of using oncoplastic techniques, when possible, to avoid a mastectomy. Long-term psychological support and any required late surgical revisions should also be provided following reconstructions.

Presentation Preference

Oral presentation



Abstract nr.

98

**DYNAMIC INFRARED THERMOGRAPHY IN COMBINATION WITH INDOCYANINE GREEN FLUORESCENCE ANGIOGRAPHY FOR ASSESSMENT OF THE PERFUSION EFFECT WITHIN A DIEP FLAP AFTER SUPERFICIAL VEIN DRAINAGE**

Author

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Topic

Breast reconstruction

Keywords

**Introduction**

Venous stasis can jeopardise DIEP flap reconstruction. Unnecessary supercharging of the flap with a “lifeboat” procedure only leads to extra dissection and operation time. In this study, we investigate the usefulness of dynamic infrared thermography (DIRT) and indocyanine green fluorescence angiography (ICG-FA) to predict if the superficial epigastric vein (SIEV) has an overall effect on the flap perfusion for certain individuals.

**Materials and Methods**

15 females selected for DIEP flap breast reconstructions with a prominent SIEV (intraoperative dissectible and visual on preoperative CTA) were investigated with DIRT and ICG-FA at two stages of the operation: after perforator dissection, before flap transfer (*stage 1*) and after flap revascularization with IMA (*stage 2*). Changes in perfusion pattern within DIEP flaps were evaluated before and after draining the SIEV at both stages.

**Results**

Perfusion pattern with fluorescence on ICG-FA and hotspots on DIRT were equivalent for each perforator in both stages. ICG was prominently draining out of the SIEV and more intense IR radiation appeared at the exit point of the superficial vein in these flaps. *Stage 1*: the hotspots from remaining perforators got brighter after opening the SIEV in some flaps, while in other cases such phenomena did not appear. *Stage 2*: opening the SIEV did not show any changes in the perfusion

images of many flaps, but in some cases this procedure resulted in more uptake of ICG in the remaining parts of the flap and equivalent increase in hotspots.

When we intraoperatively failed to super-drain these flaps with a “lifeboat” procedure, partial or complete necrosis appeared in these flaps due to venous stasis.

### **Conclusions**

When clinical assessment is difficult, ICG-FA and DIRT can be applied for evaluating the perfusion effect of the SIEV in a DIEP flap.

Presentation Preference

Poster presentation



Abstract nr.

103

**Can 3D Imaging Be the Gold Standard for Clinical Assessment of Breast Symmetry and Aesthetic Outcome?**

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Breast reconstruction

Topic

Keywords

**Introduction**

There is a lack of a quick and accurate standardised objective method to assess aesthetic outcome after breast surgery. In this study we investigated the intra- and inter-observer reproducibility of breast shape symmetry and volume measurements assessed using three-dimensional surface imaging (3D-SI). In addition, we evaluated the reproducibility depending on imaging posture, and proposed a new combined volume-shape-symmetry (VSS) parameter.

**Materials and Methods**

Three repeated images were collected using the VECTRA XT 3D imaging system for each woman

standing in two different bodily postures. The images were independently analysed by two different observers using VECTRA Analysis Module. All women had undergone bilateral risk-reducing mastectomy and immediate breast reconstruction. The reproducibility of breast symmetry and volume measurements were compared using Bland-Altman plots and tested with Spearman's rank correlation coefficient.

## **Results**

3D surface images of 58 women were analysed (348 symmetry measurements, 696 volume measurements). Measurements of breast symmetry were found to have substantial–excellent intra-observer reproducibility, substantial inter-observer reproducibility, and substantial inter-posture reproducibility. Measurements of breast volume were found to have excellent intra-observer reproducibility, moderate–substantial inter-observer reproducibility, and substantial–excellent inter-posture reproducibility. The intra-observer reproducibility of VSS was excellent while the inter-observer reproducibility was substantial for both observers, independent of posture.

## **Conclusions**

3D-SI measurements might potentially be of use to evaluate and compare aesthetic outcomes of breast reconstructions from a more objective perspective. Nevertheless, the inter-observer reproducibility was lower than the intra-observer reproducibility, indicating that 3D-SI in its present form is not a good enough tool for the assessment of breast symmetry.

Presentation Preference

Oral presentation



Abstract nr. 109

### **The Central Pedicle Mastoplasty**

**A useful tool for MWL breast restoration of any size and shape**

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Topic Breast reconstruction

Keywords

#### **Introduction**

The challenging MWL breast operation has greater resemblance to breast reconstruction and remodelling than any breast reduction or mastopexy methods applied in plastic surgery. It is the combination of deconstruction and remodelling with autologous tissue aiming to reconstruct and reapproximate what is displaced and lost. Reduction of surplus may be a greater challenge as the blood supply must be accounted for in the plan of resection and remodelling of the future breast.

#### **Materials and Methods**

The massive weight loss anatomy is often exaggerated and displaced. The female breast once hypertrophied, outgrows its own footprint and pulls down the adjacent skin causing a characteristic lateral skin fold and inferomedially pointing nipple. This offers an opportunity to really study the contents of the breast. The oversized perforators and their vascular territories are not easily missed and the fibrous septa are now loose remains of a previous macromastia.

#### **Results**

The ligaments of the breast are elongated and pulled out of proportion. Lateral excess resection includes a lateral vascular pedicle enclosed in Wurdingers ligament (ref) and the same ligament adheres to the sternum enclosing the internal mammary perforators. The centrally located anterior intercostal perforators are also visible and are preserved along with their hypertrophied veins that are often readily seen running up towards the NAC within a thin vertically oriented ligament described in 2012 by Bayramiçli.

#### **Conclusions**

Our current method for MWL mastoplasty is a hybrid gained from our published experience with skin sparing mastectomy and immediate reconstruction and clinical study of breast glandular blood supply to secure remodelling of the existing breast tissue containing the nipple and areola. A true central pedicle is available and seems reliable in a vast array of challenging cases.

Presentation Preference

Oral presentation



Abstract nr.

110

**Prepectoral implant based breast reconstructions with titanium mesh (Tilooop).  
A 3 years material from Møre og Romsdal county in mid Norway**

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Topic

Breast reconstruction

Keywords

**Introduction**

Onco-plastic cooperations is the standard for modern breast cancer treatment. A newly established onco-plastic service was initiated in Molde, Møre og Romsdal, Norway in 2019.

**Materials and Methods**

A total of 37 primary prepectoral breast reconstructions in 29 patients, 27 unilateral and 5 bilateral procedures, were performed from February 2019 to February 2022. A titanium mesh was utilized in all procedures. 3 breasts in 3 patients were formerly radiated as part of breast conservative treatment. Mean age at operation was 46.5 years, ranging from 23 to 69 years.

**Results**

In the therapeutic group (30 breasts) all procedures were histologically radical.

9 patients ( 9 breast ) received adjuvant radiotherapy.

In 34 previously non radiated breast only one major complication occurred. This was a medial flap necrosis that had to be revised. The defect was reconstructed with an AICAP flap. There were no additional complications following adjuvant radiotherapy.

In the 3 previously radiated breasts two major complications with skin necrosis and implant exposure occurred necessitating temporary explantation and salvage procedures with TDAP (TAP) flaps.

The mean follow up period is 19.6 months, ranging from 5 to 41 months.

**Conclusions**

In our setting primary prepectoral expander- or direct to implant-based breast reconstructions were

safely performed in previously non radiated breasts. Rates of capsular contracture without and with adjuvant radiotherapy as well as the need for adjunct procedures, remains to be studied in a long term perspective.

In previously radiated breasts skinsparing mastectomies with primary prepectoral expander - or direct to implant-based reconstructions were associated with a very high rate of complications and should only be offered in strictly selected cases.

Presentation Preference

Oral presentation



Abstract nr.

122

## **Keeping Extra Skin During Mastectomy for Future Nipple Areola Reconstruction**

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Topic

Breast reconstruction

Keywords

### **Introduction**

Aesthetically pleasing breast reconstruction after mastectomy can be challenging. The authors present a new skin sparing mastectomy (SSM) technique for ptotic breasts in which extra mastectomy skin is kept for future nipple areola complex (NAC) reconstruction. This technique has been used since 2005 in both autologous and implant based breast reconstructions.

### **Materials and Methods**

A retrospective study of 51 patients undergoing nipple sacrificing, skin sparing mastectomy between January 2017- December 2018 with the new technique was conducted. Complications of the new method were assessed.

A subsequent prospective study was conducted assessing the projection and sensitivity of the NAC. A cohort of 13 women (26 NAC) were operated on using the new technique (group A) compared with 12 women (12 NAC) operated on using a standard approach (group B).

### **Results**

Surgical intervention due to mastectomy flap necrosis at the inverted T-point was 7,8%. Excision of the triangular skin marked of the DIEP flap was requested and performed in 68%.

In group A, the mean nipple projection was 4,2mm and the nipple perception of light sensation was 92%. Comparatively in group B, the mean nipple projection was 2,2mm with a nipple sensation of 12,5%.

### **Conclusions**

The new concept of keeping extra skin during mastectomy can improve aesthetic results and achieve higher patient satisfaction in risk reducing mastectomy and immediate reconstruction. This is due to better projection and sensation of the reconstructed nipple as well as absence of peri-areolar scar.

Presentation Preference

Oral presentation



Abstract nr.

125

**BIA-ALCL cases treated at Helsinki University Hospital, Finland, during 2016-2022**

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Topic

Breast reconstruction

Keywords

**Introduction**

Breast implant-associated anaplastic large cell lymphoma (BIA-ALCL) is an uncommon disease that can develop around breast implants. The first case with BIA-ALCL in Finland was diagnosed in 2016. In this presentation the cases treated at Helsinki University Hospital (HUH) and the diagnostic challenges are described.

**Materials and Methods**

Altogether 7 cases have been treated at HUH. All women had undergone augmentation with Biocell surface textured silicone implants 9-17 years before the BIA-ALCL diagnosis. All cases presented with periprosthetic effusion ranging in duration from just a few months till several years. One case had a mass extending outside the capsule. One case was diagnosed with bilateral BIA-ALCL. All patients described pain due to periprosthetic fluid load, less common skin lesions and itching.

**Results**

All cases referred with periprosthetic fluid have breast MRI followed by ultra-sound guided maximum fluid aspiration. The aspirate undergoes hematopathological investigations performed by a dedicated pathologist team. The BIA-ALCL confirmed cases had preoperative PET-CT. The multidisciplinary lymphoma meeting was consulted both pre- and postoperatively. All cases were operated on with removal of both implants with the intact surrounding capsule (total *en bloc* capsulectomy). Fluid aspirate and resection specimen with implant in place were sent fresh to the hematopathologist. One case with fluid, capsular mass, and carcinoma in same breast underwent mastectomy with sentinel node biopsy and immediate breast reconstruction with latissimus dorsi flap, followed by adjuvant chemotherapy and surveillance by the oncologist. The other cases had corrections with fat grafting, and two cases had augmentation with smooth implants. The cases with local disease are followed by the surgeon.

**Conclusions**

Diagnostics and surgery of BIA-ALCL are challenging. Crucial is a dedicated multidisciplinary team

to learn more about this uncommon malignant disease.

Presentation Preference

Oral presentation

# Burns



2022  
**SCAPLAS Congress**  
Scandinavian Association of Plastic Surgeons



Abstract nr.

30

## **The Material and Staff Requirements in a Mass Burn Casualty Incident**

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Topic

Burns

Keywords

### **Introduction**

Introduction

Action plans for mass casualty incidents are available in most health care systems. Sometimes specific mass burn casualty incident plans also exist. These plans and the scientific literature, however, are limited in information pertaining to material and staff requirements following the immediate and late responses. The aim of this study was to assess the material and staff requirements during the first two weeks following a mass burn casualty incident involving eight patients.

### **Materials and Methods**

Materials and methods

Eight figurative patients representing “typical” burn victims were identified using the Emergo Train System<sup>©</sup> and were subsequently matched retrospectively with actual patients treated in our centre. Data including extent of injuries and materials such as dressings, ICU equipment, medication, and blood products used in the care of the patients from admission and the following two weeks was collected. We recorded the number and time of staff dedicated to the care of the patients, including surgeons, intensivists, nursing staff, paramedical staff, operation staff, consultations by other specialities, and other non-medical staff needed to run the centre

### **Results**

Results

The patients chosen sustained burns with a mean %TBSA of 51.19 (range 25 – 86). A substantial amount of material and staff hours were consumed within the first two weeks, the full results of which will be presented. We identified that 410 paraffin gauze rolls, 34 025 pairs of gloves, 7070 disposable aprons, 3711 syringes were used along with 205 602 mg of propolipid and 4663 mg of

morphine. The patients required 37 200 ml of red blood cells and 27 280 ml of plasma. A total of 6949 staff hours were dedicated to the patients, including 2640 hours for an intensive care nurse and nurse assistant each, in addition to 433 surgeon hours.

## **Conclusions**

### Conclusions

This study reflects the massive material and staff consumption required in the first two weeks of admission for eight severely burned patients to a burn centre.

Presentation Preference

Oral presentation



Abstract nr.

46

**Sequence type 15 OXA-23-producing *Acinetobacter baumannii* in a Burn Center- a descriptive survey of the course and infection control measures taken**

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Topic

Burns

Keywords

**Introduction**

An outbreak of sequence type 15 OXA-23-producing *Acinetobacter baumannii* was found in a Burn Center. *A. baumannii* is an unpleasant and complicated bacterium in a burn intensive care setting. We hereby describe action measures and the course taken to stop the spread. The aim in this descriptive retrospective observational study was to describe the course of the outbreak and infection control measures taken to stop the spread of *A. baumannii*.

**Materials and Methods**

Compliance with hand hygiene and dress code was measured. The hospital's goal for compliance was set to 90 % (dress code) and 80 % (hand hygiene) respectively. Education measures about the bacteria and its persistent too ordinary cleaning program were initiated. The bacteria were checked by these methods: matrix-assisted laser desorption/ionization-time of flight (MALDI-TOF), pulsed-field gel electrophoresis (PFGE), and the strains with carbapenemas OXA-23 were tested with check-points array analysis and was genotyped with arbitrarily primed polymerase chain reaction (AP-PCR).

**Results**

Between Nov 2014 and April 2015 nine patients were found colonised with resistant *A. Baumannii* that was identical regarding PFGE-genotype and AP-PCR-genotype. A total of 368 microbiology specimens were taken from the nine patients and carbapenem resistant *A. baumannii* was found in 64 samples (17.4 %). Hand hygiene and dress code compliance was very poor in the beginning of the outbreak, only 70 %. Education involving lectures concerning the bacteria and weekly discussions at meetings were performed during March 2015 until the end of May 2015.

**Conclusions**

Due to its innate properties, *A. baumannii* has in a short time established itself in hospitals. This should be flagged as a warning that the global increase of outbreaks of multiresistant pathogens is now also becoming a reality in Scandinavia.

Presentation Preference

Oral presentation



Abstract nr.

77

**RANDOMIZED CONTROLLED TRIAL OF 2ND DEGREE BURNS TREATMENT :  
SILVER SULFADIAZINE VERSUS NATURAL SILK.**

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Topic

Burns

Keywords

**Introduction**

Silver Sulfadiazine is the standard treatment for 2nd degree burns. These burns are common and should not necessarily require hospital treatment. However caretaking may become an issue : dressing technique is not always mastered by home health care nurses, their practical realization may be more difficult considering the surface to be treated duration of care can be too long and painful. We have evaluated the interest of a dressing based on natural silk with this indication.

**Materials and Methods**

Following diagnosis the topical to be used was determined by drawing of lots. The SSD associated with fatty gauze was applied and covered with dry gauzes and bandages. Silk was applied directly on the lesion and covered with dry gauzes and bandages. Dressings were changed every 48 hours. SSD was changed with each dressing after cleansing the lesion ; Silk was left in place until healing only the dry gauzes and bandages were changed. Pain duration of care and healing time were assessed.

**Results**

60 patients were included 19 men 11 women (7 to 83years) were treated with SSD 16 men 14 women (17 to 84 years) with silk. The average surface area treated was 5% in both groups (1% to 20% SSD) (1% to 23% S). Pain (EVA) was evaluated between 3 and 4/10 for the SSD group and 0 to 2 for the S group. Dressing duration was 20-30 minutes for SSD group and 10-15 minutes for S group. The average healing time was 13 days for both groups. 2 infections were observed in each group.

**Conclusions**

The flexibility of silk facilitates application on all surfaces and localisations like SSD. Silk treatment has the same healing time as that obtained with SSD. Silk has allowed shorter treatments because it is technically simple and less painful as the lesion was never exposed to air. A larger study should confirm that 2nd degree burns can be managed with silk dressing as outpatients, by

home health care nurses, inexperienced in burns and even for larger surfaces and reduce the cost effective of the treatment and the need for painkillers.

Presentation Preference

Oral presentation



Abstract nr.

97

## **Chlorhexidine gluconate-induced chemical burns in an extremely premature newborn treated with allogenic amnion**

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Topic

Burns

Keywords

### **Introduction**

Chemical burns in premature infants caused by using the skin disinfectant Chlorhexidine gluconate (CHG) are associated with high morbidity and mortality. Conservative treatment is preferred as surgery may further increase morbidity and mortality. We present the use of allogenic human amnion as a new salvage procedure for the treatment of burns in premature infants.

### **Materials and Methods**

Two premature infants born at respectively 24 and 25 weeks of gestation suffered a chemical burn on the trunk after inadvertent exposure to a 5% alcohol based CHG solution. One infant was treated with freshly harvested allogenic amnion from a newborn delivered by caesarean. The amnion was changed every 4<sup>th</sup> day and microbiological cultures were taken at the same time. In the other infant amnion stayed in place until it fell off. The transparent nature of amnion made daily wound observation easy. Treatment was well tolerated by the premature infant and easily performed.

### **Results**

Complete wound healing occurred within 10 days in both infants without any signs of infection and all wound cultures were negative. The first infant was seen at 18 months follow up. The area of the healed burn showed some areas of hypopigmentation, but no signs of hyperpigmentation or hypertrophic scar formation. The second infant died 4 weeks later due to respiratory failure.

### **Conclusions**

Because of its unique properties, allogenic human amnion could be a promising salvage procedure for the treatment of CHG-induced chemical burns in preterm infants.

Presentation Preference

Oral presentation



Abstract nr. 100

**Simplified easy-to-use hydro active dressing for facial burns prevents complications, relieves pain, increases healing and provides time-savings.**

The Burns Unit at Copenhagen University Hospital, admits around 250 patients a year. This includes burn injuries from Denmark, the Faroe Islands and Greenland. Insufficient documentation has excluded 7 patients, giving data on a total of 33 patients.

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Topic	Burns

Keywords

### Introduction

The patients ages vary from 2-84 years, average age for adults is 27 years. The primary cause of accident was flashburns, explosions and scaldings. Facial burns are expected to heal within 14 days. The objective of the study was to explore whether the use of Epicite Hydro (EH) can improve healing time of facial burns, reduce time of hospitalization, save time for the nurses as well as covering patient experience.

### Materials and Methods

For a period of 9 months, all patients admitted with facial burns had the dressing applied within 48 hours of the accident. To explore the benefits of EH, we used a quantitative questionnaire, which was filled out by nurses. The questionnaire included both patients and nurses experiences of application, treatment and duration of treatment.

### Results

33 patients were included in the study. TBSA involvement of the facial burns varied between 0,5-4,5%, 3 patients had an average facial TBSA of 73,4%. The burns were superficial and deep 2<sup>nd</sup> degree burns as well as 3<sup>rd</sup> degree burns. From the questionnaire we found following results: All facial burns were healed in average of 8,9 days. 22 patients experienced the application of EH as "very comfortable". 18 patients experienced "no pain" related to their facial burns during this treatment, 9 patients experienced "some pain". Nurses found EH easy to apply, the majority spent less than 10 min. applying it, and at the most between 10-20 min. All nurses involved found the treatment relevant for future use.

## **Conclusions**

Using EH on facial burns seems to relieve pain and reduce time of healing. The application of EH has shown to be easy and less time consuming. According to the patients experiences it has shown to be a comfortable treatment. Due to the positive results of using EH, the department has changed the Treatment Guidelines for facial burns and the EH is now standard treatment for facial burns in Denmark.

Presentation Preference

Poster presentation

# Cosmetic Surgery



2022  
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Abstract nr.

61

**The usual rhinoplasty techniques, which are closed rhinoplasty and open rhinoplasty, have many limitations.**

**After more than 20 years of performing both techniques I was able to check the lack of predictability that makes it have a normally accepted rate of reintervention of 25%**

**All this motivates me to design my own technique that combines the best of both**

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Topic

Cosmetic Surgery

Keywords

### **Introduction**

introduction

The usual rhinoplasty techniques, which are closed rhinoplasty and open rhinoplasty, have a considerable number of reoperations.

Since 2008 I have developed my own technique that combines the best of closed technique and open technique with much more predictable and natural results as well as a low incidence of reinterventions.

### **Materials and Methods**

Materials and methods

Since 2008 I have performed 830 rhinoplasties with only 7% reoperations. My technique allows a perfect visualization of the nasal anatomy, understand the most appropriate maneuvers to correct aesthetic alterations and check the result of the same only reposition the skin and subcutaneous tissue.

I make a bilateral marginal incision that is connected below the columella and allows a very similar exposure to external rhinoplasty without the inconvenience of the external incision at the level of the columella.

### **Results**

Results

The results show that it can be used in any aesthetic alteration of the nasal tip such as an asymmetry of the winged cartilages, a square or boxed nasal tip and also in the case of laterorrhea or ossicartilaginous humps. The only limitation is in some cases where it is necessary to place grafts very close to the nasofrontal angle but there is no problem with the placement of most cases of "spreader graft"

## **Conclusions**

conclusions

It is a more logical and reliable technique with much more predictable and natural results without the look of an operated nose. It allows you to combine it perfectly with functional surgery such as a septoplasty and / or turbinoplasty.

Presentation Preference

Oral presentation



Abstract nr.

106

**What does a facelift surgeon really do –a pilot study of 154 first questionnaires**

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Topic

Cosmetic Surgery

Keywords

**Introduction**

Although previous studies have reviewed face and necklift anatomy and techniques, seldom were the actual techniques surgeons like to use summarized in a single work.

**Materials and Methods**

We sent a Google Forms survey with 20 surgical technique questions to a group of European plastic surgeons to find out the most popular technical details of this complicated operation. Answers were analyzed, and we compared surgical techniques of the surgeons with most facelifts performed (N=43) to surgeons operating a facelift once a month or more seldom (N=111). Questions covered anesthesia, technical details, sutures, additional procedures and operating time.

**Results**

As expected, most experienced surgeons reported shorter operating times, but also operated more often under local anesthesia. The most frequent additional procedure in both surgeon groups was fat grafting. The most common surgical techniques used by the experienced surgeons were superficial-musculo-aponeurotic-system (SMAS) plication and SMAS resection, minimal access cranial suspension (MACS) lift being not that popular.

**Conclusions**

We were able to gather important information about facelift techniques of a big group of plastic surgeons in this pilot study. The study will be continued and sent out to a bigger group of international plastic surgeons during next months to collect more powerful data.

Presentation Preference

Oral presentation



Abstract nr.

117

**Long-term results following abdominoplasty using three vertical quilting sutures technique. (Preliminary results).**

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Topic

Cosmetic Surgery

Keywords

### **Introduction**

Svuntuaðgerð er eftirsótt aðgerð á sviði lýtaskurðlækninga og fer algengi hennar vaxandi <sup>1</sup>. Algengasti fylgikvillinn er myndun sermigúls en aðferð sem sýnt hefur vænlegan árangur í að draga úr myndun þeirra er að leggja saum milli húðflipa og djúpa vöðvafells, með eða án ísetningu kera. Enn sem komið er liggja ekki fyrir sannfærandi niðurstöður sem sýna fram á bestu mögulegu staðsetningu saumanna. Markmið rannsóknarinnar var að kanna áhrif þriggja lóðréttra áframhaldandi sauma, án ísetningu kera, á árangur svuntuaðgerðar.

### **Materials and Methods**

Afturskyggn rannsókn á 283 sjúklingum sem gengust undir svuntuaðgerð með fitusogi frá 2010-2021. Skráðir voru bakgrunnsþættir sjúklinga, afdrif og fylgikvillar. Meðal eftirfylgd var 5,1 ár. Rannsóknin var samþykkt af Vísindasiðanefnd.

### **Results**

Alls voru framkvæmdar 283 svuntuaðgerðir á 11 ára tímabili eða að meðaltali 25,7 aðgerðir á ári. Langflestir sjúklingar voru konur en aðeins sex karlar (2%) gengust undir svuntuaðgerð á tímabilinu. Þá var meðalaldur sjúklinga 45 ár. Alls voru 54 sjúklingar með offitu en meðallíkamsþyндarstuðull var 27,3. Tólf prósent sjúklinga höfðu fyrri sögu um reykingar og 13% höfðu gengist undir offituaðgerð. Rúmlega fimmtungur sjúklinga hafði sögu um keisaraskurð en aðeins 5% höfðu áður gengist undir fitusog og/eða svuntuaðgerð.

### **Conclusions**

Flestir fylgikvillar svuntuaðgerða eru minniháttar. Algengastur er myndun sermigúla þrátt fyrir tilraunir lýtaskurðlækna til að draga úr myndun þeirra. Niðurstöður þessarar rannsóknar sýndu mjög lága tíðni sermigúla en allir sjúklingarnir fengu þrjá samfleytta sauma í húðflipa án ísetningu kera. Aðrir fylgikvillar, þ.e. húðsýking, blæðing, eða blóðsegar voru einnig sjaldgæfir.

Presentation Preference

Poster presentation

# Craniofacial / Cleft Lip and Plate Surgery



2022  
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Abstract nr. 50  
**The use of tongue flaps in closure of anterior palatal fistulas**

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Topic Craniofacial/Cleft lip and palate Surgery

Keywords

### **Introduction**

Anterior palatal fistulas in cleft lip and palate patients can affect speech and cause leakage of food and liquids to the nasal cavity. Furthermore, large anterior palatal defects are a known challenge to reconstruct and limits soft tissue coverage at the time of alveolar reconstruction.

### **Materials and Methods**

Four patients with anterior fistulas were reconstructed with tongue flaps at Karolinska University Hospital in 2021. Three of the patients were borne with bilateral cleft lip and palate and one with unilateral cleft lip and palate. The patients were 10-14 years of age at the time of surgery. All patients had previously had attempts of closing the fistulas with local flaps and/or buccinator flaps. Anteriorly based tongue flaps measuring 1/3-2/3 of the width of the tongue were used to reconstruct the defects. Mucosa and a thin layer of muscle was included in the flap. Postoperatively the patients were put on a liquid/soft diet until the flap was split after 14-16 days.

### **Results**

One of the patients showed signs of local infection 10 days postoperatively and was treated with per oral antibiotics. No other complications were registered. None of the patients have reported nasal regurgitation or other symptoms of oro-nasal fistulae at the time of follow-up 3-11 months postoperatively (mean 8 months).

### **Conclusions**

Even though the tongue-flap has the disadvantage of being a two-stage procedure it appears to be a safe and reliable method to reconstruct larger anterior palatal fistulas.

Presentation Preference

Oral presentation



Abstract nr. 102

**The anatomical basis of the modiolus perforator flap**

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Topic Craniofacial/Cleft lip and palate Surgery

Keywords

**Introduction**

Studies have shown that the facial artery supplies its overlying skin with several small perforators along its course. Reports vary from 2-6 perforators and their location is inconsistent although a pattern of increased density has been noted lateral to the angle of the mouth. This finding is in concurrence with our clinical experience and the aim of this anatomical study was to confirm the location and topographical characteristics of the modiolus perforator.

**Materials and Methods**

5 fresh cadaver heads were studied. The external jugular arteries were injected with blue colored polyurethane and allowed to solidify prior to dissection. The specimens were dissected bilaterally, raising a cheek flap towards the nasolabial fold. All perforators originating from the facial artery within an intermuscular space (modiolus window); lateral to the modiolus chiasma at the orbicularis oris-, inferior to the zygomaticus major-, superior to the rhisorius- and medial to the masseter muscles, were dissected to describe their location and topography. All perforators were marked, photographed and registered for evaluation.

**Results**

Several perforators were encountered along the course of the facial artery 2-5 between the inferior and superior labial artery and 2 on average within the modiolus window, ranging from 1-3. A significant perforator was consistently found in every case at the level of the modiolus. The facial artery runs in a tortuous fashion at this level and the perforators were located on a bent knee, up or down and never to the side. This finding is important in terms of the great mobility of the modiolus area.

## **Conclusions**

This anatomical study verifies the presence of a consistent and reliable “modiolus” perforator at the angle of the mouth originating from the facial artery. The persistent location and specific morphology of the modiolus perforator and facial artery at the level of the modiolus is the vascular basis of the versatile modiolus perforator flap.

Presentation Preference

Oral presentation



Abstract nr.

115

**Treatment of Orbital Fractures – a Critical Analysis of Ophthalmic Outcomes and Scenarios for Re-intervention**

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Craniofacial/Cleft lip and palate Surgery

Keywords

**Introduction**

Malplaced implants in orbital reconstruction may lead to serious complications and necessitate re-intervention. The aim of this study was to describe outcomes, complications and scenarios of re-intervention in a historical case series of orbital fractures treated with free-hand orbital wall implants. The main hypothesis was that early re-interventions are mainly due to malplaced implants in the posterior orbit.

**Materials and Methods**

Retrospective review of 90 patients with facial fractures involving the orbit, reconstructed with radiopaque orbital wall implants, from 2011 to 2016. Data was obtained from medical records and CT images. Recorded parameters were fracture type, ocular injury, ocular motility, diplopia, eye position, complications and re-interventions. Secondary reconstructions due to enophthalmos were volumetrically analysed.

**Results**

Early complications requiring re-intervention within one month were seen in twelve (13%) patients, where all except two were due to malplaced implants. The implant incongruence was without exception found in the posterior orbit. Late complications consisted of 4 (4%) cases of ectropion and 5 (5%) cases of entropion that needed corrective surgery. Sixty-seven % of the patients with eye-lid complications had undergone repeated surgeries. Secondary surgeries were performed in nine (10 %) patients. Five of these patients had secondary reconstruction for enophthalmos and associated diplopia. None of these patients became completely free from either enophthalmos or diplopia after the secondary surgery.

**Conclusions**

Re-intervention after orbital reconstruction was mainly related to malplaced implant in the posterior orbit. Incomplete results in patients requiring secondary surgery infer the importance of accurate restoration of the orbit at primary surgery.

Presentation Preference

Oral presentation



Abstract nr.

119

## **Health-related Quality of Life of Children Treated for Non-syndromic Craniosynostosis**

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Topic

Keywords

### **Introduction**

Health-related quality of life (HRQoL) allows acquisition of the subjective perspective of patients regarding their health and function; yet a very few studies have been evaluated HRQoL of patients treated for craniosynostosis (CS).

### **Materials and Methods**

School-aged children (7–16 years) treated for non-syndromic CS were assessed using the Pediatric Quality of Life Inventory (PedsQL) 4.0 Generic Core Scales via both self- and proxy reports and compared to a normative sample. Cognitive functioning was controlled by assessed intelligence quotient and adaptive behavior skills.

### **Results**

Seventy-three patients and their parents responded to the PedsQL (response rate: 80.2%). Patients generally estimated average HRQoL with no difference compared to the normal population sample. Further, no difference in HRQoL was found between treated sagittal (SS) or metopic synostosis. In the SS group, surgical methods involving spring-assisted surgery and pi-plasty were unrelated to HRQoL outcomes. Additionally, HRQoL was highly correlated with intelligence quotient (IQ) and adaptive behavior skills (ABAS). Furthermore, we observed differences in estimated HRQoL between self- and proxy reports (*i.e.*, parents estimated child HRQoL as higher than did the children).

### **Conclusions**

Children treated for CS have a generally average HRQoL, and neither CS type nor surgical method influenced HRQoL outcomes. Moreover, children and parents estimated HRQoL differently, suggesting the importance of using both self- and proxy reporting in patient-reported measures. We found that HRQoL was strongly related to IQ and ABAS, indicating that the PedsQL can be used as a screening instrument to identify craniofacial patients in need of further psychological assessment.

Presentation Preference

Oral presentation



Abstract nr.

123

**Improved facial and skull base symmetry following osteotomy and distraction of unilateral coronal synostosis**

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Craniofacial/Cleft lip and palate Surgery

Keywords

**Introduction**

Unicoronal synostosis (UCS) results in a surgically demanding deformation. Not only is the deformity asymmetric in the calvarium but also presents with facial scoliosis and orbital dystopia. Traditional cranioplasties correct the forehead but have little effect on the face and orbits.

**Materials and Methods**

The presents study presents a consecutive series of patients operated for UCS with osteotomy of the fused suture combined with distraction osteogenesis. Orbital dystopia angle (ODA), anterior cranial fossa deviation (ACFD) and anterior cranial fossa cant (ACFC) were measured and compared on preoperative CT and at time of distractor removal.

## Results

Fourteen patients were included. They were operated at 8.0 (4.3 to 16.6) [mean (range)] months of age. The blood loss was 6.1 (2.0 to 15.2) ml/kg and the length of stay was 4.4 (3.0-6.0) days. ODA improved from -9.7 (-1.6 to -12.8) degrees to -1.1 (-4.4 to 7.0) degrees,  $p < 0.001$ . ACFD improved from 11.5 (6.4 to 32.8) degrees to 3.7 (10.0 to -5.8) degrees,  $p < 0.001$ . ACFC improved from 2.5 (-0.5 to 4.8) to 1.7 (4.5 to -2.4),  $p = 0.003$ .

## Conclusions

In summary, osteotomy combined with a distractor for UCS straightens the face and relieves orbital dystopia by affecting the angle of the nose in relation to the orbits, by correcting the deviation of the cranial base in the anterior cranial fossa and by lowering the orbit on the affected side. In addition, it has a favourable morbidity profile with low peroperative bleeding and short length of stay. This technique may be a great improvement in surgical treatment of UCS.

Presentation Preference

Oral presentation



Abstract nr.

124

**Spring-Assisted Posterior Vault Expansion in Syndromic Craniosynostosis**

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Topic

Craniofacial/Cleft lip and palate Surgery

Keywords

**Introduction**

Spring-assisted posterior vault expansion (SA-PVE) has previously been shown to be effective in the treatment of multisuture craniosynostosis during the first years of life.

The aim of this study was to evaluate the results of SA-PVE in children with craniosynostosis and signs of high intracranial pressure (ICP).

**Materials and Methods**

All patients over 2 years of age, operated with SA-PVE between 2018 and 2020 at the craniofacial unit at Sahlgrenska University Hospital were retrospectively analysed. A circumferent occipital osteotomy created a bone flap, and six springs were placed along the osteotomy. Computed tomography (CT) was performed prior to the operation, at the time of spring removal and one year postoperatively. The intracranial volumes (ICV) were calculated from the CT images using

Syngo.Via 30 software (Siemens). Demographic data of all patients were collected. The presence of symptoms and objective signs of high ICP, i.e ophthalmoscopic findings such as papilledema, was evaluated before and after surgery.

## **Results**

15 patients operated with SA-PVE were identified. Four patients lacked adequate CT imaging and were excluded. The remaining patients (n=11, (Crouzon/Pfeiffer (n=5), Muenke (n=1), multiple craniosynostosis (n=5)) were included in the analysis. No major perioperative complications were observed. The median age at operation was 3.9 years (range 2.1-12.8. In two patients, the springs were removed prematurely due to the risk of exposure (n=1) or exposure (n=1) of the springs and one patient had wound problems after head trauma. The median increase in ICV was 274cm<sup>3</sup> (range 129-365), which represents +19% (range 9-30), from insertion to removal of the springs and the effect persisted one year after the operation. Symptoms and signs related to high ICP, greatly improved or were absent at follow-up 4 weeks and 1 year postoperatively.

## **Conclusions**

SA-PVE is an effective surgical treatment in children with craniosynostosis and elevated ICP.

Presentation Preference

Oral presentation

# Microsurgery



2022  
**SCAPLAS Congress**  
Scandinavian Association of Plastic Surgeons



Abstract nr.

29

**Free microvascular fibula as salvage procedure for acute cervical osteomyelitis caused by epidural abscess**

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Topic

Microsurgery

Keywords

**Introduction**

Acute cervical osteomyelitis due to an epidural abscess and pyogenic spondylodiscitis in an immunosuppressed patient in which conservative treatment has failed is a challenging problem for the reconstructive surgeon. This report presents our novel approach to treat such a condition in a 54-year-old patient in which antibiotic treatment and decompression of the medulla by laminectomy of C4-C6 failed

**Materials and Methods**

In general anesthesia, debridement of all infected tissue, including anterior corpectomy of C4-C6 was performed. Simultaneously, a free microvascular fibula graft was harvested, adapted to the bone defect, and anastomosed to the superior thyroid vessels. The graft was stabilized with an anterior plate. A scheduled posterior stabilization was performed one week later. Staphylococcus Aureus was cultured from bone samples and was treated with antibiotics.

## **Results**

The postoperative course was uncomplicated besides a dorsal midline defect six weeks postoperatively that was closed with a perforator flap. Four years on, the patient is infection free and regular control CT and MR scans show progressive fusion and hypertrophy of the fibula graft to C3/C7 vertebrae.

## **Conclusions**

A free microvascular fibula graft combined with posterior stabilization could be a promising salvage, and possibly, primary procedure in cases with progressive myelopathy caused by acute cervical osteomyelitis due to spinal infection. The bone graft contributes to blood circulation, delivery of antibiotics, and an immunological response to the infected wound bed and can stimulate rapid fusion and hypertrophy over time.

Presentation Preference

Poster presentation



Abstract nr.

75

## **Changes in Quality of Life (QoL) and Extremity Index in Patients with Lymphedema Treated with Microsurgical Lymphaticovenous Anastomosis (LVA)**

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Topic

Microsurgery

Keywords

### **Introduction**

The lymphaticovenous anastomosis (LVA) procedure involves identification of obstructed lymphatic vessels and targeted bypass of these into neighbouring venules in order to treat lymphoedema. The LVAs have been shown to improve QoL, reduce swelling, number of infections, and need for compression garments in lymphedema patients. This study is the first one assessing the results of LVA surgery in Sweden, performed at Uppsala University Hospital.

### **Materials and Methods**

Twenty-one patients with lymphedema were operated on with LVA between May 2018 and June 2020, with 18 patients included in the study. Outcomes were primarily measured by assessing changes in a lymphedema-specific QoL questionnaire (LyQLI). Changes in lymphedema index (volume) for upper and lower extremities were included as a secondary outcome. LyQLI and extremity index were documented before surgery and during two follow-up appointments between 6-11 months and 12-24 months post operation.

### **Results**

Eighty-five percent of patients improved their overall LyQLI score after 12-24 months follow-up. The means of the separate domains improved with 13 ppts (SD 14,  $p=0.007$ ) in the physical, 14 ppts (SD 18,  $p=0.020$ ) in the psychosocial and 15 ppts (SD 13,  $p=0.002$ ) in the practical domain. Seventy-seven percent of patients improved their upper or lower extremity lymphedema index. The means decreased from 270.7 (SD=34.7) to 228.3 (SD=31.5) in lower extremities and 126.9 (SD=10.6) to 123.2 (SD=7.2) in upper extremities after 12-24 months.

### **Conclusions**

Our results suggest that LVA has a positive effect on a majority of patients' LyQLI scores as well

as their upper or lower lymphedema extremity index.

Presentation Preference

Oral presentation



Abstract nr.

79

**Perioperative Evaluation Form and Predictive Factors for Lymphaticovenous Anastomosis (LVA) Surgery for Lymphoedema (the ppLVA study)**

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Topic

Microsurgery

Keywords

**Introduction**

The lymphaticovenous anastomosis (LVA) procedure involves identification of obstructed lymphatic vessels and targeted bypass of these into neighboring venules in order to treat lymphoedema. The LVAs have been shown to improve QoL, reduce volume, infection episodes, and the need for compression garments in lymphedema patients. However, there are still many unanswered questions related to LVA surgery; e.g., the timing of surgery, location, and what perioperative findings predict good outcomes. The study aims to use a structured perioperative evaluation form to assess the correlation between pre – and perioperative findings and post-operative outcomes.

**Materials and Methods**

Perioperative findings during LVA surgery are collected systematically according to a newly developed grading tool. The findings are compared to pre- and post-operative outcome measures (volume, indocyanine green lymphography and QoL questionnaires) at 6 and 12 months. Patients are recruited from centres in Holland and Sweden. A multivariate analysis will be used for the statistical analysis and both statistical and descriptive analysis will be used for the assessment of function and QoL.

## **Results**

125 patients have been operated on and recorded with the perioperative form. Outcome data from the first 30 patients will be presented.

## **Conclusions**

A perioperative evaluation form could prove to be a useful tool to predict the outcome of LVA procedures, and possibly shine a light on previously unanswered questions, as it is unknown what the factors for successful outcomes are. The study aims to show whether pre- and perioperative findings correlate to outcomes, and as such direct future surgical treatment protocols for lymphoedema.

Presentation Preference

Oral presentation



Abstract nr.

80

**Oncovascular reconstruction for limb preservation in surgery for soft tissue sarcomas of the proximal thigh**

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Topic

Keywords

**Introduction**

Radical excision is the key to achieving local disease control and improving overall survival in soft tissue sarcomas. When the tumor surrounds or invades major blood vessels, the surgery can involve sacrifice of the involved vessels. In the proximal thigh, reconstructing the resected vessels together with the soft tissue defect allows preservation of the limb. The aim of this study was to assess the vascular and functional outcomes of these reconstructions.

**Materials and Methods**

Patients who had undergone oncovascular reconstruction during the treatment of proximal thigh soft tissue sarcoma at a tertiary centre in 2014-2020 were reviewed for details of the reconstructions as well as the oncological and functional outcomes.

**Results**

Eight patients, median age of 59 (range 19-77), were identified. The superficial femoral artery and vein was reconstructed in all patients, with the external iliac vessels included in three and the deep femoral vessels in one. Soft tissue coverage was done with a pedicular sartorius or gracilis in three patients and a microvascular LD in three. Additional two free flap reconstructions were performed later for wound healing problems. The histological margins were wide (1), marginal (6)

and intralesional (1). The graft patency was assessed in seven patients after a median 48 (1-76) months. The arterial graft was patent in 6/8 and the vein graft in 2/8 patients. The median Musculoskeletal Tumor Society score was 70 (43-87)% and the Toronto Extremity Salvage Score 90 (75-100)%. The gait was normal in 5/6 patients assessed. Three of the patients had lymphedema with more than 10% volume increase. No local recurrence of the sarcoma was detected.

### **Conclusions**

Oncovascular surgery combined with soft tissue reconstruction enables limb sparing treatment of soft tissue sarcomas of the proximal thigh. Despite the complex reconstructions and high early morbidity, the achieved long-term functional outcomes are generally good.

Presentation Preference

Oral presentation



Abstract nr.

81

**Robotic Microsurgery – A Study on the Learning Curve for a Novel Technique in Plastic Surgery**

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Topic

Keywords

**Introduction**

Becoming a microsurgeon requires a high degree of manual dexterity and many years of practice. Different robotic systems have been developed with the purpose of reducing tremor and increasing precision. The most well-known is the Da Vinci-robot though this is not suitable for microsurgery due to its bulky built-in instruments. The MicroSure robot, used in the current study, is the first of its kind specifically developed for microsurgery. The MicroSure robot was developed at the Eindhoven University of Technology in collaboration with surgeons at Maastricht University Medical Centre. This is the first time the system has been tested outside the developing site of the Netherlands.

This study sought to determine the learning curve using the MicroSure robot to carry out a micro-vascular anastomosis and to assess differences between experienced microsurgeons and inexperienced surgeons.

**Materials and Methods**

Doctors of three levels of microsurgical experience were asked to participate, each booked for a total of 10 sessions in which they performed one micro-vascular anastomosis by hand and one using the robot. Each anastomosis was standardized: 2 mm Polyvinyl alcohol vessels anastomosed with six single 9-0 sutures. Data was collected on time, anastomosis quality, and ergonomics. A self-evaluation questionnaire on each session was also completed.

**Results**

Time taken for the first robot assisted anastomosis ranged from 28-79 minutes but almost all participants, regardless of experience, cut their times in half after the first five sessions.

**Conclusions**

The current study shows that robot assisted microsurgery was quickly adopted by surgeons of all

levels of experience. For experienced microsurgeons, robot assisted microsurgery is initially slower than conventional microsurgery but their learning curve is steep and the robot conferred a benefit to anastomosis quality in this group.

Presentation Preference

Poster presentation



Abstract nr. 87  
**Microsurgical replantation of a total scalp avulsion.**

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Topic Microsurgery

Keywords

### **Introduction**

Total scalp avulsion is a rare and potentially life-threatening injury. If possible, microsurgical replantation of the scalp is the preferred treatment. Free flap reconstructions are an alternative but often result in less aesthetic results.

In this case we describe the microsurgical replantation of a total scalp avulsion in a 64-year-old female. The avulsed scalp involved all the hair, the forehead, the eyebrows, and the cutaneous upper half of the left ear.

The pre-hospital management of the patient and scalp was very effective. The scalp was transported in the correct packing and at the optimal temperature. The combination of the pre-hospital and our university hospital set-up made it possible to attach the scalp with an ischemia time of approximately 5 hours.

Good form and function of the completely avulsed tissues was achieved due to sufficient arterial and venous anastomosis of the temporal vessels.

The patient was discharged six days post-operative with a vital scalp and no complaints except partial necrosis of the ear.

### **Materials and Methods**

-

### **Results**

-

## Conclusions

-

Presentation Preference

Oral presentation

# Skin Cancer



2022  
**SCAPLAS Congress**  
Scandinavian Association of Plastic Surgeons



Abstract nr.

2

**Photoacoustic imaging for three-dimensional visualization and delineation of basal cell carcinoma in patients.**

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Topic

Skin Cancer

Keywords

**Introduction**

Basal cell carcinoma (BCC) is the most common non-melanoma skin cancer. Photoacoustic (PA) imaging is an emerging non-invasive biomedical imaging modality that could potentially be used to determine tumor borders preoperatively in order to reduce the need for repeated surgery due to non-radical excision.

**Materials and Methods**

Two-dimensional PA images were acquired using 59 wavelengths in the range 680 nm to 970 nm, and three-dimensional images were obtained by scanning the tumor using a linear stepper motor. Spectral unmixing was performed to visualize the chromophore distribution. Spectral signatures from 38 BCCs and healthy tissue were compared *ex vivo*. The technique was also applied to two *in vivo* BCCs.

**Results**

The PA spectra could be used to differentiate between BCC and healthy tissue, both *ex vivo* and *in vivo*. The difference between the spectra was analyzed statistically for the *ex vivo* samples, and found to be greatest in the wavelength range 745-965 nm ( $p < 0.05$ ). Spectral unmixing provided clear visualization of the overall architecture of the lesion and its border. The diagnosis of BCC was confirmed histopathologically in all cases.

**Conclusions**

PA imaging can be used to reliably differentiate between BCC and healthy tissue and can potentially be used to delineate tumors prior to surgical excision.

Presentation Preference

Oral presentation



Abstract nr.

5

**More sentinel lymph node biopsies for thin melanomas after transition to AJCC 8th edition do not increase positivity rate - a Danish population-based study of 7,148 patients**

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Topic

Keywords

### **Introduction**

The T1 category was revised in the 8th edition of the American Joint Committee on Cancer melanoma staging system (AJCC8) with T1b to be based on Breslow thickness (BT) and ulceration, whereas mitotic rate (MR), as used in AJCC7, was excluded. We evaluated the outcome of sentinel lymph node biopsies (SLNB) in patients with thin melanoma before and after the implementation of AJCC8 and identified predictors of positive sentinel lymph nodes (+SLN).

### **Materials and Methods**

Patients diagnosed with T1 melanomas (Breslow thickness  $\leq 1$  mm) during 2016-2017 as per AJCC7 (n=3,414) and 2018-2019 as per AJCC8 (n=3,734) were identified in the Danish Melanoma Database.

### **Results**

More SLNBs were performed in the AJCC8 cohort compared to the AJCC7 (22.2% vs. 16.2%, *P*

<0.001), with no significant difference in +SLN rates (4.7% vs. 6.7%,  $P=0.118$ ). In the AJCC7 +SLN subgroup, no melanomas were ulcerated, 94.6% had mitotic rate (MR) $\geq 1$ , 67.6% were  $\geq 0.8$  mm and 32.4% would be T1a according to AJCC8. In the AJCC8 +SLN subgroup, 10.3% were ulcerated, 74.4% had MR $\geq 1$ , 97.4% were  $\geq 0.8$  mm and 23.1% would be T1a according to AJCC7. On multivariable analysis younger age and MR $\geq 1$  were significant predictors of +SLN.

### **Conclusions**

More SLNBs were performed in T1 melanomas after transition to AJCC8 without increase in +SLN rate, and none of the AJCC8 T1b criteria were significant predictors of +SLN. Our findings indicate that the AJCC staging system is insufficient to accurately predict SLN metastasis in thin melanoma. There is a need for a more individualized approach, e.g. with the use of a prediction model taking more clinicopathological characteristics into account. We suggest that mitosis should again be included as an indicator for SLNB and that younger age should encourage SLNB.

Presentation Preference

Poster presentation



Abstract nr. 12  
**Title**

**Waiting in the lobby-  
5 cancer patients experiences of waiting while being under cancer investigation.**

**R. Andersen, RN, MSA**

Author nurse Andersen, Rikke, Odense Universitets  
hospital, Odense C, Denmark (Presenting  
Author)  
Topic Skin Cancer

Keywords

### **Introduction**

This presentation is based on a study with an anthropological approach.

The topic of my presentation is:

How does time feel when one is waiting for information on whether the cancer has spread or not after being diagnosed with malignant melanoma?

In an attempt to get an answer to this question, 5 patients in this situation were interviewed.

### **Materials and Methods**

The interviews have been performed from a phenomenological way of thinking through a semi-structured qualitative method. The informants were asked of the whole perspective of their lives while waiting for answer.

### **Results**

The interviews and analysis show that the main themes for the informers are: Time, hope and social relations. The overall theme is that they all get the sense of loss of control over their lives while they are located in the lobby, waiting for answers.

### **Conclusions**

According to some theories there are different suggestions to how it is possible to regain control in this situation.

Those informants, who are able to restore control in their lives, also have the opportunity to take control over time and how fast or slow this time goes by.

Hope is about "doing something" and being able to act and create a sense of control over one's life through rituals, repetitions and predictability.

Presentation Preference

Oral presentation



Abstract nr.

24

**New treatment guideline: Single-layer multimodal dressing on skingrafts stimulate healing, prevent infections, and give painrelief to patients**

Author

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(Presenting Author)

Topic

Skin Cancer

Keywords

### **Introduction**

In Denmark, skin graft treatment is led by wound healing principles of moisture and close contact between the graft and the defect. The close contact is established by multiple layers of dressing. Although this method has proven efficient, continual exudate formation as the graft attaches, increase the risk of graft loss due to the shear forces during multiple dressing changes. This can lead to partial graft survival or complete loss.

The objective of this qualitative appraisal was to evaluate a polymeric membrane dressing and its impact on graft attachment, pain level and overall ease to use.

### **Materials and Methods**

For 1.5 years, all suitable patients scheduled for skin cancer excision and following skin grafting were included. To better explore the benefits of the polymeric membrane dressing as a single-layer dressing, questionnaires were created and documented, which included both the surgeon, nurse and patients experience of application and treatment. The study was not funded.

### **Results**

100 patients were included. Various graft application sites included head, ears, face, hands/fingers, torso and extremities. Patients spanned from 24 - 97 years of age.

The following results were obtained from the questionnaire:

At day 7, 80-100 % graft attachment were observed at 78/100 patients.

5/100 patients reported no graft attachment.

6/100 patients reported clinical signs of infection.

On average, patients reported VAS pain scores of maximum 2.

And the overall easy-to-use percentage by surgeons and nurses were 99 %.

### **Conclusions**

Our clinical experience with the polymeric membrane dressing showed an increased graft

attachement, reduced pain during changes and an easy to apply rating in the operating room as well as the outpatient clinic. The next aim is to create a large, multicenter, randomized comparative study with other plastic surgical departments in Denmark, to evaluate the statistical significance of the polymeric single-layer method versus the multi-layer dressing method.

Presentation Preference

Oral presentation



Abstract nr.

25

**Simplified dressings on skin grafts increases healing, prevent infections, easy to use and remove.  
Gives pain relief to the patients and saves time for the nurse.**

Author

OR nurse Lindahl, Marianne Hass, Planned  
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(Presenting Author)

Topic

Skin Cancer

Keywords

### **Introduction**

Due to previous use of multilayer dressings, we experienced problems with delayed or only partly survival of skin grafts, combined with difficulties removing dressing and damaging the skin. We aimed to improve and simplify the dressings.

In 2018 we did our first trial including 17 cases. We used two products to increase healing rate and achieve an atraumatic change of dressing after 5-7 days. Positive results made us change the Treatment Guideline. We started a larger survey in Nov.2019 and finished with results from 100 cases by Sept. 2021. The Survey was not funded.

### **Materials and Methods**

A specific registration form was conducted. Collecting data regarding surgery, skin preparation, fixation and removal of dressing, the patients' experience of pain and the attachment of the skin graft. Our nurses also evaluated handling the dressing. Pictures were taken at surgery, pre-, per- and post-op and at day of removal. We use a polymeric membrane dressing, PolyMem, simplifying handling the dressing, stimulating the healing process, continuous wound-cleansing and pain relief.

### **Results**

We wanted documentation on our new Standard, and a bigger Survey was set up, using only PolyMem as a single-layer dressing directly on all skin grafts. Handling the dressing is quick and easy, results show a low pain VAS score from the patients. The single-layer dressing gives a cost-reduction over 60 % compared with former multi-layer dressings.

### **Conclusions**

With our documentation and comprehensive experience with positive results, we want to share knowledge to increase healing of skin grafts, organizing data collection etc.

All results from 100 cases have been analyzed and will be shown as a Poster at SCAPLAS.

Presentation Preference

Poster presentation



Abstract nr.

40

**Assesing the requirement for an information leaflet regarding the treatmentand expected outcome following subtotal or total nasal reconstruction with a pedicled forehead flap after skin cancer resection.**

Author

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(Presenting Author)

Topic

Skin Cancer

Keywords

### **Introduction**

The incidence of facial skin cancer has increased in recent years. Reconstruction of the nose and surrounding area can be challenging. A forehead flap has several ideal characteristics when choosing a flap for nasal reconstruction, however, the process of a pedicled flap and staged reconstructions can inconvenience the patient for up to 2 months.

In our department, there is still no information leaflet regarding this method of reconstruction. My role as one of the nurses is to carry out wound care and to serve as the initial point of departmental contact for the patients. This is particularly important as the procedure is staged and can be awkward for the patients in the intervening periods. The patients can often be uncomfortable, uncertain and worried during this period.

### **Materials and Methods**

I have conducted interviews with the patients during wound management and dressing changes, in addition to observing the sequence of staged reconstructions. I conducted interviews before and after these stages.

### **Results**

The outcome has been questions that allow me to formulate a framework for the patient information leaflet, based on my intra and post-operative experiences.

### **Conclusions**

The department needs a patient information leaflet regarding staged forehead flap reconstructions to deal with patient enquiries and outcomes, when this method is proposed.

Presentation Preference

Poster presentation



Abstract nr.

51

**Patient -reported limb edema is an important predictor of worse HRQoL among melanoma patients with local or locally advanced melanoma**

Author

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Skin Cancer

Topic

Keywords

**Introduction**

The incidence of malignant melanoma continues to rise in Western Countries while the survival rates continue to improve. There is therefore a growing need for information on the HRQoL of melanoma patients and the possible consequences of surgical procedures on HRQoL. This study assesses the HRQoL of melanoma patients after surgery with two generic HRQoL instruments.

**Materials and Methods**

This longitudinal cohort study was carried out in 2004-2009 in the Helsinki and Uusimaa Hospital district. The patients were administered two Health-Related Quality of life (HRQoL) questionnaires: the 15D and the EORTC QLQ-30. In addition, the patients were asked two selected questions from the EORTC Item library regarding lymphedema. The baseline questionnaires were administered between June 2004 and July 2007 and the patients were followed up for 24 months. The questionnaires were administered at baseline, at 6 months, 12 months and 24 months.

**Results**

Patients who reported limb lymphedema had a statistically significantly worse overall 15D score in all the time points. At 6 months, those with lymphedema had a significantly worse overall 15D score (0.883 vs 0.933,  $p = 0.001$ ) and a significantly worse score in eight of the dimensions. For EORTC-QLQ-30, at baseline, those reporting lymphedema had a statistically significantly worse global health status, as well as scoring lower at physical and emotional functioning. At 6 months, those reporting lymphedema scored lower at global health status, physical and role functioning, as well as several of the symptom scales. At 12 and 24 months, lymphedema patients continued to score lower in several of the functional scales and higher at the symptom scales. Lymphedema reporters continued to score higher at pain throughout the study.

**Conclusions**

Limb lymphedema is the most important predictor of HRQol of melanoma patients after surgery.

Presentation Preference

Poster presentation



Abstract nr. 63

## **Might Cellutome one day keep the doctor away?**

Author Head nurse Lundin, Lise, SSHF, Arendal hospital , Arendal, Norway (Presenting Author)

Topic Skin Cancer

Keywords

### **Introduction**

Wounds in general are a challenge and may take a long time to heal. Skin grafts have been used to achieve healing when conservative wound therapy fails. The use of an innovative suction device; a Cellutome™ epitel harvester (KCI) simplifies the procedure. We have done a prospective cohort trial in our outpatient facilities in Arendal Hospital, Norway.

### **Materials and Methods**

A Cellutome™ is an equipment designed to harvest the basal layer of epidermis in patch grafting fashion based on principles for suction blister epidermal grafting. The procedure can be done in an outpatient facility without local anesthetics. Every step is performed by the wound nurse alone. We were interested to try the Cellutome™ epitel harvester for a variety of chronic wounds with poor response to longtime ordinary wound therapy. Over a period of 5 months we have used it for 6 patients, 3 men and 3 women. Mean age was 70,6 (range 58 to 88) years. 5 wounds were leg ulcers and one a shoulder, and the wounds had a median duration of 8,6 months (range 2 to 36 months) prior to application. Four patients had previous split skin grafting operations without wound healing prior to the Cellutome™ treatment. All grafts were raised and harvested from the patients thigh. In one case the procedure had to be repeated 1 week after the first harvesting. All patients were followed up every week by our nursing team until wound healing was accomplished.

### **Results**

All of the 6 wounds had a significant improvement after 3 weeks. The total healing process took longer, median 7,5 weeks (range 3 to 16 weeks). All but one were a single treatment. No further surgery or anaesthesia was required and all treatments were performed by wound care nurses alone in a simple outpatient setting.

### **Conclusions**

The Cellutome™ treatment is easily applicable and its effect, although unrandomized, seems promising to help “kick start” the healing process in chronic wounds. We shall continue to observe its potential for future application.

Presentation Preference

Oral presentation



Abstract nr.

121

### **3D Frozen Section Histology - A Technique for Perioperative Complete Evaluation of Surgical Margins in Non-Melanoma Skin Cancer**

Author

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Skin Cancer

Topic

Keywords

#### **Introduction**

Basal Cell Carcinoma (BCC) is a highly prevalent skin malignancy often requiring surgical excision. Tumors are frequently located on facial subunits where tissue sparing is a priority. Traditional treatment with excision and bread loaf histology, without frozen sections, samples the surgical margins sparingly, leaving a risk of false negative resection margins. 3D histology is an array of methods aimed at ensuring examination of the entire surgical margin. We present a modified 3D method for BCC on high-risk facial localizations, allowing complete margin control perioperatively, which is practicable in a standard hospital setting without requiring extensive training of personnel.

#### **Materials and Methods**

The tumor borders are defined and marked. A double-bladed scalpel is used for excision of a circular surgical margin around the entire tumor, and a single blade is used for excision of the tumor. Both are dyed and cryostat sectioned in the pathology lab and examined by the histopathologist.

#### **Results**

Three cases are presented, illustrating the method.

#### **Conclusions**

3D histology techniques have shown high rates of sensitivity, reducing the occurrence of false negative margins and ultimately recurrence rates of BCC, thus reducing the morbidity for patients.

Most carcinomas are completely excised in one surgical intervention with this method. The method uses vertical incisions, creating a surgical bed optimized for reconstructive surgery. This 3D histology technique ensures microscopical examination of the entire surgical margin, ensuring the smallest possible defect with radically excised tumor, and is feasible in a standard hospital setting.

Presentation Preference

Oral presentation

# Transgender Surgery



2022  
**SCAPLAS Congress**  
Scandinavian Association of Plastic Surgeons



Abstract nr. 10  
**Low risk of persistent pain, sensory disturbances and complications following mastectomy after gender reassignment surgery**

Author Mrs Holmgaard, Rikke, Rigshospitalet,  
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Topic Transgender Surgery

Keywords

### **Introduction**

In recent years there has been a significant increase in referrals for transgender reassignment surgery to departments of plastic surgery in Denmark. There is currently no literature on postsurgical pain in transmen after mastectomy. We aimed to investigate the prevalence and severity of postsurgical persistent pain, sensory disturbances and complications in transmen after mastectomy.

### **Materials and Methods**

Of 90 transmen who underwent bilateral mastectomy between September 1, 2013 and August 31, 2018 were included. Patients' files were evaluated for complications and 84 (response rate 93.3%) patients answered a validated questionnaire regarding persistent pain and sensory disturbances.

### **Results**

23 patients (27.4%) reported either unilateral or bilateral persistent pain following mastectomy. Of these, 14 (60.9%) patients categorized the pain as mild. However, 77 (95.2%) of the patients did not use analgesics and non-opioid pain medication was sufficient for the remainder. Sensory disturbances were found in 44 (47.5%) of the patients and four (4.8%) patients reported clear signs of neuropathic pain. Seven (7.8%) patients developed haematomas and areola necrosis was seen in four (4.4%) patients. Due to infection seven (7.8%) patients received antibiotics.

### **Conclusions**

Mastectomy as part of gender reassignment surgery is a safe procedure with few, non-severe, complications. Although a quarter of the patients experienced persistent pain, the majority of that pain is mild, intermittent and can be treated with non-opioid pain medication.

Presentation Preference

Poster presentation



Abstract nr.

17

## **Dermal Nipple-Areola Complex Flap Method in Female to Male Gender Affirming Surgery**

Author

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Co-author(s)

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Topic

Transgender Surgery

Keywords

### **Introduction**

Subcutaneous mastectomy (SCM) plays a major role in female to male (FtM) gender affirming surgery, and obtaining a flattering chest contour remains a challenge to the surgeon. We present a novel operative method using a dermal flap, with the aim to create a naturally masculine appearance, while reducing the risk of nipple-areola complex (NAC) complications by maintaining sufficient neurovascularisation.

### **Materials and Methods**

Through a horizontal incision superior to the NAC, a thoracic full skin flap was elevated at the dissection plane for mastectomy. SCM was continued inferiorly, creating an inferior dermal flap including the NAC. The skin surrounding the NAC was de-epithelialised, enabling the inferior flap to be inserted beneath the superior flap. A circular defect was created in the superior flap, into which the NAC was interpolated.

### **Results**

The surgery delivered satisfactory results with an aesthetically pleasing masculine appearance and a high level of patient satisfaction. We were able to place the residual scars inferiorly along the pectoral muscles, allowing some camouflage. The dermal NAC flaps provided a uniform filling effect to the chest, further contributing to the male aesthetic. There were no NAC complications.

### **Conclusions**

The dermal NAC flap method could be applied as an excellent alternative to the traditionally performed free nipple graft technique in FtM chest contouring. The technique is simple, provides an aesthetically appealing outcome, and poses a low risk of NAC complications. Intraoperatively, it allows for good exposure and a uniform removal of breast tissue, as well as repositioning and/or reduction of the NAC where required.

Presentation Preference

Poster presentation



Abstract nr.

54

**Pediced deep inferior epigastric perforator (DIEP) flap with free nerve grafts, a novel method for phalloplasty with a minor donor site scar**

Author

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Topic

Transgender Surgery

Keywords

**Introduction**

Phalloplasty is considered as one of the most complex part of GAS (gender affirmation surgery) to transmale patients. Various techniques has been described in literature. The golden standard is radial forearm flap (RFF) but some transmale patients find out that the donor site scar is too visible and stigmatizes. Also the donor site of another common phalloplasty flap option, anterolateral thigh (ALT), can be difficult to hide.

**Materials and Methods**

A case study of phalloplasty with pediced DIEP flap with free nerve grafts

**Results**

DIEP (deep inferior epigastric performant) flap is a workhorse of microsurgical breast reconstruction. We found out DIEP flap is also a versatile alternative to create a good phalloplasty result. It can be harvested as a pediced flap and the sensory function can be reconstructed with free nerve grafts. The donor site can be closed as after usual DIEP flap harvesting and the postoperative scar resembles the results after abdominoplasty.

We present a case study of a phalloplasty performed with a pediced DIEP flap with free nerve grafts. The phalloplasty was done without urethral lengthening. Single operation with scrotoplasty was performed in June 2021 and no major postoperative complications were diagnosed. The index patient got his tactile sensation to the phallos nine months after surgery and the donor site scar was aesthetic pleasant. The free nerve grafts were harvested from inner side of non-dominant forearm.

We present the case report with perioperative and postoperative photo series.

**Conclusions**

This case study shows that deep inferior epigastric flap is a good choice for phalloplasty for

patients who are not applicable to phalloplasty with radial forearm or some other more common phalloplasty method. DIEP flap is easy to harvest and the tactile sensation can be achieved with nerve grafts. The major benefit with DIEP flap is the minor donor site scar.

Presentation Preference

Oral presentation



Abstract nr.

127

**Chest masculinization in transgender men; a 20-year material from a national center**

Author

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Topic

Transgender Surgery

Keywords

**Introduction**

Several western countries, including Norway, have experienced a drastic increase of referrals to specialist gender services of transgender and gender-diverse people. Chest masculinization surgery is for many an important element in treatment of GD for transmen. National data concerning this particular group has yet to be investigated. The aim of this study is to examine and evaluate the techniques and surgical outcome of chest masculinization surgery in a 20-year material from a single center in Norway.

**Materials and Methods**

A retrospective review of all transmen patients who had undergone chest masculinization surgery at Oslo University Hospital between 2000 and 2020. Statistical analysis with comparison of techniques and evaluation of development over 20 years was examined retrospectively.

**Results**

Results:

342 patients underwent bilateral chest masculinization, 217(63.5%) with double incision with free nipple graft (IM) and 125 (36.5%) with periareolar technique(PA). In 20 years the average age has decreased from 30.4 (range 19-68) to 24.4 years (17-61). Average BMI was significantly lower in the PA-group than in the IM-group 22.4 vs 26.4 ( $p < 0.001$ ). Complication rate was 22.2%, a postoperative bleeding being the most frequent (9.6%). Over time, post-operative bleeding fell from 11.1% to 4.1% within the IM-technique when subdividing into 7-year groups. Revision surgery was required in 26.6 % of the cases, periareolar technique required significantly more liposuction and removal of excess breast tissue.

## **Conclusions**

The number of patients referred and operated on has increased drastically over a 20 year period, the age at the time of surgery has also fallen significantly. When comparing techniques, the outcome concerning complications and revisions is at an acceptable level with reference to the current literature. Post-operative bleeding and revision surgery occurs more often with the periareolar technique.

Presentation Preference

Oral presentation

# Other Reconstructive Surgery



2022  
**SCAPLAS Congress**  
Scandinavian Association of Plastic Surgeons



Abstract nr.

6

**Management of de-gloving injuries of the lower limb, simple skin-grafts with satisfactory functional outcome**

Author

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Topic

Other Reconstructive Surgery

Keywords

**Introduction**

A degloving injury (avulsion) is a type of injury in which an extensive section of skin is partially or completely torn off the underlying tissue and the blood supply. It is often associated with complex major trauma requiring a multidisciplinary team. Due to underlying damage of soft tissue and open fractures amputation can be a lifesaving and an optimal option. However, it is possible to treat these lesions with simple skin-grafts with a good outcome.

**Materials and Methods**

We present 2 cases and pictures of severe lower limb degloving injuries and their management. In both cases amputation was considered, but they were managed with split-thickness skin graft (STSG) and full-thickness skin grafts (FTSG) and had satisfactory functional outcomes

**Results**

A Twenty-five-year-old young female got her foot caught under a train. The foot was degloved. Due to the extensive defect with exposed fascia plantar ligaments and the loss of soft tissue at the sole of the foot, amputation was considered. However, after 4 weeks of Negative Pressure Wound Therapy (NPWT) she was treated with FTSG and STSG.

A Seventy-year-old female cyclist was hit by a truck in a right turn accident and was dragged 10 meters. She suffered a degloving injury of the circumference of the whole left leg besides from the foot with multiple lesions of the muscle and open fractures. All treated conservatively.

She was treated with FTSG harvested from the de-gloved skin and later STSG. Amputation was considered due to her extensive injuries and exposed bone.

Both patients have acceptable function of their leg and no pain when walking

**Conclusions**

Degloving injury are complex injury often high-energy trauma with further damages to underlying soft-tissue and bones. It is possible to salvage extremities even with extensive injuries and obtain a satisfactory functional outcome with sufficient wound care and skin-grafts.

Presentation Preference

Oral presentation



Abstract nr.

58

**THE GARGANTUAN CHALLENGE OF STARTING A "DE NOVO" ACGME ACCREDITED RESIDENCY PROGRAM IN PLASTIC SURGERY. OUR EXPERIENCE ON HOW TO MAXIMIZE RESIDENT EDUCATION IN AESTHETIC SURGERY DURING TRAINING.**

Author

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Topic

Other Reconstructive Surgery

Keywords

**Introduction**

In 2014 we started in New Jersey (USA) a new plastic surgery residency program. Our program was ultimately accredited by ACGME as an independent program with 3 residency positions. We were one of the only two programs that received the final accreditation. The process is extremely complicated and regulated by the Residency Review Committee for Plastic Surgery (RRC-PS) of the ACGME, which sets educational requirements and accredits training programs in Plastic Surgery; by ACAPS, which coordinates the training activities; and by ABPS, which sets educational requirements and certifies the graduates of those programs. We provide an overview of plastic surgery training in the United States and Europe, highlighting how education is vastly different between the United States and Europe, and how, even within Europe, training programs remain heterogeneous.

**Materials and Methods**

We describe in detail the execution plan, the efforts and ultimately the challenges that we encountered during the process of starting the residency program. We aim of being of assistance to anybody that entertains the same educational desire, focusing on the difficulties of organizing the training in aesthetic surgery as a core element of a plastic surgery residency program.

**Results**

Having the advantage of being a small new program with a small number of residents, we were

able to quickly evaluate our aesthetic exposure, to implement changes rapidly and ultimately review the results. We focus mainly on determining the modalities and extent of resident exposure and confidence in performing cosmetic procedures.

### **Conclusions**

Through some changes in resident run cosmetic clinics, virtual simulation exposure, simulation labs and cadaveric labs we were able to improve the resident perception of their ability across aesthetic procedures. We do understand though that challenges in aesthetic education still exist and we focus on new ideas and methodologies to further enhance the training in aesthetic surgery.

Presentation Preference

Oral presentation



Abstract nr.

64

**The future of customized surgery? 3D-printed, patient-specific interventions for outer ear management—a systematic review**

Author

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Other Reconstructive Surgery

Topic

Keywords

**Introduction**

3D-printing is an evolving technology with promising applications for patient-specific surgery. Nonetheless, knowledge on the clinical utility of 3D-printing in plastic surgical management of the outer ear is scattered. Understanding these new treatment methods is essential for clinical implementation, which may benefit patient outcomes. This systematic review aims to explore applications of 3D-printed patient-specific interventions for management of the outer ear, including state of the evidence, strengths, limitations, and future possibilities.

**Materials and Methods**

In accordance with the PRISMA guidelines, eligible studies were identified from four databases (Pubmed, EMBASE, the Cochrane Library, and Web of Science); data on manufacturing and interventions were extracted independently by two reviewers. We assessed study quality using Joanna Briggs Institute's critical appraisal tools.

**Results**

Screening yielded 590 studies; 46 were eligible and included for analysis. 3D-printed interventions were used as guides, templates, implants, and devices. Positive sentiments on the 3D-printed

interventions were generally reported: increased surgical precision and confidence, faster manufacturing and operation time, and reduced costs and complication rates. Nevertheless, study quality was low as most studies did not use relevant objective outcomes, compare new interventions with conventional treatment, or adequately describe manufacturing.

## **Conclusions**

Multiple clinical interventions using patient-specific 3D-printing for outer ear management are considered promising. However, it remains unclear whether these interventions improve patient outcomes due to lacking comparison with conventional methods and low levels of evidence. Additionally, the reproducibility of the 3D-printed interventions—a key value propositions of 3D-printing—is compromised by insufficient reporting. Future research should feature objective, comparative outcomes evaluated in large-scale studies.

Presentation Preference

Oral presentation



Abstract nr.

89

**Closure of complex enterocutaneous fistulas with a pedicled or free muscle flap using a parachute technique**

Author

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Topic

Other Reconstructive Surgery

Keywords

**Introduction**

Treatment of enterocutaneous fistulas (ECF) remains one of the most challenging problems in surgery. Fistula repair often requires a major laparotomy, resection of the fistula-bearing intestinal segment, restoration of gastrointestinal continuity and re-establishment of abdominal wall. This procedure is associated with a significant risk for complications, high recurrence and mortality rates. Many patients are not suitable for this type of surgery due to comorbidity, hostile abdomen or coexisting large abdominal wall defect. We describe the parachute design as a new method for closure of an ECF.

**Materials and Methods**

A retrospective study was performed of patients with recalcitrant ECF operated with the parachute technique from 2004 to 2020. All patients were either operated with a pedicled rectus abdominis (RA) or a free latissimus dorsi (LD) muscle flap. The flap was sutured into the fistula opening using a parachute technique and covered with a skin graft. A negative pressure device was used temporarily to immobilize the flap to the abdominal wall. No bowel resection was required.

**Results**

We operated on 11 patients with ECF using the parachute design technique. All patients were unsuitable candidates for standard fistula surgery due to a high risk for complications. Eight of them were operated with a pedicled RA flap. Three patients were operated with free LD flap of which one with a combined free LD and serratus anterior muscle flap.

Surgery was successful in 9 out of 11 patients. Two patients required a re-operation for leakage and was then successful. Surgery failed in two patients with the RA flap due to insufficient distal bowel passage.

**Conclusions**

Parachute design with a pedicled RA is a promising technique for ECF repair, where a standard fistula closure is contraindicated or has failed. Free LD flap is a good alternative when pedicled RA flap is not available.

This extraperitoneal method provides tension-free closure of the fistula without compromising the intestinal lumen.

Presentation Preference

Oral presentation



Abstract nr. 104  
**Aquacel Foam dressings on skin graft donor sites**

Author Nurse Doherty, Nanna, Department for Plastik Surgery and Burn treatment (Rigshospitalte), København K, Denmark (Presenting Author)  
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Topic Other Reconstructive Surgery

Keywords

### **Introduction**

Within plastic surgery and burns treatment, around 200 skin graft operation are performed a year. A skin graft operation leaves a donor site (DS) that can be associated with pain, exudation and infections. The expected healing time of a DS is approximately 14 days. The objective of this study were to determine whether the use of Aquacel Foam (AF) could reduce DS related discomforts.

### **Materials and Methods**

AF is a sterile dressing that absorbs wound fluid and creates a soft gel, maintaining a moist wound environment. The design of the dressing locks in exudate and reduces risk of maceration. Finally, it helps minimize pain while in situ and during dressing changes. Over 4 months, 6 patients were included in the study. To explore the benefits of AF, a quantitative questionnaire was used, that included both patient and nurse experiences with AF. In cooperation with the patient, the nurse filled out the questionnaire after removing the dressing.

### **Results**

Based on the results of the questionnaire we can conclude

After 14 days the percentage healing of DS was 83%. In 1 case the healing was only 20%. In the other 5 cases the healing was between 90-100%.

The patients found the treatment with AF was pleasant

1 patient had to get their dressing changed because of the amount of exudate

With 5 of the included patients it was necessary to strengthen the dressing to make sure it stayed intact for the 14 days

### **Conclusions**

With 5 patients having a healing between of 90-100%, it determines that the use of AF on DS can be effective in terms of DS healing. The patient experience with AF was pleasant. This could be

related to the absorbent design of the AF dressing and the minimal dressing changes. Fewer dressing changes is thought to reduce the risk of infections and protects the new epithelial layer from being damaged.

The study also shows, that there can be some difficulties associated with AF, because of the need of strengthening the dressing on 5 out of 6 patients. This require an attentive care when using AF on DS.

Presentation Preference

Poster presentation



Abstract nr. 105  
**The Central Angiosome Vertical Abdominoplasty - CAVA**

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Topic Other Reconstructive Surgery

Keywords

### **Introduction**

Abdominoplasty tops the list of body contouring procedures following massive weight loss (MWL). Little focus has been given to the morphological changes of normal anatomy that occurs due to the excess weight and subsequent weight loss or the consequent pathology that we aim to repair. Obesity causes compensatory changes and damage to the underlying connective tissue and perforating vessels of the expanding abdomen. The resulting topographical changes may vary from tissue tear and dystrophy to compensatory hypertrophy. This presentation aims to demonstrate the theory and practice of a true vertical resection of a central abdominal pathology inspired by the morphological changes of the abdomen caused by obesity and weight loss and redefine the surgical approach to abdominal contouring after MWL.

### **Materials and Methods**

We present the anatomical rationale for a novel approach for abdominoplasty. Selected representative cases from a pool of several hundred cases are visualized to illustrate the CAVA concept, reconstructive surgery based on the anatomical and topographic changes which occur during massive weight gain and subsequent weight loss.

### **Results**

The surgical procedure is illustrated in detail showing the central angiosome and its perforators. The dissection, deconstruction/reconstruction and removal of excess central abdominal tissue are shown step by step to emphasize the importance of angiosome-based surgery for MWL.

### **Conclusions**

The Central Angiosome Vertical Abdominoplasty addresses the anatomical and topographical changes, which occurs following obesity and subsequent massive weight loss. The technique emphasizes central/periumbilical abdominal tissue resection in a broad vertically oriented elliptical shape, entailing the supply area of the central angiosome and combines this with lesser horizontal excisions caudally and cranially, as needed.

Presentation Preference

Oral presentation



Abstract nr. 129  
**Clinical Application of Thermal Imaging Camera in Perforator Flaps**

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Topic Other Reconstructive Surgery

Keywords

### **Introduction**

Perforator flaps are commonly used in the reconstruction of soft tissue defects. Accurate detection of the vascular anatomy is a vital factor in correct surgical planning and ensuring a successful outcome. We present our experience using Flir One thermal imaging device (Flir Systems, Inc.) in the identification of perforator vessels in pedicled flap reconstruction.

### **Materials and Methods**

Flir One is a thermal imaging camera, compatible with smartphones. We used this device to pre-operatively detect the location of perforators, which were subsequently easily retrieved and mapped by Doppler ultrasound. The types of flaps performed ranged from partial latissimus dorsi flaps to gluteal flaps, in the reconstruction of pilonidal cyst defects. Post-surgery, the device assisted in assessing vascular flap perfusion.

### **Results**

Our series illustrates that the thermography device can be applied as a reliable tool in accurately determining blood perfusion prior to, and following, pedicled perforator flap surgery, in adjunction to Doppler ultrasound. All flaps survived completely or near-completely. There were no complications associated with the technique.

### **Conclusions**

Flir One thermal imaging has been shown to have a high sensitivity and specificity in detecting perforators. It is non-invasive, inexpensive, timesaving and simple to apply, as displayed in our study. We hope to implement the technique in the pre-operative planning as well as monitoring of free flaps, as an alternative to existing monitoring methods such as microdialysis.

Presentation Preference

Poster presentation

# Other



2022  
**SCAPLAS Congress**  
Scandinavian Association of Plastic Surgeons



Abstract nr.

9

**THE PREVALENCE AND CONSEQUENCES OF ABDOMINAL RECTUS MUSCLE DIASTASIS AMONG FINNISH WOMEN -AN EPIDEMIOLOGICAL COHORT STUDY**

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Topic

Other

Keywords

**Introduction**

Post pregnancy abdominal rectus diastasis (ARD) has raised attention in the field of surgery in recent years, but there is no consensus about when to consider surgery. Our aim was to find out what is the normal inter-rectus distance in fertile aged, female population in Finland and to examine whether there is a linea alba width that would predispose to diastasis related problems after pregnancy.

**Materials and Methods**

For this prospective cohort study, women participating early pregnancy ultrasound in Helsinki University Hospital Department of Obstetrics and Gynecology during 1.1.2018-8.3.2019, were recruited. The width of linea alba was measured by ultrasound during the early pregnancy ultrasound. Symptoms were measured by questionnaire including Health-Related Quality of Life (RAND-36) and Oswestry Disability Index for back symptoms and disability.

**Results**

Linea alba width was measured in total of 933 women. The average inter-rectus distance (IRD) among nulliparous women was  $1,81 \pm 0,72$  cm. After one previous pregnancy the average linea alba width was  $2,36 \text{ cm} \pm 0,83$  cm and after more pregnancies  $2,55 \pm 1,09$  cm. There was a positive correlation between previous pregnancies and the increased linea alba width ( $p=0,00004$ ). We did not perceive any threshold value of linea alba width that would predispose to back pain or movement control problems in this cohort, in which severe diastasis (over 5cm) was rare.

**Conclusions**

Mean inter-rectus distance in parous population exceeds stated normative values, that is under 2,0 cm. Moderate ARD (3,0-5,0cm) alone does not seem to explain low back pain or functional

disability in population level. Severe post-pregnancy diastasis (over 5,0 cm) is rare.

Presentation Preference

Poster presentation



Abstract nr.

13

**Risk Factors Associated with the Development of Postoperative Pressure Ulcers in Adult Surgical Patients: A Systematic Review and Meta-Analysis**

Author

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Topic

Other

Keywords

**Introduction**

This study originated from the awareness of a lack of systematic approach to prevention and assessment of pressure ulcers in surgical patients in our practice.

Patients undergoing surgery in general anesthesia are at increased risk of developing pressure ulcers, as they are unable to change positions. Pressure ulcers attributable to surgical procedures are therefore not uncommon and a threat to patient safety. Patient related intrinsic and extrinsic factors as well as factors in the perioperative environment are also suspected to increase patient's risk of developing perioperative pressure ulcers.

In order to prevent surgical related pressure ulcers, it is important to identify these risk factors. Published literature summarizing on the subject has not yet been identified.

This study aim to summarize the current published data on perioperative risk factors associated with developing pressure ulcers in adult patients undergoing surgery under general anesthesia.

**Materials and Methods**

Several databases were searched. Studies reporting on risk factors associated with the development of surgery related pressure ulcers in adult patients undergoing surgery under general anesthesia were included. Data were extracted from all articles and meta-analysis was performed when three or more studies reported on a specific variable.

**Results**

The analyses identified five factors statistical significant associated with the development of pressure ulcers. These were; cardiovascular disease; respiratory disease; diabetes mellitus; longer duration of surgery and low hemoglobin. Factors not found to be associated were; low s-albumin; use of vasopressors during surgery; use of corticosteroids and older age.

**Conclusions**

We recommend that cardiovascular disease, respiratory disease, diabetes mellitus, hemoglobin and duration of surgery should be taken into consideration when trying to prevent pressure ulcers

in surgical patients and that extra caution should be taken in relation to positioning these patients.

Presentation Preference

Oral presentation



Abstract nr.

19

**Autologous Fat Grafting as Treatment of Postherpetic Neuralgia - A Double-Blinded Randomized Clinical Trial.**

Author

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Topic

Other

Keywords

**Introduction**

Postherpetic neuralgia (PHN) is a common chronic pain syndrome occurring after a herpes zoster (HZ) outbreak, also known as shingles. Treatment is complex, and no effective treatment exists today. Autologous fat grafting (AFG) has previously shown promise in treating PHN, but no randomised controlled trial has been performed.

This RCT aimed to investigate the effect of autologous fat grafting on postherpetic neuralgia compared to a sham treatment.

**Materials and Methods**

We included forty-six participants suffering from PHN in our double-blinded, two-armed RCT. Participants were randomly assigned either the intervention group or control group. All participants had liposuction performed under general anaesthesia. The intervention group received AFG to the area of pain, and the control group received a sham treatment of saline injection. The primary outcomes were the average and maximum degree of pain measured on an 11-point numerical rating scale (NRS). Secondary outcomes were quality and degree of neuropathic pain (NPSI) and Quality of Life (SF-36).

**Results**

Forty-two participants completed follow-up. In the maximal degree of pain, we observed a reduction of  $-1.1(0.6)$  and  $-1.0(0.5)$   $\Delta$  mean(SE) on the NRS in the intervention and control groups, respectively. In the average degree of pain, the reduction was  $-1.2(0.5)$  and  $-1.3(0.4)$  in the intervention and control groups. We observed stationary or minor improvements in neuropathic

pain, with similar changes in both groups. We observed small reductions in QoL in all parameters and both groups. The exceptions were pain and social functioning, where the control group reported minor improvements. For all the measured outcomes, the differences between the groups were not statistically significant.

### **Conclusions**

We did not find autologous fat grafting superior to a placebo when treating postherpetic neuralgia of the skin. Based on our results, we cannot recommend the routine use of this method to treat these pains.

Presentation Preference

Oral presentation



Abstract nr.

21

**Treatment of pretibial injuries generates a high cost burden in healthcare**

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Topic

Other

Keywords

**Introduction**

Pretibial lacerations (PL) and pretibial hematomas (PH) are common traumas among the morbid and elderly population. Their financial costs have not been assessed previously. Diagnosis Related Groups (DRG) is the most frequently used system in healthcare for classifying and defining hospital costs. Our study focused on evaluating pretibial injury-inflicted costs in a Finnish central hospital during 2015-2019 via the NordDRG product system.

**Materials and Methods**

60 PH patients and 109 PL patients NordDRG product invoices during their treatment periods were analyzed. The NordDRG products were recorded from linkage to patients ICD-10 diagnoses of pretibial injuries and dates of each treatment contact needed from the time of injury to the time of healing.

Costs were calculated directly from the obtained invoice data and classified into four categories: emergency room care, inpatient care, operative treatment, and outpatient care costs. Additional costs from primary healthcare (PHC) were obtained for 29 pretibial laceration patients.

**Results**

With PH:s the mean cost per patient was 3243 € (range 132 € - 20 078 €). 32 patients (53.3%) generated expenses of 1030 € or more (mean 6019.75 €, range 1030 € - 20 078 €) per patient. Operative care was the most expensive item, comprising 45.6% (88 693 €) of total costs.

With PL:s the mean cost per patient was 1861.6 € (range 132 € - 22 580.7 €). 37 patients (33.9%) generated expenses of 1010 € or more (mean 4960.7 €, range 1011.2 € – 22 580.7 €) per patient. The highest costs were generated by operative care and repeat ER visits, accounting for 34.6% (70 170 €) and 29.4% (59 759 €) of total costs, respectively. Costs from PHC were small,

accounting for only 5.2%, even though PHC generated the largest number of invoices (N=143 62.4%).

### **Conclusions**

Pretibial injuries generate high costs in secondary healthcare through multiple contacts with healthcare, including repeat ER-visits, demanding wound care, surgeries and hospitalization.

Presentation Preference

Oral presentation



Abstract nr.

59

**No Clinical Efficacy of Adipose-Derived Regenerative Cells and Lipotransfer in Breast Cancer-Related Lymphedema: A double-blinded placebo-controlled phase-II trial**

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Other

Topic

Keywords

**Introduction**

The prognosis for patients with breast cancer-related lymphedema (BCRL) is poor. Current treatments are palliative, and there is a paucity of curative treatments. Preclinical and open-labeled studies have shown a promising effect of adipose-derived regenerative cells (ADRCs) for improving BCRL. However, high-level clinical evidence on the safety, efficacy, and efficiency of cell-based therapies in alleviating BCRL are lacking.

**Materials and Methods**

Patients with no-option, persistent disabling unilateral BCRL refractory to conservative treatments were included in this randomized, double-blinded placebo-controlled trial. Patients were randomly

assigned in a 1:1 ratio to receive either ADRCs and lipotransfer or placebo to the axilla. Patients were followed every three months up to one year after treatment. The primary outcome was a change in BCRL volume. Secondary outcomes included differences in the quality of life, compression therapy use, cellulitis, lymphangiography stage, bioimpedance, and safety.

## **Results**

Eighty patients were included, of which 39 were allocated to ADRCs and lipotransfer and 41 to placebo treatment. Baseline characteristics were similar in both groups. No significant change in BCRL volume was observed in either group. Interestingly, comparable improvements in quality of life scores and cessation of compression therapy were noted for both groups. There was no significant change in cellulitis, lymphangiography, or bioimpedance outcomes in either group.

## **Conclusions**

This trial showed no clinical benefit of ADRCs and lipotransfer for patients with BCRL. The non-confirmative results of this trial suggest that ADRC treatment and lipotransfer should not be recommended for alleviating BCRL at this time. These landmark results emphasize the importance of controlled trials for evaluating the clinical efficacy of BCRL and cell treatments.

Presentation Preference

Oral presentation



Abstract nr.

83

**Publication rate of abstracts presented at the yearly congress for Norwegian surgeons**

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Topic

Other

Keywords

**Introduction**

Høstmøtet is a yearly conference in Norway where surgeons from different specialties, and from different institutions, gather to share scientific findings through oral presentations collected as abstracts. Conferences like these are common and an easy way to share information with colleagues across institutions. Even though this sort of dissemination is important, the gold standard of scientific dissemination is still a publication in a peer-reviewed journal. This ensures the quality of the research through the peer-review process. Not all abstracts presented in such conferences end up as publications in peer-reviewed journals. Hence it is important to study the rate presentation to publication of abstracts for determining the scientific quality of the conference.

**Materials and Methods**

The search was conducted in “PubMed” and in “GoogleScholar” based on the abstracts from Høstmøtet. All abstracts presented in the period 2003-2019 in plastic surgery were searched for. The first search consisted only of the authors involved in each abstract. The second search was based on the first and/or last author of the abstract including some keywords from the abstract itself. If the paper found matched the abstract’s aim and/or conclusion, in addition to at least one author from the abstract was present in the published paper, this was considered as a published abstract.

**Results**

Of the 478 abstracts that were presented between 2003-2019, 108 research topics were found as published abstracts. This is a publication rate of 22.6% (as of January 2020). Average time period from presentation to publication was 24 months. A published paper was found to be cited 19 times on average.

**Conclusions**

Compared to other similar papers this publication rate was low. Of the remaining 77.4% of abstracts that have not been published some might still be in the peer review process. Therefore,

the publication rate found in this study might be an underestimation of the true publication rate of the plastic surgery Høstmøte.

Presentation Preference

Oral presentation



Abstract nr.

88

**Improvement project about split-thickness skin graft on the shin (focused review of clinical practice of split-thickness skin grafting at ward for plastic surgery at Herlev hospital).**

Author

Nurse Spangenberg, Karen Sofie, Herlev Hospital, Vanløse, Denmark (Presenting Author)

Topic

Other

Keywords

### **Introduction**

Since 2018 a nurse led multi-disciplinary team have worked on an improvement project about skin grafting. An audit of 25 randomly selected patient cases of skin grafting showed a postoperative infection rate of 33%. The analyzed data showed that particularly patients with split-thickness skin grafts on lower legs had an increased complication rate. The continued objective of data collection was to focus on split-thickness skin grafts on the shin and improvement of skin graft survival by reducing the rate of complications and heightening the standard of care including patient information and clinical postoperative care.

### **Materials and Methods**

We have repeated the audit with additional data points for better follow-up of the clinical practice and the parameters that contribute to poor outcomes of split-thickness skin grafts.

### **Results**

New efforts have been implemented but the latest follow-up data are delayed due to the covid-19 pandemic

### **Conclusions**

The collection of data and focus on the clinical practice have made us aware that our treatment was not optimal and stringent. New efforts have been implemented but the latest follow-up data are delayed due to the covid-19 pandemic. We wish to present our findings thus far and discuss the improvement efforts and gained experiences.

Presentation Preference

Oral presentation



Abstract nr.

92

**The National Surgical Treatment of Lipedema Study in Norway  
A presentation of an ongoing national study.**

Author

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Topic

Other

Keywords

**Introduction**

Well-designed randomized controlled studies on lipedema are lacking. The Ministry of Health and Care Services in Norway has found the scientific documentation for the effects of liposuction to be insufficient and has recommended that surgical treatment of lipedema should be evaluated through a 5-year clinical trial. Lipedema is a chronic condition with a symmetrical accumulation of painful fatty tissue primarily affecting the limbs, sparing hands, feet and trunk. The subcutaneous fatty tissue is disproportionately voluminous. The condition affects almost exclusively women. Although there has been an increased awareness of lipedema in recent years, it is often misdiagnosed and women suffering from lipedema report low quality of life and high severity of depressive symptoms. Various medical societies and working groups have developed guidelines for treatment of lipedema. All advocate conservative treatment with compression therapy, weight management, physical activity, psychological support; and in some cases surgical treatment such as bariatric surgery and liposuction.

**Materials and Methods**

All patients (220) receive conservative treatment for 6 months, followed by early or late surgery. Patients are followed-up 3 years after surgery to evaluate long-term effects.

**Results**

The primary objective of the study is to assess the effect of liposuction on lipedema pain (Visual Analog Scale (VAS)).

Secondary objectives are to assess the effect of liposuction on quality of life and everyday activities (RAND-36).

Tertiary objectives are to assess the effect of two different conservative treatments strategies on pain and everyday activities (RAND-36), possible adverse effects of liposuction and further assess whether having undergone liposuction reduces the need for conservative treatment.

## **Conclusions**

A national multi-center study with homogenous treatment protocols can provide globally sought insight on lipedema and the effect of its treatment regimes. The findings will be important to adjust future treatment strategies.

Presentation Preference

Oral presentation



Abstract nr.

94

**Perforator mapping of the abdominal wall with Dynamic Infrared Thermography (DIRT) as a diagnostic tool for anterior cutaneous nerve entrapment syndrome (ACNES)**

Author

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Topic

Other

Keywords

**Introduction**

Perforator mapping for DIEP breast reconstruction with dynamic infrared thermography (DIRT) has become a popular imaging modality. Anterior cutaneous nerve entrapment syndrome (ACNES) is a chronic pain condition of the abdominal wall. It is thought to be caused by entrapment of a cutaneous nerve at the exit point through the anterior rectus abdominis muscle fascia. Diagnosis is purely based on clinical examination and patient history. There are no imaging modalities that support the diagnosis of ACNES. Anatomical studies have shown that a perforator complex consists of an artery, comitant vein(s) and sensory nerve. The aim of this study was to see if the hotspot created by the perforator on DIRT coincides with the point of maximal pain (PMP) marked on the skin.

**Materials and Methods**

The study included 17 patients with a clinical diagnosis of ACNES. All patients had a single PMP which was marked on the abdominal skin and photographed. Following a mild cold challenge rewarming of the abdominal skin was registered with an IR camera. Color Doppler ultrasound (CDU) was performed at the PMP to map the perforator complex.

**Results**

The location of PMP was in all patients associated with the location of a hotspot on DIRT. CDU showed that this hotspot was produced by a perforator transporting blood to the skin. The location of PMP could easily be related to the exit point of the perforator complex through the anterior

rectus abdominis muscle fascia

### **Conclusions**

Perforator mapping with Dynamic infrared thermography (DIRT) is a promising and easy to perform non-invasive, non-contact imaging modality that can support the diagnosis of anterior cutaneous nerve entrapment syndrome (ACNES).

Presentation Preference

Oral presentation



Abstract nr.

96

**Publication rate of abstracts presented at the yearly congress for Norwegian surgeons**

Author

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Topic

Other

Keywords

**Introduction**

Høstmøtet is a yearly conference in Norway where surgeons from different specialties, and from different institutions, gather to share scientific findings through oral presentations collected as abstracts. Conferences like these are common and an easy way to share information with colleagues across institutions. Even though this sort of dissemination is important, the gold standard of scientific dissemination is still a publication in a peer-reviewed journal. This ensures the quality of the research through the peer-review process. Not all abstracts presented in such conferences end up as publications in peer-reviewed journals. Hence it is important to study the rate presentation to publication of abstracts for determining the scientific quality of the conference.

**Materials and Methods**

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**Conclusions**

Compared to other similar papers this publication rate was low. Of the remaining 77.4% of abstracts that have not been published some might still be in the peer review process. Therefore, the publication rate found in this study might be an underestimation of the true publication rate of

the plastic surgery Høstmøtet.

Presentation Preference

Oral presentation



Abstract nr. 113  
**Capacity building in plastic surgery in Ethiopia - a 20 years experience.**

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Topic Other  
Keywords

### **Introduction**

Ethiopia has a population of 110 million. Up to year 2000 plastic surgery services were limited to short term missions with no or little capacity building.

### **Materials and Methods**

During the 5 year period of 2000 to 2005 two NORAD / MFA supported capacity building projects in plastic surgery (Burn and Cleft Lip and Palate) were implemented in 2 hospitals in Addis Ababa in a joint venture program between Haukeland University Hospital, Bergen, Norway and Addis Ababa University, Ethiopia. The established programs gradually merged and expanded to become a foundation for the first department of plastic reconstructive surgery in Ethiopia.

The main emphasis and inputs in the projects were expatriate consultants, investments in infrastructure, implementation of safe anesthesia methods and an accredited training program for future ethiopian plastic surgeons.

### **Results**

As of 2022 a number of 42 ethiopians have graduated as plastic surgeons. The majority have been retained in Ethiopia, mainly in the capital. 2 consultants have so far moved out of Addis Ababa to practice in rural southern Ethiopia in order to provide plastic surgical services to a population of 3-5 million. The plastic surgical challenges are huge in a this new set up. 2 norwegian private foundations ( Childrens Burn and Wound Care Foundation and Facing a Child ) founded by the former expatriate Burn- and CLP-project leaders respectively, have tried to support and further develop the clinical activities in Ethiopia by infrastructural investments, supplies of equipment and consumables and further capacity building.

### **Conclusions**

The need for reconstructive plastic surgery in Ethiopia is indefinite and now further enhanced by the civil war. A long term commitment in health programs in developing countries is mandatory in

order to achieve sustainability and expansion of services. Institutional relationships are of utmost importance and represents a diamond for mutual learning and clinical research activities. The presentation highlights these aspects.

Presentation Preference

Oral presentation



Abstract nr.

126

**Ten years of topical tranexamic acid to reduce bleeding in soft tissue surgery – the gospel according to Trondheim.**

Author

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Topic

Other

Keywords

### **Introduction**

Ten years ago, the plastic surgeons at St Olav´s University Hospital in Trondheim started moistening the wound surface with 25 mg/ml tranexamic acid to reduce bleeding. The intervention was based on publications from orthopedic and cardiac surgery. The procedure has gained popularity within Norway and abroad. We have conducted several studies to assess effectiveness and potential adverse effects and would recommend the intervention as a routine prophylactic procedure in most soft tissue surgery.

### **Materials and Methods**

We sum up both our own studies and a systematic review of the literature regarding effectiveness and potential adverse effects from the use of topical tranexamic acid in soft tissue surgery. We also identify unclarified areas where more research is needed.

### **Results**

Topical use of tranexamic acid onto the wound surface in soft tissue surgery significantly reduces postoperative bleeding. It may also reduce the risk of re-operations due to hematoma. Topical use with 25 mg/ml results in very low systemic concentrations and therefore an assumed negligible risk of systemic adverse effects. Topical use of tranexamic acid is however off-label and physiological interactions are inadequately understood or explored.

### **Conclusions**

Topical use of tranexamic acid to reduce bleeding is a promising low-cost, low-risk prophylactic intervention in soft tissue surgery. Large randomized multi-center studies are needed to further elucidate potential risks and benefits.

Presentation Preference

Oral presentation