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**A Prospective Randomized Trial to Assess Perfusion and Patient Satisfaction in Nipple-Areola Skin Sparing Mastectomy with Immediate Reconstruction**

**Elizabeth B. Odom, MD; Simone W. Kantola, MD; Grace Um, MD; Amy E. Cyr, MD; Julie A. Margeenthaler, MD; Marissa M. Tenenbaum, MD; Terence M. Myckatyn, MD**

**BACKGROUND:** Nipple-areola and skin sparing mastectomy (NASSM) is an accepted and sought after option for eligible patients, and the rate of women undergoing this operation continues to climb. The main advantage of the procedure is the ability to utilize existing skin envelope and NAC for improved shape, fewer operations, and less psychological impact on patients. There are many possible incisions, each providing its own advantage from an oncologic or reconstructive perspective. Studies suggest that perfusion is received primarily from superior, medial, and lateral contributions. Therefore the lateral radial (LR) incision may lead to improved perfusion, however the mastectomy is more difficult via an inframammary (IMF) incision and this could lead to a higher complication rate. We aim to assess perfusion to nipple-areola complex in these two incision patterns and determine the impact of the incision type on overall outcomes, complications, and patient satisfaction.

**METHODS:** Patients with age >18 with BMI 18–35, with estimated breast size 100-800g were included in this prospective study. Patients were randomized to receive either an IMF or LR incision unless one was given a strong preference by patient or surgeon. A BreastQ survey was administered preoperatively, and three-dimensional images of both breasts were captured. Mastectomies were performed by experienced breast surgical oncologists. Laser angiography (SPY system, Lifecell) was performed at 3 distinct time points: pre-operatively, post-NASSM, and post-reconstruction. Blood pressure was monitored closely throughout the operation. Patients were followed for at least 3 months after their permanent implant placement for complications. Three months post-operatively, the BreastQ survey was again administered and three-dimensional images were captured to measure aesthetic landmarks. Two-tailed Mann-Whitney U and Chi-squared tests were used to compare group medians and proportions with P<0.05 indicating significance.

**RESULTS:** Fifty-five received an IMF incision, and twenty-four a LR incision. There was no difference in demographics, comorbidities, specimen weight, initial implant volume, or intraoperative blood pressure between groups. Similarly, there was no difference in distribution of breast perfusion pattern. The LR group did have a longer operative time (155 min vs 177 min, p=0.02). The decrease in perfusion to the whole breast did not differ between groups at each surgical stage. Patients with an IMF incision had significantly lower remaining perfusion to the inferior (21.94% vs 36.89%, p=0.001) and lateral portions of the flap (23.08% vs 40.70%, p=0.003) after reconstruction. Perfusion to the nipple was not significantly different (29.87% vs 40.03%, p=0.15) when adjusting for covariates. Rates of complications, including necrosis, infection, implant exposure or malposition, and explant did not differ between incision types. There was no difference in patient satisfaction based on BreastQ scores between incision types. Finally, there was no significant difference in mammographic measurements on three-dimensional imagining between groups.

**CONCLUSIONS:** There is a significant decrease in blood flow to the inferior and lateral portions of the skin envelope using the IMF incision when compared to the LR incision, possibly due to differences in retraction and difficulty in technique. Despite this, there is no difference in complications, outcomes, or patient satisfaction with their surgical reconstruction over a 3 month period.

**Intraoperative Comparison of Round vs. Anatomical Implants in Primary Breast Augmentation**

**David A. Hidalgo, MD; Andrew L. Weinstein, MD**

**INTRODUCTION:** The aesthetic superiority of anatomical implants has not yet been proven by objective study. This Level I randomized control trial tested whether plastic surgeons and lay individuals could perceive an aesthetic difference between anatomical and round implants placed in the same patient.
**MATERIALS AND METHODS:** Seventy-five patients undergoing breast augmentation had a round implant of placed in one breast and either an anatomical silicone sizer or actual implant of similar volume temporarily placed in the other. There were twenty-five cases each representing Allergan, Mentor, and Sientra. Standardized multiple view photographs were then taken with the patient sitting completely upright. The anatomical device was then replaced by a second round implant to complete the procedure. An online survey instrument was designed for evaluation of all 75 patients by 10 plastic surgeons and 10 lay reviewers. All reviewers were asked ‘which breast was more aesthetically pleasing’ and ‘by how much’ on 5-point Likert scale. Plastic surgeon reviewers were also queried on which implant style they thought was placed on the side judged better and what breast characteristics were responsible for perceived aesthetic superiority.

**RESULTS:** No observable difference in breast aesthetics between anatomical and round implants was reported in 36.4% of cases. In the remaining 63.6% of cases where a difference was perceived neither reviewer group preferred the anatomical side significantly more often than the round side. Aesthetic preferences did not correlate with manufacturer. Plastic surgeons reported not knowing which implant shape was producing the aesthetic superiority they perceived in 35.0% of cases. In the remaining cases where they believed they knew the implant type, they were able to identify it correctly in only 26.5%. Regarding breast characteristics accounting for perceived aesthetic superiority there was no statistically significant difference between the two implant types.

**CONCLUSIONS:** This Level I study shows no aesthetic superiority of anatomical over round implants. Given disadvantages including greater firmness, malrotation potential, possible higher risk for late seroma and ALCL due to surface texturization, limited incision options, and greater cost, a lack of proven aesthetic superiority argues against the continued routine use of anatomical implants in breast augmentation.

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**Ben Ardehali MSc, FRCS(Plast); Francesca Fiorentino, PhD**

**INTRODUCTION:** Seroma formation is the most common complication in abdominoplasty procedure. The frequency of the postoperative seroma ranges from 1 to 57% with an accepted rate of over 10%. Mechanisms that are hypothesised to cause seroma formation include: disruption of vascular and lymphatic channels, shearing forces between the fascia and abdominal flap, dead space formation and release of inflammatory mediators.

The objective of this review was to assess the effect of three different abdominoplasty techniques, namely progressive tension sutures, application of glue and elevation of flap in a superficial Scarpa’s plane, on the outcome of seroma formation in abdominoplasty.

**METHODS:** The following electronic databases were searched between 1962 and January 21st 2015: Cochrane Library, MEDLINE (via Ovid), EMBASE (via Ovid), World Health Organization (WHO) International Clinical Trials Registry Platform, with no language restriction. Studies were included according to pre-specified inclusion and exclusion criteria. Data for the outcome of interest were extracted. Treatment effect was investigated with Review Manager software tool.

**RESULTS:** Out of 121 citations 15 studies fulfilled the inclusion / exclusion criteria for the final analysis involving 1824 patients. Four randomised controlled trials (RCTs) and eleven non-randomised studies (NRS) were identified with five studies for each group. The risk of bias across the study designs was high mainly due to the non-randomised nature of the majority of the studies. The patients in the quilting group and those undergoing superficial fascia (Scarpa’s group) abdominoplasty have a reduced incidence of seroma formation compared to patients undergoing standard abdominoplasty. Patients in the glue group do not appear to have significant change in seroma outcome compared to the control arm.

**CONCLUSION:** The data suggests that quilting and raising the flap in a more superficial plane (Scarpa’s fascia) reduces the incidence of seroma but using fibrin glue has no impact on the occurrence of seroma.

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**COSMETIC SESSION 3**

**The Effect of Technical Options on the Outcome of Seroma Formation in Abdominoplasty: A Systematic Review**