

full-thickness skin loss involving the entirety of the NAC. The Youden method was used for predicting optimal cut off. A $p < 0.05$ was considered statistically significant.

RESULTS: A total of 184 patients (292 breasts) were included, with an average follow up time of 27 months. Women were on average 53 years old, non-smoker (99%), non-diabetic (91%), and had a body mass index (BMI) of 28 kg/m². All reconstructions were performed immediately after prophylactic mastectomies in 33% and therapeutic mastectomies in 67% of cases. The majority of mastectomies were skin sparing (61%), followed by nipple sparing (24%), simple (12%) and other (3%). Seventy-one (24%) breasts were radiated (77% adjuvant, 20% prior radiation, 3% both), and 89 (48%) patients received chemotherapy (19% adjuvant, 4% neoadjuvant, 1% both). Median mastectomy weight was 551 grams, average intraoperative TE fill was 194 ± 163 cc, and average final TE fill was 416 ± 159 cc.

Partial NAC necrosis occurred in 8 (3%) breasts and there were zero instances of complete NAC necrosis. Partial NAC necrosis was associated with lower BMI (21 vs. 28 kg/m², $p < 0.001$) and lower mastectomy weight (360 g vs. 675 g, $p = 0.04$). Although partial NAC necrosis was not related to intraoperative TE fill, it was associated with less deadspace in the breast pocket (0.68 TEF/MW vs. 0.38 TEF/MW, $p = 0.04$). Optimal intraoperative TE fill to mastectomy weight ratio for avoiding partial NAC necrosis was 0.31. In multivariable models controlling for age, BMI, mastectomy weight, radiation, and soft tissue support, partial NAC necrosis was associated with lower BMI. For every 1-point increase in BMI, the odds of partial NAC necrosis decreased by 0.67 (95% CI [0.42-1.0], $p = 0.05$).

CONCLUSIONS: In this study, lower BMI individuals were predisposed to having partial NAC necrosis following prepectoral TE reconstruction. Managing intraoperative TE fill is a difficult clinical challenge as there are competing forces including the dual goals of expediting the expansion process and minimizing deadspace weighed against the deleterious effects of increased tension and pressure and mastectomy flaps. Potential strategies for mitigating the risk of partial NAC necrosis include optimizing the intraoperative TE fill to mastectomy ratio to one-third.

Effect of Pedicle Type on Breast Reduction Aesthetic Outcomes: A Photographic Analysis

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PURPOSE: While many surgeons prefer one pedicle type for breast reductions, there is no evidence for the optimal pedicle type or which is best suited for certain patients. Here, we utilize photographic analysis to examine the impact of pedicle type on aesthetic outcomes after reduction mammoplasty.

METHODS: Preoperative and postoperative photographs (average 4.25 months postoperatively) were taken from 100 randomized patients from 6 surgeons at a single institution. Clinical data was extracted retrospectively from the patient's medical record. 10 non-experts (medical students) rated photographs in a blinded review using the 13-item Validated Breast Aesthetic Scale, which includes ratings regarding breast and nipple areolar complex (NAC) position, shape, and symmetry. Mean scores were calculated and patients were stratified by pedicle type. Univariate analysis was performed.

RESULTS: 60 breast reductions were performed using an inferior pedicle and 40 using a superior or superomedial pedicle. Inferior pedicle patients were more likely to be obese ($p = 0.0222$), have greater ptosis ($p = 0.0014$), poor skin quality ($p = 0.0167$), and a greater volume of tissue resected ($p = 0.0024$). Clinical outcomes were similar across groups. Breast position was rated more favorably in the superior pedicle group ($p = 0.035$). Scar appearance, NAC projection, and NAC shape were rated higher in the inferior pedicle group ($p = 0.0325$, $p = 0.0184$, and $p = 0.0708$, respectively).

CONCLUSION: Pedicle type was not associated with complication rate. Inferior pedicles were used more frequently for more obese patients and larger breast volumes. Superior pedicles were associated with better breast position while inferior pedicles were associated with better NAC position and shape.

Optimizing Breast Reconstruction Outcomes in the Setting of Radiation Therapy: A Retrospective Cohort Study

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BACKGROUND: Breast reconstruction is a vital aspect of breast cancer treatment, providing significant improvements to quality of life for patients who have undergone mastectomy. While postmastectomy radiation therapy (PMRT) also plays a pivotal role in treatment for many patients, its benefits often come at the cost of compromising breast reconstruction outcomes. As such, identifying approaches that optimize reconstructive outcomes is of particular importance in this population.

METHODS: We conducted a retrospective chart review of consecutive patients who underwent postmastectomy breast reconstruction at a single institution. Eligible patients were those who received PMRT, and data collected included patient demographics, comorbidities, operative details, and postoperative complications. The primary outcomes assessed were mastectomy skin flap necrosis (MSFN) and reconstruction failure, defined as the removal of the tissue expander or implant due to any complication. Reconstruction failure specifically due to infection was also collected.

RESULTS: Among the 684 patients initially identified, 156 met the inclusion criteria for the study. Skin-sparing mastectomies were the most common approach used in this cohort (57%), followed by nipple-sparing mastectomies (41%) and skin-reducing mastectomies (2%). The majority of patients underwent prepectoral reconstruction (70%) compared to subpectoral (30%). Mastectomy approach and reconstruction plane were not associated with reconstructive outcomes, whereas comorbidities were significantly associated with complications. Specifically, BMI was associated with an increased incidence of MSFN ($p=0.026$), while diabetes was associated and positively correlated with both MSFN ($p=0.007$, $r=0.260$) and any-cause reconstruction failure ($p=0.043$, $r=0.186$). Smoking was also associated and positively correlated with higher rates of any-cause ($p=0.043$, $r=0.186$) and infection-specific ($p=0.031$, $r=0.219$) reconstruction failure. Furthermore, MSFN was positively correlated with any-cause ($r=0.340$) and infection-specific ($r=0.222$) reconstruction failure.

CONCLUSION: Operative decisions including type of mastectomy and plane of reconstruction did not significantly impact MSFN or reconstruction failure; whereas BMI, diabetes, and smoking were all significantly associated with

complications. Our findings highlight the importance of identifying and addressing modifiable risk factors in the preoperative setting in order to optimize reconstruction outcomes in patients receiving PMRT.

What a “Feeling”: The Role of Breast Sensation on Quality of Life after Mastectomy and Alloplastic or Autologous Reconstruction

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INTRODUCTION: Following mastectomy, patients often experience loss of breast sensation. The return of sensation commonly takes time and depends on a variety of factors, including patient comorbidities, breast size, mastectomy type, and method of reconstruction. Quality of life (QoL) in patients after mastectomy has been well studied and tends to decline in the context of changes to usual appearance, post-operative complications, and the psychologic stressors of undergoing oncologic treatments. However, few studies have examined the relationship between quantitative breast sensation and patient wellbeing after mastectomy and reconstruction. The goal of this study is to measure the impact of breast sensation on QoL in patients who underwent nipple sparing mastectomy with alloplastic or autologous reconstruction.

METHODS: Patients undergoing mastectomy with implant-based or deep inferior epigastric perforator (DIEP) flap reconstruction were identified and prospectively followed at pre- and post-operative timepoints. Neurosensory evaluation was performed in 9 breast regions, utilizing a pressure-specified sensory device to determine 1 point-static cutaneous thresholds (range: 0 – 100 g/mm²). At these same timepoints, the BREAST-Q reconstruction module, an externally validated patient-reported outcome measure, was administered. Patients were stratified by reconstructive method and time from mastectomy. Univariate linear regression models were used to measure the correlations between quantitative average sensory measurements and BREAST-Q physical wellbeing, psychosocial wellbeing, sexual wellbeing, and breast satisfaction scores ($\alpha=0.05$).