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**Surgical Treatment of Breast Asymmetry Improves Quality of Life in Adolescents and Young Women**

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**PURPOSE:** Persistent breast asymmetry beyond skeletal maturity of at least one cup-size difference is associated with psychosocial deficits. This longitudinal cohort study measures the impact of surgical correction of breast asymmetry on adolescent health-related quality of life.

**METHODS:** Validated surveys were administered to skeletally mature females with breast asymmetry undergoing surgical correction and comparably aged female controls: Short-Form 36v2 (SF-36), Rosenberg Self-Esteem Scale (RSES), and Eating-Attitudes Test-26 (EAT-26). Cohorts completed surveys at baseline and postoperatively/follow-up at 6 months, 1 year, 3 years, 5 years, and 7 years.

**RESULTS:** The mean ages of breast subjects (n=42) at surgery and controls (n=103) at baseline were 17.4 and 16.7 years, respectively. All asymmetry forms were included (most frequent size difference was two cups; mean volume difference was 213 mL). At baseline, asymmetry subjects performed significantly worse than controls in the role-emotional SF-36 domain and on the RSES and EAT-26. Postoperatively asymmetry subjects experienced significant improvements in three SF-36 domains (social functioning, role emotional, mental health) and on the EAT-26. These results largely did not vary by age, BMI category, and asymmetry severity. Postoperative asymmetry patients performed equally to controls in all eight SF-36 domains, and on the RSES and EAT-26.

**CONCLUSION:** Surgical correction of asymmetry in adolescents and young women is associated with improved psychosocial wellbeing, unaffected by age, BMI category, or severity. Postoperatively, breast patients performed comparably to unaffected controls. Providers should be aware of the psychosocial improvements surgery can provide adolescents with persistent, distressing asymmetry.

**Breast Reconstruction Effects on Post Mastectomy Pain Syndrome: A Meta-Analysis**

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**PURPOSE:** Post Mastectomy Pain Syndrome (PMPS) is characterized by neuropathic pain from direct nerve injury during oncologic breast surgery that can result in chronic opioid dependence and long term disability. Reports on prevalence vary greatly, but the negative effects of PMPS on Quality of Life (QOL) and Patient reported outcomes (PROs) are well established. To our knowledge, this study represents the first meta-analysis that defines the incidence of PMPS in patients undergoing mastectomy, with and without subsequent breast reconstruction.

**METHODS:** The Cochrane and PubMed databases were queried using specific key terms related to breast surgery and PMPS. A total of 166 citations from 1991 to 2017 were then reviewed to identify 21 unique manuscripts. Inclusion criteria included study size greater than 30, minimum 2-month follow-up after surgery, and explicit documentation of whether patients pursued post-mastectomy reconstruction. Studies which reported only arm or abdominal pain were excluded. Studies which did not distinguish between post-lumpectomy and post-mastectomy pain were excluded. Comprehensive Meta-Analysis Software and Microsoft Excel was used for statistical calculations. An unweighted single-factor ANOVA was performed to evaluate whether undergoing breast reconstruction significantly affects the incidence of PMPS.

**RESULTS:** Sixteen manuscripts described the prevalence of post-mastectomy pain and 10 described the prevalence of post-reconstruction pain (5 had data for both). Of the 21 included studies, 16 were retrospective cohort/ cross-sectional studies and 5 were prospective studies. Study
population size ranged from 32 to 1165 patients. All studies were of level 2 or level 3 evidence. Pain was assessed using either a variety of patient surveys or the need for a pain specialist referral. Prevalence of post-mastectomy pain ranged from 17% to 64%. The mean prevalence of pain after mastectomy alone using a random-effects model is 35.6% (30.3%-41.3%). Prevalence of post-mastectomy reconstruction pain varied from 19% to 49%. Mean prevalence of pain after mastectomy with reconstruction using the random-effects model is 38.8% (32.0% - 46.0%). Our ANOVA analysis of all included manuscripts showed no significant difference between mean prevalence of chronic pain after mastectomy alone versus mastectomy and reconstruction (p=0.54).

CONCLUSION: Our meta-analysis establishes that post-mastectomy reconstruction does not significantly increase PMPS incidence. However, because this neuropathic pain often persists after reconstructive surgery, it is incumbent on the plastic surgeon to counsel patients on PMPS. Moving forward, prospective studies on the effects of reconstruction type are warranted. Additionally, adjunct procedures at the time of reconstruction, such as intercostal neurectomies and fat grafting, should be investigated for efficacy in treating PMPS and improving post-mastectomy reconstruction outcomes.

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Stacked Lateral Thigh Perforator Flap (LTP) As a Novel Option for Autologous Breast Reconstruction

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INTRODUCTION: The Deep Inferior Epigastric Artery Perforator (DIEP) flap is the gold standard in autologous breast reconstruction. When challenges such as insufficient tissue or prior surgeries exclude the abdomen as a potential donor site, alternate donor sites, including the buttock and thigh, as well as the use of stacked flaps can be considered. The Lateral Thigh Perforator Flap (LTPF) is an emerging candidate for autologous breast reconstruction, based on consistent and reliable septocutaneous vessels arising from the ascending branch of the lateral circumflex artery and the donor site location obviates the need for intraoperative repositioning. The flap is limited by the volume of soft tissue available for use as a single donor flap. An option to mitigate insufficient volume from a single flap is stacking two independent flaps as a single reconstruction unit. We present our experience performing stacked LTP flaps for unilateral breast reconstruction.

METHODS: This is a retrospective review of patients undergoing unilateral breast reconstruction using stacked LTP flaps performed between June 2015 and November 2015. Data points were documented for each patient including: demographics, mastectomy resection weights, flap dimensions and weights, indications, complications, and surgical. Immediate post-operative complications including: flap failure, infection, wound dehiscence, seroma, hematoma, and donor site morbidity were recorded for each patient.

RESULTS: Eight patients underwent delayed, unilateral breast reconstruction with stacked LTP flaps for a total of 16 flaps. Stacked flaps were anastomosed to anterograde and retrograde internal mammary vessels in all patients. The mean patient age was 47.3 years (range: 45–64 years); mean BMI was 26.2 kg/m² (range: 20.9–32.6 kg/m²). Two patients were current smokers while 5 patients noted significant alcohol use. Mastectomy specimen weights were only recorded for 5 of 8 patients, yielding an average mastectomy weight of 576.8 gm (range 221–826 gm). Mean flap weight was 333.1 gm (range 218–410 gm); and mean stacked weight of 636.9 gm (range 481–779 gm). The primary indications for using the LTP flap included insufficient abdominal wall tissue in 4 patients, absent deep inferior epigastric vessels secondary to prior surgical procedures unrelated to their reconstructions in 1 patient, and failed TRAM flaps in 3 patients.