was approved by the National Ethics Committee in Denmark (number: 2014-000510-59).

RESULTS: Ten women were enrolled in the study. The mean fat graft volume per breast augmentation was 310 ml fat (range, 300–350 ml). The cell enrichment of the fat grafts did not improve the volume retention after 4 months or 1 year. After 4 months, the retention of the cell-enriched grafts was 54.3% (95% confidence interval [CI], 39.4–69.2) versus 56.2% (95% CI, 42.7–69.6) in the control group ($P = 0.552$). After 12 months, the retention in the cell-enriched grafts was 54.0% (95% CI, 30.4–77.6) versus 55.9% (95% CI, 28.9–82.9) in the control group ($P = 0.566$). The difference in mean retention after 1 year was only $−1.9\%$ (95% CI, $−9.11\%$ to $5.31\%$). No serious adverse events occurred in any of the patients.

CONCLUSION: Our study showed that enriching fat grafts with high-dose expanded adipose-derived stromal cells did not lead to any improvement in fat graft survival in the breast.

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Breast Flap Neurotization Following Autologous Breast Reconstruction: A Prospective Trial

Presenter: Shelby Nathan, MD

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PURPOSE: Restoration of breast sensation following autologous breast reconstruction (ABR) is integral to the reconstructive paradigm for breast cancer patients. We hypothesize that innervation of reconstructed breast flaps will improve sensation and quality of life (QoL).

MATERIALS/METHODS: Free flap ABR patients with and without nerve allograft neurotization were recruited prospectively. Sensation testing was performed with a Pressure Specified Sensory Device (PSSD) at 12–24 months postoperatively in superior, lateral, medial, and inferior poles on both the mastectomy skin and the flap skin. The BREAST-Q was administered.

RESULTS: Thirty-two women were enrolled with a total of 54 reconstructed breasts (neurotized: $n = 22$; nonneurotized: $n = 32$). Average age was 51.9 years (range, 21–77) with a mean body mass index of 28.9 (range, 20–47). Average follow-up was 15.8 months (range, 12–24). Free TRAM flaps were most commonly performed (87%). Mastectomy skin exhibited greater sensation than flap skin ($P = 0.20$) and 1-point moving tests elicited a greater response than 1-point static ($P < 0.00$). In all but one area (inferior mastectomy), the neurotized group had more sensation with 1-point static ($P = 0.01–0.99$) and 1-point moving testing ($P = 0.33–0.92$). The superior mastectomy pole experienced significantly greater sensation in the neurotized group ($P < 0.001$). There was no difference in surgical site outcomes between the groups. Nine percentage neurotized versus 5% nonneurotized patients reported “more sensation” after reconstruction ($P = 0.32$). QoL demonstrated that the neurotized group was more satisfied in 9 of the 11 parameters ($P = 0.09–0.89$).

CONCLUSION: The return of breast sensation after ABR has become an important topic in reconstructive plastic surgery. Although multiple modalities have been proposed to increase postoperative sensation (eg, nerve conduits, allografts, and autografts), there is a paucity of prospective clinical trials investigating sensory outcomes. This abstract highlights the largest cohort to date, which quantitatively and qualitatively measures the effect of neurotization with nerve allografts on the return of sensation following ABR. To do so, we have directly measured sensation, patient-reported return of sensation, and breast-associated QoL. These preliminary results suggest that neurotization during ABR may lead to increased sensation and improved QoL. We hope that these results will further the knowledge of this topic, potentially improve patient outcomes, and stimulate a discussion regarding clinical management.

Incidental Pathologic Findings in Adolescent and Young Adult Reduction Mammaplasty

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Reduction mammaplasty is a safe, effective option that relieves physical and psychosocial symptoms in adolescent
and young adult patients with macromastia. However, little is known about the incidence, significance, or appropriate management of incidental abnormal breast pathology identified in pediatric patients. This study aims to characterize incidental pathologic findings of adolescent and young women undergoing reduction mammoplasty and guide management of young patients with incidental breast tissue abnormalities. Data were obtained from a retrospective chart review of 798 adolescent and young adult women who underwent unilateral or bilateral reduction mammoplasty at Boston Children’s Hospital between June 2010 and May 2018. Charts were reviewed for patient demographics, indication for surgery, relevant medical history, relevant family history, medications, breast cancer risk factors, type of surgery, reduction mammoplasty specimen weight, and histologic findings. Mean age at surgery was 17.5 years (range, 11–24 years). Indications for surgery included bilateral macromastia (94.9%), breast asymmetry (4.9%), and juvenile breast hypertrophy (0.3%). Patients (87.2%) had breast tissue without significant histopathologic change. Among the remaining 12.8%, findings included benign, nonproliferative lesions (eg, fibrocystic change, ductal ectasia) in 7.4% and proliferative lesions without atypia (eg, fibroadenoma, fibroadenomatoid change, pseudoangiomatous stromal hyperplasia) in 7.4%. Five patients (0.6%) had proliferative lesions associated with increased risk for invasive carcinoma, including 4 (0.5%) with atypical ductal hyperplasia and 1 (0.1%) with focal atypical hyperplasia. Patients with atypical proliferative lesions ranged from 14 to 19 years old, and none had a personal history of cancer, first-degree family history of breast cancer, or known history of BRCA mutation. Among all women who undergo reduction mammoplasty, prevalence of incidental overt carcinoma and high-risk proliferative lesions are low, with the largest study to date reporting 0.79% and 6.26%, respectively.1 Our findings are lower than those reported in older women, as expected. The low rate of overt breast carcinoma in young women has caused some to advocate against routine pathologic evaluation of reduction mammoplasty specimens. However, young women with atypia may have a greater risk of developing breast cancer relative to older women with atypia, and women who develop breast cancer before 35 years old tend to have more aggressive disease.2,3 The 5 young women with incidental atypical proliferative findings had no risk factors that would have otherwise stratified them for more rigorous breast cancer surveillance. Thus, the value of detecting incidental proliferative lesions in young women may lie in identifying those with an increased risk of developing invasive and/or biologically aggressive disease, facilitating earlier and more rigorous screening.

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Economics of Prepectoral Versus Subpectoral Implant-based Breast Reconstruction

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PURPOSE: Prepectoral breast reconstruction is increasingly prevalent due to numerous esthetic and patient-reported outcome benefits. However, the need for more mesh draws criticism regarding cost. There are limited studies comparing the economics of subpectoral versus prepectoral techniques. We aim to evaluate total patient cost differences between prepectoral and subpectoral breast reconstruction at our institution.

METHODS: We performed a retrospective review of patients undergoing immediate tissue expander-based reconstruction at our institution from 2016 to 2018. We excluded patients with <1-year follow-up, those who had concurrent gynecologic or nonreconstructive breast procedures, or those who did not receive postoperative antibiotics. In addition to clinical data, we recorded net patient charges for the initial surgery (reconstruction and mastectomy), implant exchange, and readmissions or reoperations for complications and revisions. Unilateral and bilateral cohorts were independently evaluated. Our primary outcome was the total charge for reconstruction (TCR).

RESULTS: There were 53 unilateral reconstructions (12 prepectoral and 41 subpectoral) and 69 bilateral reconstructions (16 prepectoral and 53 subpectoral). There were no significant demographic or treatment differences in terms of age, body mass index, smoking history, or chemotherapy and radiation exposure. Average follow-up was 25 months and 21 months for the prepectoral and subpectoral groups respectively. Among unilateral reconstructions, the TCR at follow-up was $194,000 for the prepectoral cohort and $168,000 for the subpectoral cohort (P = 0.07). The average cost of initial operation was $17,000 more for the prepectoral group (P < 0.01), and the average cost of implant exchange was $6,000.