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PURPOSE: Post-mastectomy radiotherapy (PMRT) plays a key role in influencing the reconstructive outcome of implant-based breast reconstruction. While some studies have reviewed the effects of PMRT on a tissue expander (TE) in two-stage breast reconstruction, few studies have assessed the impact of PMRT after direct-to-implant reconstructions (DTI) breast reconstruction. This study evaluates complications and reconstructive outcomes of PMRT in DTI compared to two-stage breast reconstruction.

METHODS: Single-institution retrospective review of immediate implant-based breast reconstruction patients that received post-mastectomy radiotherapy from 2006–2014 with a minimum of a 2-year follow-up were reviewed. All patients who received preoperative radiotherapy were excluded.

RESULTS: Out of the 1671 patients, 265 patients were identified to have received post-mastectomy radiation. Of the 265, 149 received DTI and 116 had two-stage tissue expander to implant (TE-I) reconstruction. The overall mean age was 46.5 and BMI 26.9. There were no significant differences in demographics except more smokers in the TE group (7.7% vs. 1.3%, p=0.009). The DTI group had a significantly higher use of Alloderm compared to the TE group (72.5% vs. 41.4%, p<0.001). Patients who received PMRT with a tissue expander in place had more complications except more smokers in the TE group (7.7% vs. 1.3%, p=0.009). The DTI group had a significantly higher use of Alloderm compared to the TE group (72.5% vs. 41.4%, p<0.001). Patients who received PMRT with a tissue expander in place had more complications (32.7% vs. 14.0%, p<0.001), skin-necrosis (10.3% vs 4.0%, p<0.001), wound breakdown (9.5% vs. 2.0%, p=0.011) and infections (16.3% vs. 4.03%, p<0.001) leading to a higher rate of explantation (16.3% vs. 3.3%, p<0.001). When comparing the reconstructive outcomes, the TE group had a higher failure rate (20.6% vs. 10.7%, p=0.025). However we found the revision for capsular contracture rates to be similar between the two cohorts (11.4% vs. 10.3%, p=0.783) as well as revision rates for contour asymmetry, size mismatch and malposition. Subgroup analysis of DTI with ADM vs. TE-I with ADM showed similar complication findings; however, the DTI group had significantly higher revision rates (21.1% vs. 7.4%, p=0.029). In our multivariate regression analysis, radiation to the TE had a higher risk of reconstruction failure than radiation after DTI reconstruction (OR 2.004, 95% CI: 0.987–4.067, p=0.05).

CONCLUSION: The optimal timing of post-mastectomy radiotherapy on implant-based breast reconstruction remains to be determined. Our study showed that PMRT after direct-to-implant breast reconstruction had a lower reconstructive failure rate compared to two-stage reconstruction.

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Postoperative Quality of Life in Patients Undergoing Contralateral Prophylactic Mastectomy with Breast Reconstruction

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PURPOSE: The aim of this study was to evaluate postoperative satisfaction and quality of life in women who chose to undergo contralateral prophylactic mastectomy (CPM) with reconstruction compared to those opting for unilateral procedures.

METHODS: Women undergoing immediate breast reconstruction at Montefiore Medical Center between June 2015 and September 2017 were prospectively enrolled in this study. For analysis, women were divided into two groups: those undergoing unilateral reconstruction and those undergoing bilateral reconstruction with CPM indication. Patient demographics, body mass index (BMI), cancer characteristics, adjuvant therapy, mastectomy weight, and complication rates were analyzed with bivariate statistics (t-tests, Mann-Whitney, and Chi-Square as appropriate). Preoperative and postoperative BREAST-Q survey scores were compared between groups using t-tests or Mann-Whitney tests after assessing for normality of score distribution.
RESULTS: Sixty-four women were included for analysis (CPM n=28 (44%), unilateral n=36 (56%)). Mean age of the two groups differed significantly (CPM 44 ± 9; unilateral 52 ± 8; p<0.001). Mean BMI, race/ethnicity (overall 84% Black or Hispanic), education, income, and mastectomy weight did not differ between groups. Women in CPM group had higher rates of adjuvant therapy (CPM=36% both chemo and radiation, unilateral=6%; p=0.02). The rate of having any postoperative complication was higher in CPM group (CPM=50%, unilateral=25%; p=0.04). The median postoperative survey time was 11.8 (IQR 6–13) months. For satisfaction with breasts, mean postoperative-preoperative score difference varied significantly between groups, with CPM group having higher and unilateral group having lower satisfaction in the postoperative period relative to preoperative assessment (CPM=7.5 ± 27, unilateral=-11.4 ± 26; p<0.01). Median postoperative scores for satisfaction with breasts (CPM = 58 [IQR 53–65.5], unilateral= 54.5 [IQR 39.5–61.5]; p=0.13), satisfaction with outcome (CPM = 67 [IQR 55–75], unilateral= 74 [IQR 55–86]; p=0.45), psychosocial well-being (CPM = 55 [IQR 44.5–73], unilateral= 65 [IQR 41–86]; p=0.53), and sexual well-being (CPM = 44 [IQR 26–58], unilateral= 50.5 [IQR 32–56.5]; p=0.52) did not differ between groups.

DISCUSSION: Patients electing for CPM are younger and have more advanced disease than those who chose unilateral mastectomy with reconstruction. Despite higher rates of complications in patients undergoing CPM, improved satisfaction with breasts postoperatively may reflect greater satisfaction with breast symmetry.

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Long-term Functional Upper Extremity Outcomes in Adult Apert Syndrome Patients

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PURPOSE: Currently, limited data exist on long-term functional outcomes for patients with Apert syndrome, a rare congenital condition characterized by craniofacial anomalies and complex syndactyly of hands and feet. The study aimed to evaluate upper extremity function and health-related quality of life (HRQOL) in adult Apert syndrome patients.

METHODS: Following Institutional Review Board approval, medical records were queried for patients between ages 18 and 65 years old with Apert syndrome. Recruitment was conducted via postal mail, followed by telephone calls. After obtaining consent, demographic and clinical data, including syndactyly type, were collected during visits and from medical records. Additional patient-reported demographic data were collected through a brief interview. Participants completed two self-reported HRQOL instruments: the 36-Item Short Form Health Survey Instrument, version 2 (SF-36v2), and the Disabilities of the Arm, Shoulder, and Hand (DASH) Outcome Measure. Functional outcomes included moving two-point discrimination, metacarpophalangeal joint range of motion, pinch strength, and the Jebsen Hand Function Test (JHFT).

RESULTS: Between July 2016 and September 2017, 22 participants completed the study. Fifty-five percent of participants were male, 91% were Caucasian, and age ranged from 18 to 43. Sixty-two percent were right-hand dominant and 36% had one digit amputated. Average SF-36 scores were 50.41 ± 12.03 for mental health (best possible score = 100) and 52.77 ± 7.14 for physical health (best possible score = 100). Average total DASH score was 17.73 ± 14.11 (best possible score = 0). Average total JHFT scores for dominant hand were 69.2 seconds for males and 64.7 seconds for females; averages for non-dominant hand were 87.3 for males and 87.7 seconds for females. Average lateral and chuck pinch strengths were 6.98 ± 2.72 and 5.08 ± 2.02 kilograms for dominant hand, respectively, and 6.54 ± 2.53 and 5.33 ± 1.98 kilograms for non-dominant hand, respectively. Average two-point discrimination was 3.95 ± 0.99 millimeters. Average total metacarpophalangeal joint range of motion was 48.60 ± 21.10 degrees. Interviews were completed by all 22 participants. Most subjects reported completing high school, several had completed college and several were considering or enrolled in graduate school. All reported being employed or volunteering at some point during their adulthood. Participants reported living situations that ranged from living with immediate family or a spouse, to living alone.

CONCLUSION: This study offers novel data on long-term functional upper extremity and HRQOL outcomes