vs 6.7% XRT, p<0.05). XRT patients also had higher rates of capsular contracture (16.9% XRT vs 3.6% no-XRT, p<0.001). Within the XRT group, prior-XRT was associated with higher rates of takeback (28% prior-XRT vs 12% adj-XRT, p<0.005), particularly for infection and skin necrosis. Multivariate regression analysis adjusting for potential confounders among groups’ independent demographic and peri-operative factors revealed that while XRT overall was associated with higher rate of complications, timing of XRT was not itself an independent predictor in the development of these complications.

CONCLUSION: Radiation therapy results in higher overall complications in implant-based reconstruction, including higher rate of takebacks for complications such as infection and skin necrosis. The damaging effects of XRT appear long-lasting, as patients with history of XRT more than 10 years prior to reconstruction had similar complication rates compared to those with more recent XRT and those undergoing adjuvant XRT. Additional investigations will be needed to further characterize specific effects of XRT timing on reconstruction outcomes, but this study represents a rare longitudinal analysis of these variables and their ability to predict surgical outcomes, which are crucial for patient counseling and selection of reconstructive options.

Do Women with a History of Radiation Therapy Fair Better Than Those Undergoing Post-Mastectomy Radiation Therapy in the Setting of Immediate Implant-Based Breast Reconstruction?

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BACKGROUND: Women undergoing implant-based breast reconstruction in the setting of radiation therapy (RT) are more likely to experience clinical complications.1 However, immediate implant-based reconstruction is still frequently performed in the United States for women who undergo post-mastectomy radiation therapy (PMRT) and in patients with remote histories of RT.2-4 The objectives of this study were to determine whether women with histories of RT prior to mastectomy and immediate, implant-based reconstruction have similar complication rates and patient reported outcomes (PROs) to women undergoing PMRT following immediate implant-based reconstruction.

METHODS: The Mastectomy Reconstruction Outcomes Consortium (MROC) is an 11 center, prospective cohort study assessing clinical outcomes and PROs following post-mastectomy breast reconstruction. The current analysis includes all women undergoing immediate implant-based reconstruction, further categorized into three groups (history of RT prior to mastectomy, PMRT, and no RT). Controlling for clinical covariates, multivariate regressions evaluated the effects of radiation timing on complication rates (any complication, major complications, and reconstruction failure) and PROs (satisfaction with outcome and satisfaction with breasts) at two years.

RESULTS: The analysis included 84 women with previous RT, 329 who received PMRT, and 1,181 with no history of radiation therapy. Comparing prior RT, PMRT and no RT groups, the unadjusted rates for any complications were 35.7%, 40.1%, and 22.9%, respectively (p<0.001); major complication rates were 26.2%, 34.0%, and 15.8%, respectively (p<0.001); while rates of reconstructive failure were 13.1%, 17.0%, and 4.1%, respectively, (p<0.001). After adjusting for covariates, there was a trend towards higher risks for the PMRT cohort, compared to the prior RT group: OR 1.54, p=0.13 for any complications, and OR 1.63, p=0.12 for major complications. There were no significant differences in failure rates between the prior RT and PMRT cohorts. For PROs, the adjusted models indicated that while prior RT had no significant effects on patient satisfaction, women receiving PMRT reported significantly lower satisfaction compared with the no RT group. (satisfaction with breast: p<0.001, overall satisfaction p=0.004).

CONCLUSION: Based on these results, the effects of radiation on complication rates and PROs in immediate implant-based breast reconstruction appear to vary depending on whether RT was delivered prior to mastectomy/reconstruction or following these procedures. Our findings may facilitate more nuanced and individualized discussions between surgeons and women considering immediate implant-based reconstruction in the setting of radiation therapy.
Reoperative Complications in 521 Prepectoral Breast Reconstructions Using Acellular Dermal Matrix: A Departmental Paradigm Shift

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PURPOSE: Prepectoral breast reconstruction continues to gain ground as the new standard for non-autologous correction of surgical amastia. When compared to a subpectoral pocket, benefits include improved aesthetics, absence of animation deformity, decreased operative time and less postoperative pain. Until now, comparisons between the two techniques have been relatively underpowered and subject to observer bias. In what is the largest sample size to date, this study seeks to compare the rates of reoperative complications between subpectoral and prepectoral breast reconstructions using human acellular dermal matrix (ADM).

MATERIALS AND METHODS: A retrospective review of 7 surgeons performing staged implant-based breast reconstruction with tissue expansion from 2015 to 2017 was performed. Surgical technique included either subpectoral tissue expander placement with lower pole ADM sling or prepectoral reconstruction with ADM wrap. A complication was defined as any incident that required an unplanned return to the operating room. Patient demographics and comorbidities between the groups were assessed for outcome correlations.

RESULTS: During this time period, 664 patients underwent staged expander reconstruction to total 1084 reconstructed breasts (n=563 subpectoral; n=521 prepectoral). Each surgeon performed both techniques, all having transitioned to prepectoral by the end of the collection period. There were no differences in patient demographics between the two groups, including BMI (p=0.93) and smoking status (p=0.19). Total complication rate requiring unplanned reoperation between subpectoral and prepectoral reconstructions were 21.7% and 20.0%, respectively (OR 0.98; 0.95 CI 0.73–1.32, p=0.92). More specifically, no significant difference was found for rates of hematoma (OR 1.39; 0.95 CI 0.62–3.08, p=0.42), infection (OR 1.04; 0.95 CI 0.70–1.56, p=0.84), exposure (OR 0.95; 0.95 CI 0.60–1.50, p=0.82) or seroma (OR 0.54; 0.95 CI 0.16–1.80, p=0.31) between the subpectoral and prepectoral techniques. Smoking did significantly increase the risk of reoperation across all reconstructions (OR 1.48; 0.95 CI 1.01–2.16, p=0.042).

CONCLUSION: Staged prepectoral breast reconstruction is a safe technique that does not impart a higher unplanned reoperation rate than traditional subpectoral expander placement. Smoking continues to be a proven risk factor for surgical complications and cannot be reiterated enough to patients. Adoption of the prepectoral plane has been universally embraced across our plastic surgery department.

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