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Radiated Immediate Prepectoral Direct to Implant Reconstruction: A Retrospective Cohort Study

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Purpose: Increasing use of prepectoral plane in post mastectomy implant-based reconstruction has made immediate direct to implant (DTI) reconstruction more achievable. There has been increased incidence of post mastectomy radiation therapy (PMRT) making it important to understand the complication profile of immediate DTI reconstruction in patients who may require adjuvant radiation therapy.

Methods: A retrospective cohort study of consecutive patients undergoing prepectoral DTI reconstruction with and without PMRT was performed. Patient and treatment level factors, operative, and post-operative outcomes were extracted on both the patient and breast level for the prepectoral radiated and nonradiated patients. The presence of at least one minor complication (superficial or full-thickness necrosis, cellulitis requiring oral antibiotics, hematoma, or seroma) or major complication (cellulitis requiring intravenous antibiotics, hospital readmission, explanation, or unplanned return to the operating room) was compared. We also evaluated how radiation affects outcomes of prepectoral DTI vs subpectoral DTI. Univariate analysis was performed to evaluate differences in outcomes between groups.

Results: 242 patients underwent DTI reconstruction. 148 patients underwent prepectoral DTI reconstruction. 54 patients underwent subpectoral DTI reconstruction. Patients who underwent PMRT had higher rates of neoadjuvant chemotherapy and axillary lymph node dissection. Univariate analysis did not demonstrate any significant differences in minor or major complications between the radiated and non-radiated prepectoral DTI breasts. Radiated prepectoral patients had a higher rate of capsular contracture and explant for capsular contracture.

Conclusion: Immediate prepectoral DTI reconstruction in patients who will have PMRT has an improved complication profile compared to subpectoral placement.