EXTERNAL BEAM RADIATION THERAPY AND ITS IMPACT ON SURGICAL OUTCOMES IN PATIENTS UNDERGOING SHOULDER PROCEDURES: A RETROSPECTIVE STUDY

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Background: External beam radiation therapy (XRT) is a common adjunct treatment in patients with breast cancer. While integral to reducing recurrence, XRT has several soft tissue drawbacks including desquamation, subcutaneous fibrosis, and even necrosis. Given the beam proximity to the shoulder joint during treatment of upper outer quadrant and axillary region cancers, these side effects should concern shoulder surgeons during their planning and preoperative counseling. The primary objective of this study was to describe complications and rate of incidence following shoulder surgery in patients with a history of XRT as a treatment for upper outer or axillary breast cancer.

Methods: A 20-year retrospective chart review was conducted at our institution. Patients were included if >18yo, had a history of breast cancer to the upper outer or axillary region treated at least once with XRT, and had undergone a surgical procedure to their ipsilateral shoulder with documented follow-up for up to one year postop. Demographic information, cancer diagnosis and treatment details, pre- and post-operative range of motion, and incidence of complication were analyzed.

Results: Twenty-two women met inclusion criteria (average age: 64.3 years), having a total of 25 shoulder procedures (12 rotator cuff repairs, 9 shoulder arthroplasties, 4 other procedures). Complications occurred in 25% and 33% of rotator cuff and arthroplasty patients, respectively. Patients generally improved their forward flexion and abduction range of motion postoperatively, however, a decrease from their preoperative internal and external rotation was noted.

Conclusion: Compared to reported national averages for complication rates in following rotator cuff repair (10.4%) and shoulder arthroplasty (10-16%) surgery, we observed an increased rate of postoperative complication in patients with past history of XRT for breast cancer treatment undergoing later shoulder procedures. Future cohort studies are needed to further clarify the effects of XRT on shoulder pathology and expected postoperative course.