reoperation or rehospitalization designated as “major”. Survey scores and complication rates were compared across cohorts using multivariate regressions, controlling for demographic and clinical variables.

RESULTS: Of the 3120 patients recruited in the MROC study, 317 met inclusion criteria. Of those, 237 patients received radiation treatment before expander-implant exchange (TE-XRT), and 80 received radiation treatment after exchange (Implant-XRT). Controlling for covariates, radiation timing had no significant effects on PRO subscale scores at two years postoperatively. Compared with preoperative assessments, two year PRO scores were significantly lower in both cohorts for satisfaction with breast, physical well-being, and sexual well-being subscales of BREAST-Q (p < 0.05). In addition, for the TE-XRT cohort, the two year PRO scores were significantly lower in the body image subscale of EORTC as well (p < 0.05). Finally, timing of radiation had no significant effects on odds of overall complications, major complications or reconstructive failure.

CONCLUSION: In this multicenter, prospective analysis, the timing of radiation (before or after exchange) appeared to have no significant effects on either PROs or complication risks in immediate expander-implant reconstruction. Regardless of radiation timing, two year measures of satisfaction and other PROs did not appear to return to preoperative levels among women undergoing immediate expander-implant reconstruction in conjunction with PMRT. These findings provide patients and providers with additional evidence for treatment decision-making.

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Clinical Outcomes of Implant-Based Breast Reconstruction in Patients with Prior Radiation Therapy: Does Timing of Prior Radiation Matter?

Presenter: Nance Yuan, MD
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.