

Two-Stage Implant-Based Breast Reconstruction Using Intraoperative SPY: A Propensity Score-Matched Analysis

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PURPOSE: Limited comparability between study groups can generate significant selection and observer bias when evaluating the efficacy of SPY system and fluorescence imaging for implant-based breast reconstruction (IBBR). Herein, we compared the surgical outcomes and complications during the first stage of reconstruction between reconstructions intraoperatively evaluated with fluorescence imaging using the SPY system and clinical assessment using a matched analysis.

RESULTS: After propensity score matching, 198 reconstructions were evaluated. Ninety-nine reconstructions in each group. The median time for TE-to-implant exchange (140-days versus-185 days $p=0.476$) and time to initiate adjuvant radiotherapy (144-days versus 98-days, $p=0.199$) were comparable between groups. The 30-day rate of wound-related complications (21% versus 9%, $p=0.017$) and 30-day rate of wound-related unplanned interventions were significantly higher in reconstructions evaluated with clinical assessment when compared to SPY system (16% versus 5%, $p=0.011$). A higher 30-day rate of seroma (19% versus 14%, $p=0.041$) and hematoma (8% versus 0%, $p=0.004$) were found in reconstructions intraoperatively assessed with SPY.

CONCLUSION: After controlling most demographic and surgical variables between groups, fluorescence imaging decreased the rate of wound-related complications and wound-related unplanned operations in the early postoperative period.

METHODS: We conducted a retrospective review of patients undergoing total mastectomy and immediate two-stage IBBR with TEs between January 2011 and December 2020. The rate of complication, time for TE-to-implant exchange, and time to start radiotherapy were compared between groups (intraoperative fluorescence imaging versus clinical assessment) using a propensity score-matched analysis.

