Breast Reconstruction in Patients with Unilateral Breast Cancer who choose Contralateral Prophylactic Mastectomy - An Assessment of Postoperative Morbidity

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BACKGROUND: The benefit of contralateral prophylactic mastectomy in patients without an increased risk of contralateral disease remains a subject of debate (1-3). The potential for increased morbidity with bilateral, as opposed to unilateral, breast reconstruction in this population has not been evaluated in a prospective fashion. The aim of this study is to assess the postoperative morbidity associated with unilateral and bilateral breast reconstruction in patients with unilateral breast cancer. The hypothesis is that bilateral breast reconstructions are associated with greater complications.

STUDY DESIGN: Women undergoing mastectomy and breast reconstruction for unilateral breast cancer, were recruited as part of the Mastectomy Reconstruction Outcomes Consortium (MROC) Study. Demographic and clinical data were collected prospectively at 10 major medical centers in the United States and Canada. Postoperative complications following implant and autologous breast reconstruction in patients undergoing unilateral or bilateral mastectomy were recorded. Univariate tests and logistic regression analyses were performed to study the effects of reconstructive method, laterality, and known risk factors on surgical complication rates.

RESULTS: We identified 1223 women undergoing mastectomy and reconstruction for unilateral breast cancer. Of these, 556 (45.5%) women received unilateral and 667 (54.5%) underwent bilateral mastectomies. Bilateral reconstructions were more common in women who were younger ($p<0.0001$), had college degrees ($p=0.003$), were employed ($p=0.009$) and had higher incomes ($p=0.009$). Compared with unilateral implant procedures, bilateral, implant reconstructions were associated with a higher total complication rate (26% vs 18%, $p=0.006$) and a higher major complication rate (17.8% vs 11.3%, $p=0.009$). Bilateral autologous procedures were associated with a higher risk of total complications than unilateral autologous reconstructions (56.4% vs 44.3%, $p=0.031$). A trend toward a higher rate of major complications after bilateral autologous reconstruction was also observed (40.6% vs 32.5%, $p=0.13$). Controlling for demographic and clinical covariates, bilateral autologous (OR 1.73, 95% CI 1.07-2.81) and implant reconstructions (OR 1.73, 95% CI 1.22-2.47) were associated with a higher risk of total complications compared to similar unilateral reconstructions.

CONCLUSIONS: Contralateral prophylactic mastectomies with reconstruction are more often performed in younger, well-educated women, with greater financial means. Significantly higher complication rates with both implant and autologous bilateral breast reconstructions may require readmission or additional operative interventions. This information should be discussed with women at low risk for contralateral breast cancer interested in pursuing prophylactic mastectomy.

REFERENCES

1. Morrow M. Prophylactic mastectomy of the contralateral breast. *The Breast.* 2011; S3:S108-10.

2. Rosen PP, Groshen S, Kinne DW, Norton L. Factors influencing prognosis in node negative breast carcinoma: analysis of 767 T1N0M0/T2N0M0 patients with long term follow-up. *J Clin Oncol.* 1993;11:2090-100.

3. Fayanju OM, Stoll CR, Fowler S, Colditz GA, Margenthaler JA. Contralateral prophylactic mastectomy after unilateral breast cancer: A systematic review and meta-analysis. *Ann Surg.* 2014; 260:1000-10.