

Cost and Outcome Analysis of Breast Reconstruction Paradigm Shift

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Abstract:

Background: Increasing use of bilateral mastectomies for treatment and prevention of breast cancer has generated an increased demand for bilateral breast reconstruction.¹⁻⁴ This study analyzes changing patterns of reconstructive methods aimed at meeting the combined goals of increased bilateral reconstruction and decreased morbidity. Cost and outcome endpoints were examined.

Methods: A single institution series of 3,171 consecutive mastectomy cases over 10 years was divided into two periods: 1999–2004 and 2005–2010. Only the primary type of breast reconstruction (that performed with mastectomy) was considered. Endpoints between the two periods were compared using two-tailed t-tests for continuous variables.

Results: The number of patients undergoing bilateral mastectomy increased 2.6 fold from 1999–2004 (n=237) to 2005–2010 (n=634). Unilateral mastectomy volume remained fairly constant from 1999–2004 (n=1104) to 2005–2010 (n=1196). Mean patient age at diagnosis decreased by 7 years ($p < 0.001$). In 2005–2010, the autologous reconstruction rate decreased from 60% to 26%, while implant-based reconstruction increased from 40% to 74%. Notable reconstructive paradigm shifts included increased single-stage implant reconstruction and selective application of perforator flaps for bilateral autologous reconstruction ($p < 0.001$). Two-stage tissue expander reconstruction accounted for the greatest share of total cost (45%) in 2005–2010. Despite significant shifts in patterns of selection of reconstructive methods, the overall complication and revision rates remained low.

Conclusions: Combined demands of a younger patient demographic and increased need for bilateral reconstruction were largely met with single-stage and prosthesis-based procedures. This study provides a foundation for the detailed cost analysis necessary to elucidate the effects of changing reconstructive trends on local and national health care systems, and for the identification of necessary areas for growth and changes in order to subsequently direct allocation of resources at institutional and national levels.

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