Reconstruction in the Setting of Metastatic Breast Cancer: A Challenging Clinical Question

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While 12.4% of women in the US will be diagnosed with breast cancer in their lifetime, a significantly smaller number present with metastatic disease at diagnosis.¹ It is estimated that approximately 4% of breast cancer patients present with de novo metastatic disease.² While metastatic breast cancer (MBC) mandates a shift in clinical focus from cure to disease control, overall survival (OS) rates are improving.

Until recently, it has been common practice to offer surgery solely for symptom control and palliation in patients with MBC. Although the use of primary site surgery in MBC remains controversial, evidence exists supporting prolonged OS in carefully selected patients.^{3–11}

Weiss et al. utilized the National Cancer Database (NCDB) to examine the use of reconstruction in MBC patients who underwent mastectomy, and to analyze complication and survival rates.¹² This is a step further along the continuum of care for stage IV breast cancer patients, and raises an even more controversial question about surgical management. In the setting of increased life expectancy, do quality-of-life concerns merit consideration of breast reconstruction in patients with MBC?

The NCDB database represents more than 1500 Commission on Cancer-accredited facilities and enables assessment of treatment strategies and outcomes for patients with stage IV breast cancer. The authors demonstrated that more than 10% of patients with MBC have received breast reconstruction surgery, despite minimal evidence to support its safety or effect on patient

satisfaction and quality of life. This strongly suggests a need for data to guide evidence-based care in this small but significant patient group.

The study by Weiss et al. included patients with de novo metastatic disease who underwent unilateral or bilateral mastectomy with or without reconstruction. Overall, 11.5% of stage IV mastectomy patients underwent reconstruction, with rates increasing significantly by year from 2004 to 2013. Median OS for the reconstruction and non-reconstruction groups was similar, as were 30- and 90-day mortality rates. Reconstruction patients were younger, had fewer metastatic sites, and were more likely to have low-grade and hormone receptor-positive disease.

Of note, patients who underwent metastasectomy were excluded in order to create a homogenous cohort. It is worth considering that excluded patients who underwent metastasectomy may represent a carefully selected population. Many of the factors that contribute to receipt of metastasectomy are worth considering in reconstruction for MBC patients: young age, oligometastatic disease, less primary disease burden, and longer disease-free intervals. Therefore, by excluding this group, Weiss et al. may have excluded those patients who would be most suitable for more extensive reconstructive surgery in the metastatic setting.

Unplanned readmissions were higher in tissue-based reconstruction than in implant-based surgery, but overall (planned and unplanned) readmissions did not differ across reconstruction type. This differs from previous reports, with Cordeiro et al. demonstrating higher surgical complication rates in metastatic patients using National Surgical Quality Improvement Program (NSQIP) data, albeit for surgery of the primary breast site, not reconstruction.¹³ Complication rate is an important point in MBC patients who often require ongoing systemic treatment for disease control. Low rates of early mortality and readmission seen in this study were cited by the authors to

ease concerns about delay to systemic therapy post reconstruction. However, outpatient complications are not accurately reflected in these data, and their impact on quality of life and return to treatment are difficult to assess via retrospective NCDB data.

The choice of autologous reconstruction in the metastatic patient also merits mention: this is a larger surgery requiring increased operative and recovery time, with potential for higher rates of complications. For an MBC patient with increasing but still limited life expectancy, an autologous procedure may not be an obvious choice. In the study by Weiss et al., autologous reconstruction patients were older, with higher rates of T4 disease. This may reflect the need for extensive resection necessitating autologous closure in this group. This study does not mention staged implant-based reconstruction and use of tissue expanders, which is likely a reflection of the data available through the NCDB. However, timing of implant switch in conjunction with interruption of systemic therapy and consideration of life expectancy in this patient group is an important point for contemplation.

This study highlights important cost issues in the treatment of MBC. In this period of increasing focus on cost-effective care, utilization of healthcare dollars in this controversial setting must be carefully balanced with quality-of-life concerns.

Weiss et al. present a thoughtful analysis of trends in reconstruction for women with MBC. This is an important and challenging clinical question for the surgical community, where we must strive to balance patient quality of life with evidence-based care and healthcare utilization burden. Increasing median survival for stage IV breast cancer patients mandates further study on the impact of reconstruction from a multidisciplinary perspective in order to best understand its true risks and benefits.

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