Higher Mortality and Complication Rates Associated with Surgery for Metastatic Breast Cancer than for Early Stage Disease

Consider surgical risks and benefits carefully for advanced disease


April 30, 2014, Las Vegas--Metastatic breast cancer patients experience significantly more complications and mortality within 30 days of surgical treatment for their disease than patients with earlier stage cancer, according to a new study. Lead researcher Erin Cordeiro, MD of the University of Toronto reported this week at the American Society of Breast Surgeons (ASBrS) Annual Meeting that for metastatic patients, the 30-day morbidity was 7.5% and mortality was 1.54%, while the non-metastatic group experienced 3.7% morbidity and 1.8% mortality. She noted that common post-operative problems in the metastatic setting included infectious, respiratory, thrombolic, cardiac and bleeding complications. The adjusted odds ratio of post-operative complications for metastatic disease was 1.6.

“These results are important,” says Dr. Cordeiro. “We found that breast surgery in stage 4 patients is occurring frequently in North America. Research on the survival benefits for breast surgery in metastatic patients has had conflicting results. But whether these patients are at higher risk of post-operative complications has never been examined. A patient with metastatic breast cancer likely has systemic changes that predispose them to other medical difficulties.”

The study analyzed National Surgical Quality Improvement Program (NSQIP) participant use files (PUF), a prospectively collected database of 30-day inpatient and outpatient morbidity and mortality. From 2005 to 2012, 68,316 patients were identified who underwent surgical treatment for breast cancer. Of these, 1031 or 1.5% had diagnosed metastatic cancer.
Patients undergoing bilateral breast surgery, and those with concurrent surgery that was not breast- and/or reconstruction-related were excluded. The study controlled for types of surgery performed, including axillary lymph node dissection and mastectomy. It also controlled for associated co-morbidity, age, diabetes, smoking status, BMI, pre-operative chemo or radiation therapy and operative time.

Of the metastatic group, 71% underwent mastectomy, while 49% received the surgery in the non-metastatic group. Metastatic patients were also more likely to receive full axillary lymph node dissection. They had a longer median time in surgery and longer post-operative hospital stay.

“Research on the survival benefits of breast cancer surgery for metastatic patients is currently underway,” comments Dr. Cordeiro. “But until those findings are clear, this study shows that the risks of surgery are something to seriously consider before deciding on a course of treatment.”
Abstract

Presenter: Erin Cordeiro  
Institution: University of Toronto

Title: Is Breast Surgery for Metastatic Breast Cancer Safe?: An analysis of the NSQIP database

Objective: Approximately 3.5% of all newly diagnosed breast cancer patients will present with metastatic disease. There is ambiguity regarding the proper surgical management of patients with Stage IV disease, however no one has examined whether these patients are at higher risk of post-operative complications. The purpose of this study was to determine the morbidity and mortality associated with breast surgery in the metastatic setting.

Methods: We performed analysis of the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) participant use files (PUF), a prospectively collected database of 30-day inpatient and outpatient morbidity and mortality. Records from 2005-2012 were searched for patients with a primary diagnosis of breast cancer, with a breast surgical procedure as their primary surgery. High-risk patients, as well as those with bilateral breast surgery were excluded. We identified two cohorts of patients, those with metastatic disease and those without. Morbidity and mortality outcomes were then analyzed, including composite outcomes of morbidity. Univariate and multivariable logistic regression analyses were performed to identify significant predictors of post-operative complications.

Results: We identified 68,316 patients who underwent breast surgery for breast cancer. Of these, 1,031 (1.5%) had a diagnosis of metastatic breast cancer. Patients with metastatic disease were more likely to undergo a mastectomy (71% vs. 49%, p<0.0001), they were also more likely to undergo a full axillary lymph node dissection (47% vs. 32%, p<0.0001). The metastatic group had a longer median operative time as well as a longer post-operative stay in hospital. On univariate analysis, the overall 30-day morbidity rate was significantly higher in the metastatic cohort (7.5% vs. 3.7%, p<0.0001), as was the all-cause 30-day mortality (1.8% vs. 0.06%, p<0.0001). The metastatic cohort was more likely to experience: infectious, respiratory, thromboembolic, cardiac and bleeding complications. The adjusted odds ratio of experiencing a post-operative complication in the setting of metastatic disease was 1.6 (95%CL: 1.2, 2.1).

Conclusion: This is the first study to document the morbidity and mortality associated with breast surgery in the setting of metastatic breast cancer. We found that the 30-day mortality and morbidity rates following breast surgery in the metastatic setting to be significantly higher than in patients with Stage I-III disease. This data may have implications for surgical management in this patient population.