Does Partial Mastectomy Volume and Tumor Size Predict Margin Positivity in Breast Cancer Patients?

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Introduction

• Since NSABP B-06 established partial mastectomy as standard therapy for early stage breast cancer\(^1\), reported rates of margin positivity (MP) have ranged from 10-40%\(^2\).
• The aim of this study was to examine if specimen volume and/or tumor size influence the probability of MP for invasive and noninvasive breast cancer patients.

Methods

• A retrospective review of pathology records from patients having partial mastectomy for invasive and non-invasive breast cancer within our network.
• Data reviewed included: specimen volume, tumor size, patient age, tumor histology, MP rates, and receipt of neoadjuvant chemotherapy.
• Logistic regression models were applied to determine what factors were significantly related to the probability of MP.
• From 1/2015 through 3/2017, 418 patients had a partial mastectomy.
• The overall MP rate was 17.2%.
• 12.0% for invasive carcinoma
  • 13.1% for IDC
  • 21.2% for ILC
• 22.4% for DCIS.
• 10.6% in 46 patients who had neoadjuvant chemotherapy

Results

- Full covariate data was available to calculate specimen volume in 371 patients.
- The overall MP rate in this group was 17.8%.
- Both maximum tumor size and specimen volume were significantly related to the probability of MP (p< 0.001 and p=0.038, respectively).
- Figure 1 illustrates the relationship between specimen volume, tumor size, and likelihood of positive margin.
- Age had a non-significant effect on MP and was excluded from the model.

Conclusions

• Both tumor size and specimen volume predict margin positivity in modern breast conservation surgery.
• Surgeons can tailor their resection volumes based on expected tumor size and predicted MP rates.
• Further study would be useful to examine other factors that may affect margin positivity.

References