



Enhanced Intraoperative Breast Specimen Assessment May Reduce Margin Positivity And Reoperation Rates In Breast Cancer

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Background:

Partial mastectomy is the most commonly performed operation for breast cancer. Margin positivity throughout the nation ranges from 30-60%, of which 10-36% require reoperation. Data from the SHAVE trial showed that excising additional 1 cm margins circumferentially can reduce margin positivity by 50%. We practice selective additional margin excision based on enhanced intraoperative margin assessment including gross specimen evaluation by pathology. We are concerned about the large volume of tissue that may be unnecessarily removed secondary to routine circumferential margin excision. We suggest that enhanced intraoperative specimen assessment may reduce margin positivity and reoperation rates.

Methods:

This is a retrospective review of a prospectively maintained, single surgeon database of patients undergoing partial mastectomy between February 2014 – December 2016 at Medstar Union Memorial Hospital. One hundred consecutive patients diagnosed with DCIS or invasive carcinoma undergoing partial mastectomy with the intention of margin negativity were included. Information regarding preoperative planning and intraoperative specimen assessment was collected from clinical notes and operative records. These data points included preoperative imaging studies, use of preoperative needle localization, intraoperative ultrasound to guide surgery, use of intraoperative Faxitron, and gross pathologic consultation. The data are analyzed to calculate margin positivity and reoperation rates in comparison to reported experiences.

Results:

The average age was 62.3 years, ranging from 33-96 years. Of the 100 patients, 73 had invasive cancer, 19 had DCIS. The average lesion size was 14.17mm. There were 8/100 cases with a positive margin, of which 5 cases had re-excisions. An additional 3 cases had re-excision for positive cells <1mm from margin. Faxitron was used in 89 cases and gross consultation in 100%

cases. The average number of additional margins taken intra-operatively was 1.2. 22/100 cases did not have additional margins taken during the index operation.

Conclusions:

This is a hypothesis generating study that was prompted by our concern about the amount of tissue and the expense created by routine circumferential margin removal. The issue of variability among different institutions and the very high reoperation rates reported by many beg for an explanation. Many techniques have been proposed to reduce this unexplained variability but none has consistently shown the necessary improvement and many new technologies are costly. Our experience suggests that low margin positivity and reoperation rates may be achieved using inexpensive enhanced intraoperative specimen assessment. We can test this hypothesis by comparing information among the different hospitals in our system. A head to head prospective trial comparing routine shaves versus enhanced specimen assessment and selective additional margins would answer this question. Enhanced intraoperative margin assessment and selective margin excision may provide a good alternative to routine shave margin while removing less breast tissue. Uniform specimen assessment algorithms may also reduce margin positivity and reoperation rates.

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