The Value of Routine Cavity Shave Margins in Breast Conservation Therapy in a Rural Academic Institution

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BACKGROUND/OBJECTIVE

• Local recurrence (LR) of breast cancer following breast-conserving surgery (BCS) is influenced by final margin status.

• Routine cavity shave margins (CSM) at the time of lumpectomy have been shown to decrease LR rates and need for additional surgery.

• We sought to evaluate the experience with CSM at a large tertiary referral cancer center servicing a rural patient population.

METHODS:

• After IRB approval, we retrospectively reviewed breast cancer patients who underwent BCS for invasive ductal (IDC), lobular (ILC) and ductal carcinoma in situ (DCIS) between January 2009 and September 2018.

• CSM technique = standard across all lumpectomies = excising and orienting each margin separately.

• EMR reviewed and data was collected related to demographics, surgical pathology, recurrence and survival.

• Descriptive statistics were calculated using mean ± SD and comparison of outcomes to national rates was performed by reporting likelihood-ratio chi-squared test (LRT).

RESULTS

550 patients with lumpectomy and routine CSM

Demographics

<table>
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<tr>
<th>Age (Mean ± SD), years</th>
<th>61 ± 11</th>
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<tr>
<td>BMI</td>
<td>31 ± 7</td>
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<tr>
<td>Tumor Size, mm</td>
<td>13 ± 10</td>
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Positive Margin Rate by Tumor Histology (%)

<table>
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<th>DCIS</th>
<th>10.2%</th>
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<tr>
<td>IDC</td>
<td>6.8%</td>
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<tr>
<td>Mixed IDC + DCIS</td>
<td>12.1%</td>
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<tr>
<td>ILC</td>
<td>15.8%</td>
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Overall positive margin rate → reoperation = 9.7% vs. accepted average of 20%, LRT 43.7 (p<0.0001).

CONCLUSIONS

• LR was 2.4% compared to an accepted national average rate of 9%, LRT 41.0 (p<0.0001).

• The systemic recurrence rate for our cohort was 2.5%. Of the 550 patients, there were 19 deaths with 6 deaths due to metastatic breast cancer.

• Excision of routine CSM at the index BCS reduces positive margin rate by approximately 10%.

• CSM save subsequent reoperation for positive lumpectomy margins in patients with invasive and non-invasive breast cancer, while maintaining a low rate of recurrence.

• This can be especially important in rural regions with access to health care disparities and patients with financial hardships.

Occult multifocal DCIS was detected in 18.9% of the overall positive margins, with a negative lumpectomy margin and positive CSM, leading to subsequent reoperation.