Two-year experience of radioactive seed localization versus wire localization for nonpalpable breast lesions at a large community hospital

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Introduction

- Several large academic institutions have shown radioactive seed localization (RSL) to be a safe and effective alternative to wire localization (WL) for localization of nonpalpable breast lesions. However, few community hospitals have adopted this technique. The surgical and oncologic superiority of RSL over WL is not well established.

- This study’s objective is to describe the initial two-year experience of RSL versus WL at a large community hospital.

Methods

- This study is a retrospective chart review using both the EMR and the hospital’s cancer registry to examine patients who underwent RSL or WL for breast-conserving surgery from November 1, 2013 to November 31, 2015.

- The data in this study were examined for difference in continuous variables using the two-sample t-test. Differences in categorical variables were assessed using Pearson’s Chi-square test or Fisher’s exact test.

Results

- Mean age was 58 yr (RSL) and 59 yr (WL).

- Final pathology, with respect to benign versus malignant, was similar between RSL and WL.

- For malignant lesions, the size, grade, stage, receptor status, lymph node status and final pathologic diagnosis were similar between RSL and WL groups (p>0.05).

Figure 1. Distribution of lesions

Table 1. Specimen weight (mean, g)

<table>
<thead>
<tr>
<th></th>
<th>RSL (n=187)</th>
<th>WL (n=109)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>All lesions</td>
<td>26.6</td>
<td>29.6</td>
<td>0.196</td>
</tr>
<tr>
<td>(n=94)</td>
<td>(n=60)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malignant lesions</td>
<td>36.3</td>
<td>35.9</td>
<td>0.904</td>
</tr>
<tr>
<td>(n=93)</td>
<td>(n=49)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benign lesions</td>
<td>16.7</td>
<td>21.8</td>
<td>0.016</td>
</tr>
</tbody>
</table>

Figure 2. Re-excision rate (RSL vs WL)

Figure 3. Operative time over the study period for Single RSL vs Single WL, malignant lesions only

Conclusions

- This is the largest single institution community-based study comparing RSL to WL for excision of nonpalpable breast lesions.

- RSL allows for excision of smaller specimens for benign lesions. There was no difference in size when evaluating malignant lesions.

- Margin re-excision rates for RSL and WL were similar.

- Malignant lesions required longer OR time with RSL (p=0.014). There was no difference in OR time when comparing RSL and WL for benign lesions (p=0.2). For RSL lesions, the mean OR time did not significantly change over the study period.

- According to our experience, we believe RSL to be a viable option in the community setting.

References