Abstract

Background: While sentinel node biopsy (SNB) is standard practice for determining the nodal status of a clinically node-negative patient with invasive breast cancer, there is debate over the number of sentinel lymph nodes (SLNs) necessary to accurately stage the axilla while also minimizing morbidity. The purpose of the study is to determine the importance of excising and evaluating all SLNs identified (using technetium guided lymphatic mapping and the 10% rule), regardless of their degree of radioactive tracer concentration. Specifically, we seek to determine how often metastasis is identified in a SLN that does not have the highest radioactivity count.

Methods: Since 2003, we have maintained a University of Vermont IRB approved database on all breast cancer surgery performed at Fletcher Allen Health Care. For those patients included in this study, a chart review was performed to gather the following additional information: 1) SLN 10 second radioactivity counts and, 2) individual nodal tumor status (H&E positive, micrometastasis, ITC only, or negative). Radioactivity counts were ranked (1=highest count, 2=second highest, etc) and then evaluated in relation to SLN tumor status.

Results: There were 136 SLN positive patients (H&E positive, micrometastasis, and ITC included) with procedure dates ranging from January 2003 to July 2009. Ninety eight patients had multiple radioactive SLN specimens biopsied with no previous history of ipsilateral breast cancer, surgical procedures, or neoadjuvant therapy. The median number of SLNs removed was 4 (range, 2-13) and the median number of positive SLNs was 1 (range, 1-6). With evaluation of the single hottest SLN, 81.8% (81/98) of node-positive patients were identified. This was increased to 91.8% (90/98) when evaluating the two hottest SLNs and 100% when the three hottest SLNs were evaluated. The hottest SLN was not the positive node in 17 out of 98 patients with multiple SLNs removed. Conclusion: These data...
stress the importance of removing and pathologically evaluating all SLNs identified using the 10% rule. Had identification or assessment been limited to only the most radioactive SLN, this could have resulted in inaccurate staging, and possibly a change in treatment, for 17% of the patients analyzed.