Preop Axillary US Useful in Early Breast Cancer

BY DOUG BRUNK
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ST. LOUIS — The overall diagnostic accuracy of preoperative axillary ultrasound for determining lymph node status in early-stage breast cancer patients was 73%, results from a single-center study have shown.

The method might have spared 14% of patients from having to undergo a sentinel lymph node biopsy, allowing them to proceed directly to axillary node dissection, Dr. Jonathan Cools-Lartigue reported during a poster session at the symposium.

Major Finding: The overall diagnostic accuracy of preoperative axillary ultrasound for determining lymph node status in early-stage breast cancer patients was 73%.

Disclosures: None was reported.

Although sentinel lymph node biopsy is considered the standard of care in the operative management of breast cancer, it comes with its share of drawbacks, said Dr. Cools-Lartigue, a first-year resident in the department of general surgery at McGill University Health Centre, Montreal. For example, having a falsely negative sentinel lymph node biopsy on frozen section "may result in having to subject the patient to a second procedure, and the costs associated with that. Ultrasound—particularly when combined with fine-needle aspiration—provides a potential opportunity to streamline an algorithm for care of patients."

For the study, he and his associates evaluated clinical, imaging, and laboratory data from 319 consecutive patients with early-stage breast cancer who underwent preoperative axillary ultrasound evaluation at McGill between 2005 and 2007. "All patients with primary breast cancer referred to our center routinely receive axillary ultrasound," Dr. Cools-Lartigue said. "We didn’t select patients based on the degree of disease we thought that they had. We took all comers."

The median age of the 319 patients was 58 years, 67% of patients had ductal disease, 80% were estrogen-receptor positive, 61% were progesterone-receptor positive, 11% were human epidermal growth factor receptor 2 (HER2/neu) positive, and 45% had positive axillary nodes.

The sensitivity and specificity values for any ultrasound abnormality in identifying nodal metastases were 54% and 89%, respectively, while the positive and negative predictive values of ultrasound in the diagnosis of nodal metastases were 80% and 70%, respectively. The overall accuracy was 73%.

The diagnostic accuracy improved with a higher number of positive lymph nodes (greater than 3 vs. fewer than 3) and a larger size of metastatic disease (greater than 2 mm vs. less than 2 mm). Certain clinical and pathologic factors were associated with having abnormal ultrasound findings, including the number of involved nodes, estrogen receptor and HER2/neu positivity, size of metastasis, presence of lymphovascular invasion, and tumor grade. "Those are interesting results," Dr. Cools-Lartigue commented. "I think they reflect the biology of the malignancy. More aggressive malignancies are likely to be associated with an abnormal ultrasound, compared [with] less aggressive malignancies."

A subset analysis of 75 patients who had undergone concomitant fine-needle aspiration revealed that 61% had nodal metastases, with a positive predictive value of 100%.

Fine-needle aspiration was more likely to be positive with increasing tumor size. It also had an accuracy of 80% when combined with ultrasound.

Dr. Cools-Lartigue acknowledged certain limitations of the study including its single-center design and that fact that it included patients with all types of early-stage breast cancer. "Because we looked at all comers, the sensitivity was lower than what has been seen in other studies."

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