

Examination of less-invasive surgical procedure to detect cancer in lymph nodes near breast

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Judy C. Boughey, M.D., Kelly K. Hunt, M.D., and colleagues for the Alliance for Clinical Trials in Oncology conducted a study to determine the false-negative rate of sentinel lymph node surgery in patients with node-positive breast cancer receiving chemotherapy before surgery. A false-negative is occurrence of negative test results in subjects known to have a disease for which an individual is being tested. The study, published by *JAMA*, is being released early online to coincide with its presentation at the American College of Surgeons 2013 Annual Clinical Congress.

Axillary (the armpit region) lymph node status is an important prognostic factor in breast cancer and is used to guide local, regional, and systemic treatment decisions. Accurate determination of axillary involvement after chemotherapy is important; however, removing all axillary nodes to assess for residual nodal [disease](#) exposes many [patients](#) to the potential side effects of [surgery](#) and, potentially, only a subset will benefit. To avoid the complications associated with axillary lymph node dissection (ALND), it is preferable to identify nodal disease with the less invasive [sentinel lymph node](#) (SLN) surgical procedure, which results in fewer side effects, according to background information in the article.

The American College of Surgeons Oncology Group (ACOSOG) Z1071 trial enrolled women from 136 institutions from July 2009 to June 2011 who had various stages of [breast cancer](#) and received neoadjuvant (before surgery) chemotherapy. Following chemotherapy, patients underwent both SLN surgery and ALND. The primary end point for the study was the false-negative rate of SLN surgery after chemotherapy in women who presented with cN1 disease (disease in movable axillary lymph nodes). The researchers evaluated the likelihood that the false-negative rate

in patients with 2 or more SLNs examined was greater than 10 percent, the rate expected for women undergoing SLN surgery who present with clinical node-negative (cNO) disease.

Seven hundred fifty-six women were enrolled in the study. Of 663 evaluable patients with cN1 disease, 649 underwent chemotherapy followed by both SLN surgery and ALND. The researchers found that the false-negative rate was 12.6 percent with SLN surgery and exceeded the prespecified threshold of 10 percent. "Given this [10 percent] threshold, changes in approach and patient selection that result in greater sensitivity would be necessary to support the use of SLN surgery as an alternative to ALND in this patient population."

"Decisions about using systemic therapy after neoadjuvant therapy are not dependent upon identifying residual cancer in [lymph nodes](#) when all the planned [chemotherapy](#) is given preoperatively to maximize the cancer response," write Monica Morrow, M.D., and Chau T. Dang, M.D., of Memorial Sloan-Kettering Cancer Center, New York, in an accompanying editorial.

"However, accurate detection of residual lymph node cancer may be important in prospective trials of novel agents in which post-neoadjuvant treatment decisions, including possible research protocol participation, may hinge on the detection of residual disease. When considering how much information can be extrapolated from an initial SLN biopsy, it is important to recognize that patients with residual cancer following neoadjuvant therapy have some level of resistance to systemic therapy. These patients might require more aggressive local therapy such as complete ALND or radiation therapy to the axilla. Because there is no information regarding long-term local cancer control or survival for patients initially presenting with

clinically node-positive disease who receive neoadjuvant therapy but have a 20 percent to 30 percent rate of residual [cancer](#) in the axilla following SLN biopsy, we do not believe that SLN biopsy, regardless of the number of SLNs removed, can be considered standard management for these patients."

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