# Preoperative Needle Breast Biopsies Can Lead To Improved Outcomes

Women suspected of having breast cancer now have more reasons to be diagnosed with a needle biopsy instead of a traditional open surgical biopsy. Besides avoiding the risks and discomfort of an open surgical procedure, needle biopsies can also lead to improved treatment outcomes according to findings from a new study published in the October issue of the *Journal of the American College of Surgeons*.

Breast cancer is the number one form of cancer diagnosed in women in the United States, according to the U.S. Centers for Disease Control and Prevention. In 2012, more than 226,000 women will be diagnosed, according to estimates from the National Cancer Institute. Findings from an open biopsy or needle biopsy can confirm whether a suspicious breast lesion is actually malignant.

An open biopsy typically involves a trip to the operating room, a full surgical incision, and some form of anesthesia. However, a percutaneous needle biopsy procedure allows physicians to locate the breast lesion without actually opening the breast. Instead, they use imaging techniques and extract a sample of the concerning tissue through a needle. This minimally invasive approach can be performed using a topical anesthetic and takes place in the office setting or radiology suite. There is less discomfort and quicker recovery time compared with open surgical biopsies.

Despite the less invasive nature of needle biopsy, “some physicians are still doing open biopsy, perhaps because of limited resources or lack of awareness. Needle biopsies require special instruments, techniques and skills that may not be available at all treatment sites,” explained Ted A. James, MD, FACS, associate professor of surgery at the University of Vermont College of Medicine and lead author of the study. The advantage of the needle biopsy approach is that women may avoid an operation if the results are benign, and can get the benefit of appropriate preoperative planning if cancer is detected.

“There are certainly some legitimate reasons to do an open biopsy, such as when the lesion is in a difficult position for the needle to reach. But the open approach should only be used for about 10 percent of cases, Dr. James estimates. “A needle biopsy is a more efficient, less invasive way to get the same diagnosis,” he said. Dr. James and colleagues investigated whether better patient outcomes could be added to the list of needle biopsy advantages. They analyzed data on 1,135 patients who had been diagnosed with breast cancer and treated at hospitals in Vermont between 1998 and 2006. Patient data came from the Vermont Breast Cancer Surveillance System (VBCSS), the Vermont Cancer Registry (VCR), and the Centers for Medicare and Medicaid Services (CMS) enrollment and claims data.

None of the patients had a previous history of breast cancer, and 62.8 percent were diagnosed after needle biopsies. Data analysis revealed that needle biopsy became more common over time. Between 1998 and 2000 about 48.7 percent of patients underwent needle biopsies. That figure jumped to 73.6 percent between 2004 and 2006. Results showed that patients who had an open biopsy were more likely to have positive margins than those who had a needle biopsy. This finding indicates that after surgeons removed the breast lesion, cancerous cells were still present along the edges of the specimen—in 37.4 percent of open surgical patients—requiring another operation.

This scenario was only true for 20.1 percent of patients diagnosed with needle biopsy. Because the primary goal of open biopsy is to diagnose breast cancer rather than treat it, patients with open biopsy were less likely to have adequate amounts of the tumor excised. They were also less likely to have their lymph nodes assessed. Therefore, the open biopsy approach also led to more re-excisions—additional operations to remove more malignant tissue, as well as additional operations to assess lymph nodes when indicated. A single operation was needed 76.4 percent of the time for needle biopsy patients, but only 44 percent of the time for open biopsy patients.

Age and education status had no bearing on which type of biopsy was performed, but the researchers did discover residential differences. Urban patients were more likely to have a needle biopsy than rural patients—70.6 percent compared with 57.5 percent, respectively. “Again that finding could have a lot to do with resources at some smaller hospitals,” Dr. James said. His team noticed that this gap was actually much narrower at the end of the study period. “That’s a very encouraging sign that things are moving in the right direction; however, there is still much room for improvement.”

Dr. James said the findings have implications for national healthcare policy, which has shifted toward declining reimbursement if patients are readmitted 30 days later for the same condition: “It’s really about quality, and trying to find ways to deliver better outcomes to our patients. It’s also only a matter of time before Medicare and Medicaid start looking at why patients at hospital A are going back for more re-excisions than patients at hospital B.”

The study is also a call to action for women to be more proactive in weighing their health care options. “Patients have to be active partners in their care,” he added. “I would recommend a woman with a suspicious breast lesion—who was told she needed to have an open biopsy—to ask, ‘why not a needle biopsy?’ If a needle biopsy is appropriate but just not available, it could simply mean being referred to a neighboring hospital or a colleague. But it starts with knowing there’s a better option,” he concluded.

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