

Microbubble ultrasound and breast biopsies

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Using "microbubbles" and ultrasound can mean more targeted breast biopsies for patients with early breast cancer, helping to determine treatment and possibly saving those patients from undergoing a second breast cancer surgery, a new study in shows.

Patients with early [breast cancer](#) undergo a sentinel lymph node biopsy to determine if their cancer has spread, said Dr. Ali Sever, lead author of the study. Ultrasound, on its own, can't distinguish the sentinel lymph node from other lymph nodes, Dr. Sever said. However, "our study found that microbubble contrast- enhanced ultrasound accurately identified the sentinel lymph node in 89% of the 80 patients in our study."

As many as 35% of patients who undergo sentinel lymph node excision biopsy will require additional surgery because cancer has spread," Dr. Sever said. Using microbubble contrast-enhanced ultrasound preoperatively means that the cancer and cancer spread can be removed during one operation.

Currently blue dye and radioisotopes are used to identify [sentinel lymph nodes](#) at the time of surgical excision. While this technique is accurate, there are side effects for some patients, including an allergic reaction. In addition, the disposal of the radioisotopes ([radioactive waste](#)) poses an issue.

Ultrasound is widely available and low cost, said Dr. Sever. "Microbubble enhancement is a real time examination which shows the bubbles trafficking through the breast lymphatics and into the sentinel lymph node. Now that we know that this technique can accurately identify the sentinel lymph node, we are looking at using this [imaging technology](#) to determine if it can be combined with less invasive biopsy techniques, avoiding the need for a surgical sentinel lymph node biopsy completely," she said.

The study was conducted at Maidstone Hospital in Maidstone, UK. Dr. Sever notes that the use of

[microbubbles](#) is restricted in the United States and is currently not approved for use with breast cancer patients.

More information: The study appears in the February issue of the *American Journal of Roentgenology*.

Provided by American College of Radiology

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