
RSNA Press Release

Ultrasound Proves Safe Alternative to Biopsy in Some Breast Masses

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Media Contacts:

RSNA Media Relations: (630) 590-7762

Maureen Morley
(630) 590-7754
mmorley@rsna.org

Linda Brooks
1-630-590-7738
lbrooks@rsna.org

OAK BROOK, Ill. — Researchers have reported that breast masses shown on ultrasound that are diagnosed as "probably benign" can be safely managed with imaging follow-up rather than biopsy, according to a study appearing in the July issue of *Radiology*.

"These findings indicate that ultrasound follow-up can spare women from unnecessary, invasive biopsies," said Oswald Graf, M.D., from the Department of Radiology, Ambulatory Care Center in Steyr, Austria.

The American Cancer Society (ACS) estimates that 212,920 women will be diagnosed with breast cancer in the United States this year. Early detection through screening is the best way to combat cancer at its early, most treatable stage. While mammography is the standard breast cancer screening exam, the sensitivity of mammography for identifying breast cancer decreases in women with dense breast tissue. Some studies have shown that ultrasound may provide useful information in detecting cancer in women with dense breasts. However, screening with ultrasound also identifies a large number of breast lesions that are suspicious but may or may not be cancerous. Often, these masses are recommended for biopsy. ACS reports that 80 percent of breast lesions biopsied are found to be benign.

According to recently introduced Breast Imaging Reporting and Data System (BI-RADS) guidelines for ultrasound, a solid mass with circumscribed (confined) margins, oval shape and parallel orientation can be classified as probably benign (category 3). Dr. Graf's study is the first to report outcomes from ultrasound follow-up of masses that were classified as probably benign at initial ultrasound.

"Our study shows that following a lesion classified in the BI-RADS lexicon as category 3 is a safe alternative to immediate biopsy," Dr. Graf said. "But it is essential that lesions strictly meet these criteria."

At A Glance

- Women with breast masses classified as probably benign can be periodically examined with ultrasound to avoid biopsy.
- The American Cancer Society reports that 80 percent of breast lesions biopsied are found to be benign.
- In this study, only one of 445 masses was diagnosed as cancer during follow-up.

The researchers retrospectively studied 409 women with 448 nonpalpable masses that were partially or completely obscured at mammography by dense breast tissue and were classified as probably benign at ultrasound. After initial imaging with mammography and ultrasound, follow-up was performed in 445 masses. The other three masses were biopsied and shown to be benign.

At follow-up every six months over two to five years, 442 of the 445 masses remained stable. Two masses increased but were found benign at biopsy, and one mass became palpable, and cancer was diagnosed at biopsy. The findings indicate an overall negative predictive value of 99.8 percent. In other words, only one in 445 masses (0.2 percent) developed into cancer. The results indicate that routine follow-up with ultrasound is a safe alternative to biopsy in cases where the breast lesion is classified as probably benign.

"More studies are needed to define the role of ultrasound in breast cancer screening," Dr. Graf said. "However, these findings suggest that the negative effects of incidental findings may be limited principally to patient anxiety and the cost of follow-up imaging, as opposed to conducting a large number of benign biopsies."

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Journal attribution required.

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"Probably Benign Breast Masses at US: Is Follow-up an Acceptable Alternative to Biopsy?" Co-authors of the paper are Thomas H. Helbich, M.D., Gottfried Hopf, M.D., Claudia Graf, Ph.D., and Edward Sickles, M.D.