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***FAST** TRACK*

In this study, sensitivity among radiologists for detecting breast cancer ranged from 27% to 100%; false positives, from 0 to 16%

Do radiologists vary widely in how they interpret diagnostic mammograms?

Yes. This retrospective study found considerable variation among 123 radiologists who interpreted 35,895 diagnostic mammograms between 1996 and 2003. The mammograms were performed to assess a clinical sign or symptom of breast cancer—not to evaluate abnormal or equivocal imaging. Sensitivity ranged from 27% to 100% (median: 79%), and the false-positive rate ranged from 0 to 16% (median: 4.3%). Sensitivity varied substantially even among radiologists who had similar false-positive rates.

Neither the total number of mammography exams interpreted over the preceding year nor the percentage of mammograms that were diagnostic affected the radiologists' performance.

EXPERT COMMENTARY

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Previous studies have suggested high variability among radiologists who interpret diagnostic mammograms. In this study, funded by the National Cancer Institute, mammograms were considered positive when they were interpreted as suspicious or highly suggestive of cancer (BI-RADS 4 or 5), or when biopsy or surgical consultation was recommended. All others were considered negative. Breast cancer was confirmed if the woman was diagnosed with invasive or in situ breast cancer within 1 year of the diagnostic mammogram. Sensitivity was defined as the percentage of positive examinations among women diagnosed with breast cancer, and the false-positive rate as the percentage of positive examinations among women without a breast cancer diagnosis.

Diagnostic mammograms are more likely to be positive

The prevalence of breast cancer is 10 times higher in women undergoing diagnostic mammography than it is in women undergoing screening mammography. That makes the high variability in diagnostic interpretation reported in this study especially troubling.

High sensitivity expedites the diagnosis of breast cancer, but also tends to increase the rate of false positives, which lead to invasive procedures and considerable anxiety among women who do not have breast cancer. Therefore, it is preferable to achieve high sensitivity without excessive numbers of false positives.

In this study, radiologists practicing at an academic center were more accurate at breast cancer diagnosis than their nonacademic peers, but this improvement was of borderline statistical significance—and few of the radiologists studied practiced in an academic setting. Moreover, women who get diagnostic mammograms at academic centers may differ from other women. In the US, most mammograms are read by general radiologists.

Alas, no concrete suggestions

This study highlights considerable variability among radiologists interpreting diagnostic mammograms, but does not specify how these mammograms can be interpreted more consistently. ObGyns should keep up-to-date on training and quality-control measures that may influence how radiologists interpret mammograms and other breast imaging.