New study confirms higher cancer rate in women with dense breasts
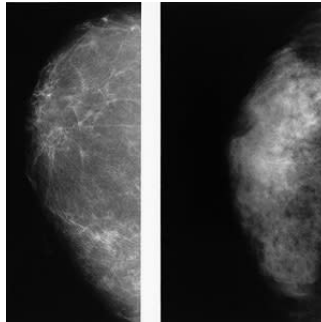

Women with mammographically dense breast tissue have higher recall and biopsy rates, as well as increased odds of screen-detected and interval breast cancer, according to new research published online in the journal Radiology. Researchers used automated software to help classify mammographic density in 107,949 women ages 50 to 69 from BreastScreen Norway, a national programme that offers women screening every two years.

The newly published results supports automated measurements as a future standard to ensure objective breast density classification for breast cancer screening, the researchers point out.

Based on previous studies, women with mammographically dense breasts face a higher risk of breast cancer and missed cancers than those with non-dense breasts, partly because the superimposition of dense breast tissue on mammograms leads to a masking effect, causing some cancers to go undetected. Of note, the bulk of those studies relied on subjective density assessments – most commonly, the radiologist's subjective interpretation using the American College of Radiology's Breast Imaging Reporting and Data System (BI-RADS). This approach introduces potential mammogram reader variability into density categorisation, says the study's principal investigator, Solveig Hofvind, PhD, from the Cancer Registry of Norway in Oslo.

For the new study, Dr. Hofvind and colleagues looked at a total of 307,015 digital screening examinations conducted under BreastScreen Norway between 2007 and 2015. The automated software used in the study helped the researchers to classify breasts as dense in 28 percent of the screening examinations. Rates of screen-detected cancer were 6.7 per 1,000 examinations for women with dense breast tissue and 5.5 for women with non-dense breasts. Interval breast cancer, or breast cancer detected between screenings – usually by palpation – was 2.8 per 1,000 in the dense breast tissue group and 1.2 for women with non-dense tissue.

Mammograms show volumetric breast density classified as Volpara density grade 1, 2, 3, and 4 with automated volumetric breast density measurement.

The recall rate, or rate at which women are called back for additional examination based on suspicious mammographic findings, was 3.6 percent for women with dense breasts, compared with 2.7 percent in women with non-dense breasts. The biopsy rate of 1.4 percent in the dense breasts group was higher than the 1.1 percent rate for women in the non-dense category.

Mammographic sensitivity for detecting breast cancer was only 71 percent for women with dense breasts, compared to 82 percent for women with non-dense breasts. Cancers detected at screening were more advanced among women in the dense breast tissue group, the researchers noted. In addition, average tumour diameter for screen-detected cancers was 16.6 millimetres (mm) in the dense breasts group, compared to 15.1 mm for the non-dense group. Lymph-node-positive disease was found in 24 percent of women with dense breasts, compared with 18 percent for women with non-dense breasts.

The results add another piece to the puzzle of screening protocols for women with dense breasts. Dr. Hofvind noted that more than half of states in the U.S. have enacted breast density legislation, with some states requiring that women be informed about their breast density or that additional imaging could be beneficial. However, supplemental screening for women with dense breasts currently is not recommended by any of the major healthcare societies or organisations, and more research is needed before widespread changes are made.

In an accompanying editorial, "Machine Detection of High Breast Density: Worse Outcomes for Our Patients," Liane E. Philpotts, MD, FACR, from Yale School of Medicine writes, "This study is important for two main reasons: (1) the validation that automated means of density classification can correctly identify a percentage of women with dense tissue, and (2) women with dense tissue have poorer performance of screening mammography. It lends support to the density notification movement along with redoubling efforts towards optimising supplemental screening methods."

She added that automated volumetric determination could better standardise density measurements and provide greater confidence that women with dense breast tissue could consistently be identified.

"Breast density is here to stay, and it is in everyone's best interest to embrace understanding and optimisation of breast imaging practice to best address the needs of women with dense tissue," she concludes.

Source: Radiological Society of North America

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