

A NEW BREAKTHROUGH IN WOMEN'S IMAGING

A recent study from the Mayo Clinic describes a major breakthrough in women's imaging. The Mayo Clinic has a new technology called Molecular Breast Imaging (MBI). Their results suggest it can be a valuable tool in detecting clinically significant cancers that cannot be seen on screening mammograms in women with dense breasts.

As discussed in previous articles, about 40-50% of women are found to have dense breasts on mammographic screening. Normal breasts are composed of both fatty tissue and dense tissue. Breasts that are composed of more than 50% fatty tissue are classified as fatty breasts and breasts that are composed of more than 50% dense tissue are classified as dense breasts.

Many women are under the impression their breasts are dense because they are lumpy on self-exam. The density of the breast, however, can only be determined by mammograms and not self-exam.

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Dense breast tissue appears white on mammograms. Most small cancers also show up as white spots. Thus, they blend into the white background. Detecting a small cancer in women with dense breasts has been compared to the challenge of finding a snowman in a snowstorm.

When it comes to early breast cancer detection, women with predominately fatty patterns on the mammogram are the lucky ones. Fatty breasts have a predominately black background making it relatively easy to detect small white cancers against a black background.

Women with predominately dense breast tissue are also at an increased risk for developing breast cancer. Thus, they are hit with a double whammy. They are at greater risk for developing breast cancer and their cancers are more difficult to detect.

Technology is now available to detect many, if not most, of small breast cancers not detected on screening mammograms. Recent legislation requires physicians to discuss the issue of breast density with their patients. Physicians are required by law to inform women with dense breasts that the mammogram is not as effective as it is for women with fatty breasts.

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The ordering physicians are also required to inform women with dense breasts about new imaging techniques that can detect small cancers missed on the mammogram. This law (SB 1538) has now been on the books for two years, but the vast majority of women with dense breasts are not being informed of the limitations of mammograms or potentially lifesaving technologies now available to detect small cancers not seen on the mammogram.

Until now there have been two well-established technologies for detecting these small cancers. One technology is the whole breast screening ultrasound. We now have automated equipment that makes this a practical screening for average risk women with dense breasts. Currently, insurance companies do not cover the cost of ultrasound screening. The cost can range from \$195.00 dollars to over \$ 750.00 dollars depending on the facility in which it is performed.

For women at high risk for breast cancer, we recommend annual screening with MRI. MRI is the most effective test currently available for detecting small cancers. Most insurance companies will cover the cost of the MRI if it can be documented that a woman has a 20% or higher lifetime risk of developing breast cancer (see last month's article on our risk assessment program.)

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If it were not for the issue of cost we would recommend a yearly MRI on all women with dense breasts because of its proven ability to detect approximately 99% of cancers not seen on mammograms.

The Mayo Clinic study describes a new technology with approximately that same ability to detect small cancers as the MRI, but at a much lower cost. This new technology (MBI) requires the injection of a radioactive material that is concentrated in breast cancers. The cancers light up on the screen, making them easy to detect even when they are very small.

The technology has been around for a long time, but the researchers from the Mayo clinic were able to design equipment that could detect small cancers with lower doses of radiation. The amount of radiation that is required to perform molecular breast (MBI) imaging is still 2-3 times higher than that for the standard mammogram.

A recent study from the Mayo Clinic shows promising results. The study was done on 1,585 women with dense breasts who received both a mammogram and a MBI exam. A total of 21 breast cancers were detected. 14 of the 21 cancers were missed on the mammograms and seen only on MBI. 11 of the 14 cancers detected on MBI had negative lymph nodes. The average size of the cancers seen on MBI was a half an inch in diameter.

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The advantages of MBI is that it is approximately as accurate as the MRI, but much easier for the patient to tolerate. The advantage over screening ultrasound is it has fewer call-back for additional views and fewer false positive biopsies.

The new MBI technology has been approved by the FDA, but insurance companies have not yet agreed to pay for them. There is also the issue of additional radiation. Hopefully, in the near future it will become a covered service. It is also likely that progress will be made in reducing levels of radiation exposure.

If you have questions about this new technology, contact us at:
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