3-D Mammography: What Every Woman Should Know

There is an ongoing effort to identify improved technologies for the early detection of breast cancer. It is well recognized that the standard mammography has a miss rate of detecting early cancers that averages approximately 15%, and the miss rate is even higher for women with dense breasts. Thus, it is not surprising that physicians and researchers are looking for more effective technologies for the early detection of breast cancer.

One new technology that has entered the marketplace is tomosysnthesis or 3-D mammography. Rather than providing the two basic views of each breast, as in done in standard mammographic screening, 3-D imaging takes multiple views (or slices) that provide the radiologist with more detailed information. It is, of course, hoped that this added information will lead to a lower rate of missed cancers and the detection of smaller cancers with a more favorable prognosis.

In reviewing the limited data comparing tomosynthesis to the standard mammograms it is clear that, at present, we have insufficient information to make definitive conclusions. However, there are some early studies that suggest that 3-D may be more effective than standard mammography to differentiate between benign and malignant lesions. If this proves to be the case, some unnecessary biopsies could be avoided in the future. There are also recent reports suggesting that tomosynthesis may lower the rate of callbacks for additional diagnostic studies, which is both expensive and anxiety producing. The information to date on this potential benefit is also limited.

There are outer issues that must be addressed before this new technology becomes main-stream. Patients must be informed that the radiation dose is doubled, since both a standard 2 view mammogram and a 3-D mammogram are performed at same visit. Cost is an issue, but there is little available information on what the patient will be charged for the study.

The major concern, of course, is whether or not the 3-D mammogram is more effective in the early detection of breast cancers. A recent reported by Dr. Hendrik Teertstra of the Netherlands Cancer Institute in Amsterdam presented research suggesting that the ability to detect malignant lesions was not significantly different for tomosynthesis and standard mammographic screening. A second recent study from Cambridge England, comparing tomosysnthesis to standard screening, found no evidence of improved rates of early breast cancer detection among experienced mammographers, but did find a benefit in early detection among less experienced mammographers.

My own take on this issue is that more study is needed. We already have a technology that is proven effective in the early detection of breast cancer in high risk women and women with dense breasts. The MRI has the advantage of not using radiation to obtain its images. The limiting factor in MRI screening is cost. Although the cost for Breast MRI at hospitals is in the range of several thousand dollars, outpatient screening centers are offering it for a much lower price. In fact, for less than the cost of a daily latte for one year, women can have a test that has been proven to be more effective in the early detection of breast cancer. Women who choose to have a breast MRI in combination with a mammogram and a physical exam will receive two major potential benefits. First, if her results are normal, a woman will have the peace of mind of knowing that she has received the most effective combination of imaging studies currently available and they showed no evidence of breast cancer.* If, however, a cancer is found on MRI that did not show up on her mammogram, a woman would know that she made a potentially life-saving decision when proceeding forward with an MRI.

If you have any questions on breast care or risk reduction, feel free to Ask The Doctor or contact us.