

Physician Insights

New Breast Ultrasound Screening Equipment at Mercy Radiology Finds Breast Cancer in a Patient With Dense Breasts Who Had a Recent Normal Mammogram.

Multiple studies of screening mammography over the last 30 years from multiple continents demonstrate it lowers the mortality from breast cancer by about a third in screened women in comparison to women not getting regular mammograms.

Studies also demonstrate the ability of screening mammography to find early invasive stage 1 cancers depends on a woman's breast density, or percentage of fibroglandular breast tissue in comparison to fatty breast tissue.

It may be able to detect 90% of early cancers in women with predominately fatty breasts, or less than 25% fibroglandular tissue, but may detect only 50-60% of early cancers in women with extremely dense breasts, or greater than 90% fibroglandular tissue.

Since about 40% of women have dense breasts, meaning greater than 50% of the breast tissue is glandular in comparison to fat, the lower sensitivity of mammography in these women is a significant problem affected a large percentage of the screened population.

Adding to the significance about 70% of breast cancer occurs in women with dense breasts.

In fact, the risk of breast cancer in a women with extremely dense breasts in comparison to a women with fatty breasts is elevated by 4-6 fold. This means these women have a similar increased risk of developing breast cancer as the increased risk of a women with a 1st degree relative diagnosed with breast cancer.

In summary, women with dense breasts are common, they account for the majority of breast cancers, they are at higher risk of developing breast cancers, and mammography is less able to diagnose their cancers early.

At Mercy Radiology we understand the statistics and the limitations of screening mammography.

However, we do not accept that women with dense breasts will have their breast cancers detected at later stages resulting in more aggressive surgery and therapy and a lower chance of survival.

Multiple studies using physician-performed, hand-held ultrasound have demonstrated that early invasive breast cancers can be detected on ultrasound that were not seen on mammography. In these studies the number of cancers detected with ultrasound nearly doubles the number found with mammography alone.

However, for many reasons physician performed screening ultrasound is impractical.

Fortunately, technology is available that can acquire ultrasound images of the entire breasts in asymptomatic women with dense breasts and the images acquired can be reviewed by a radiologist trained in breast imaging.

Using this ultrasound technology a recent study of over 6000 examinations in women with dense breasts resulted in mammography detecting 17 of 39 cancers, while adding this technology 35 of the 39 cancers were identified, an improvement of 100%, which is similar to the studies using physician-performed hand-held ultrasound.¹

We recently purchased this technology called automated whole breast ultrasound (AWBUS) from a company called Sonocine.

To date 70 women with dense breasts and a recent normal mammogram have chosen to have this study performed.

Last week using this equipment we found a 1 cm invasive lobular cancer in a woman with dense breasts who had a normal mammogram less than 2 months earlier.

Of note, invasive lobular cancer is often diagnosed late using mammography. We would anticipate this patient being a candidate for breast conservation therapy and likely being cured from her cancer.

We recommend consideration of automated whole breast ultrasound as an adjunct screening examination in asymptomatic women with dense breasts in addition to screening mammography, not as a replacement for mammography.

The study takes about a half hour for the patient, is painless, requires no breast compression and there is no radiation.

This automated whole breast ultrasound (AWBUS) is available at our Mercy Imaging Women's Center at 6660 Coyle Avenue, Ste. 360, Carmichael, CA 95608, Phone (916) 536-3060, Fax (916) 536-3061.

Please contact Daniel Herron, M.D., Director of Women's Imaging at Daniel.Herron@DignityHealth.org, if you have any questions, concerns or suggestions.

1 Reference: Kelly K. Breast Cancer Detection Using Automated Whole Breast Ultrasound and Mammography in Radiologic Dense Breasts Eur Radiology 2010 March;20(3):734-741.