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Advances in Breast Imaging

By: Annamarie Collier, MD
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Breast cancer is the second leading cause of cancer deaths in women—killing almost 40,000 in this country each year. Translated into odds, that means every American woman has a one in eight chance of developing breast cancer during her lifetime. Not a very pretty picture, is it? But consider this—more than two million breast cancer survivors are alive in the United States today, and research has proven that early detection was a key to their successful treatment and survival.

While mammograms have long been credited as an important tool in the early discovery of breast cancers, digital mammography makes early detection more likely. Breast MRI—another advancement in breast imaging—is a powerful diagnostic tool that helps doctors accurately diagnose and evaluate breast cancers.

Digital Mammography

Digital mammography is a system where x-ray film is replaced by solid state detectors that convert x-rays into electrical signals. The electrical signals produce images of the breast which can be seen on a computer screen.

From a patient's point of view, digital and film-based mammography are very similar. Both involve x-rays and compression of the breasts, but digital uses less radiation and it provides better image storage and transmission—they can be stored and sent electronically. The software used to interpret digital mammograms allows radiologists to magnify the images and change the contrast. That reduces the call-back rate, which saves time and minimizes a patient's exposure to x-rays.

One recent study, the Digital Mammographic Imaging Screening Trial (DMIST), showed digital mammography is significantly better than film for screening women under 50. It's also better for women with dense breasts, and those who are perimenopausal or premenopausal.

Breast MRI

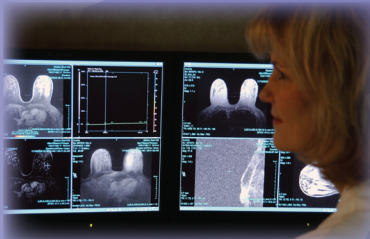
Breast MRI uses magnetic imaging to look at the breasts. It is a non-invasive study that produces hundreds of images, and no radiation is involved. A contrast agent is injected into a vein during the study to increase the brightness of cancers. The patient lies on her stomach with both breasts hanging freely into a receiver called a breast coil. The table advances into



Technologist at Imaging Workstation



Breast MRI



MRI Images



Dr. Collier Analyzing Breast Images



Annamarie Collier, MD

the MRI tube and the computer acquires images. The study takes about 35 to 40 minutes.

On the down side, an MRI is much more expensive than a mammogram—about \$1,000 compared to \$100—and some patients who are claustrophobic have a difficult time tolerating even a few minutes in the enclosed tube. While MRI is very sensitive in picking up breast cancers, it is not as good at imaging calcifications—tiny calcium deposits that can indicate early stage breast cancers. Also, because MRI is not as specific as mammography, it can sometimes lead to false positives.

To be most effective, MRI should be used to gain more information about a breast abnormality that was found on physical exam, mammography or ultrasound. It is a powerful diagnostic tool in new cases of breast cancer for evaluating the extent of disease and looking for additional sites of cancer. Doctors also have found breast MRI to be very useful in examining women with very dense breasts and those with breast implants, as well as women who are at high risk for breast cancer.

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Annamarie Collier, MD, graduated from medical school at UNC Chapel Hill and completed her fellowship training in body imaging at Georgetown University. She is a radiologist at Gaston Radiology and specializes in women's imaging and mammography.

Photos courtesy:
LORAD (Selenia Full Field Digital Mammography)



Introducing Our New Breast Health Navigator; Donna W. Neil RNC

There is a new resource for women in Gaston County. CaroMont Cancer Center, and the Women's Imaging Center at Summit Crossing Place of CaroMont Health, are pleased to announce a new service for women who experience an abnormal mammogram and have questions they need answered right away. Through a generous grant from the Charlotte Affiliate of the Susan G. Komen For The Cure, we can offer patients our Breast Health Navigator to ease a woman's confusion and fears of any subsequent testing procedures and prescribed treatments when she receives abnormal results from her mammogram.

Donna Neil is a registered nurse with 20 years of experience, a 3 year breast cancer survivor, and a Breast Health Navigator. Explains Donna, "My involvement in patient care begins after a patient has an abnormal mammogram or a new breast cancer diagnosis. I am there to help guide them along the way to a healthy recovery."

Donna is also a friend who provides cutting edge nursing care. "So many women who face breast cancer need that person who can take the time to listen and communicate with them throughout their course of treatment from biopsy and surgery

to chemotherapy and radiation. My plan is to be that person who can give one on one emotional support, fulfill a woman's educational needs and be a familiar face to a breast cancer patient throughout her journey," offers Mrs. Neil.

The Breast Health Navigator is a position that works together with the entire medical team of Gaston county, (surgeons, oncologists, radiologists, primary care physicians, nursing staff, hospital staff, counselors and others) to provide a needed resource to help patients and their families navigate through it all. To reach Donna for an appointment, please call 704-671-7725.

- Says Donna Neil, "I would like to tell you five things to tell your friends about breast cancer:
- All women can get breast cancer - even those who have no family history.
- The two most important factors for breast cancer are being a woman and growing older.
- Women diagnosed with early breast cancer, when the cancer is small and has not spread, have a high chance of surviving it. Mammograms are the best way to find breast cancer early.



Patient Mammography



Get one every year starting at age 40. If you notice any breast changes, tell your doctor without delay.

- You can help reduce your chances of developing breast cancer by engaging in regular physical activity, maintaining a healthy weight and limiting alcohol intake.

Through early detection and improved treatments, more women than ever are surviving breast cancer.

Source: American Cancer Society

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