



MOLECULAR BREAST IMAGING

by Lisa J. Schneider, MD

Molecular breast imaging (MBI), also commonly known as breast specific gamma imaging, is a nuclear medicine imaging technique that can detect breast cancer. While mammography and ultrasound rely on the detection of cancer by structure, shape or anatomy, MBI relies on function or the physiology of tumor cells to detect cancer. A small amount of the radioactive tracing agent, Technetium-99 meta (Tc-99m), is injected into one of the patient's veins. The Tc-99m binds to the inside of tumor cells. A special camera is then used to take pictures of the breast. Due to the increased metabolic activity in the cancer cells, the tracer will concentrate at higher levels in the cancerous cells than it would in normal cells, which will be conspicuous on the MBI images.

For the entire MBI exam, the patient is seated with her breasts positioned as they would be for a mammogram but with minimal compression. Four views are taken – two of each breast. Occasionally an additional image of each armpit is obtained, if needed. One hour will be scheduled for the entire process, and the patient can read a book or listen to music to relax during this time. The actual imaging takes approximately 30 minutes. The test is ideally done on days 7-11 of the menstrual cycle in premenopausal women because of the effect estrogen has on breasts.

Tests show that MBI has a high sensitivity. It has a 93 percent ability to detect disease and an 87 percent ability to identify disease. It is not a replacement for yearly screening mammograms but can help with diagnosis when an abnormality is suspected. MBI is also used in problem-solving situations such as women who have many suspicious lesions or when a mass is seen after surgery or chemotherapy. If a patient cannot have magnetic resonance imaging (MRI) because she has a pacemaker or is unable to lie flat on her stomach, MBI is an alternative test. MBI may be recommended to complement mammography in women who have very dense breast tissue or breast implants, or who are at high risk for developing breast cancer. MBI can be used for women with recently diagnosed breast cancer to help stage their disease prior to potential breast conservation surgery.

Physicians and nurses at the Piper Breast Center are readily available for consultation in determining if a patient is a candidate for MBI. MBI will be available at the Piper Breast Center soon.

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The Communiqué is going green!

In order to serve our readers more efficiently and make better use of our resources, this newsletter is converting to electronic format only with our May issue. If you would like to continue to receive *Communiqué* by e-mail, please go to allina.com/communique to subscribe.

DID YOU KNOW?

Piper Breast Center is in the process of planning new and expanded space on the fourth floor of the Piper Building and will be ready for patients and visitors in September. Piper Breast Center physicians, staff and volunteers look forward to a grand opening celebration!



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NEW BRCA 1 AND 2 RESOURCE GROUP IS OFFERED

by Shari Baldinger, MS, CGC

The Piper Breast Center established a high risk breast cancer clinic in February 2008 to facilitate the appropriate care for women who face a uniquely high risk for breast cancer.

The clinic provides risk assessment; individual, specialized management plans; and recommendations for additional services, including genetic counseling and/or testing, if indicated. A small proportion of the patients who are followed in the high risk clinic have an inherited risk for breast and ovarian cancer. This is because of mutations in one of two genes – BRCA 1 and 2. Carrying such a mutation suggests a significant risk for breast, ovarian and other cancers for both men and women.

The results of genetic testing can affect family dynamics, and the emotions surrounding this type of testing can be very powerful. Although difficult choices need to be made, the information can also be empowering.

With the input of a patient focus group, the Virginia Piper Cancer Institute's Piper Breast Center has developed a BRCA 1 and 2 Resource Group for individuals and families who have such mutations. There will be two meetings each quarter. The first will be an educational meeting to keep participating families updated on the most current information. The second will be a support program to help with the psychosocial/emotional issues that are commonly encountered by those who carry this genetic risk.

The first educational meeting was titled "Highlights from the Third International Symposium for Hereditary Breast and Ovarian Cancer Syndrome." The support meeting that followed was the "Emotional Impact of Having a BRCA1 or BRCA2 Mutation." For information about the group or a schedule of the upcoming meetings that will convene in Fall 2010, call 612-863-1093.

NEW PROGRAM PROMOTES BETTER HEALTH THROUGH MOVEMENT

The Virginia Piper Cancer Institute, in partnership with the Penny George Institute for Health and Healing's LiveWell Fitness Center and the Sister Kenny® Rehabilitation Institute, has begun offering a new program for patients diagnosed with cancer.

The Healthy-Steps™ Program uses therapeutic dance and movement exercises to promote better health. The program is based on the Lebed Method which is designed for individuals during and after cancer treatment.

Participants in the Healthy-Steps program should come prepared to

have some fun. This program is a great way to regain and maintain range of motion, improve stamina, reduce the risk of lymphedema and rebalance the body both physically and emotionally.

The next Healthy-Steps session begins June 2, 2010. The class meets for an hour each week for six weeks. Cost for participation is \$79 for the six-week series. For more information or to register, please contact the LiveWell Fitness Center at 612-863-5178.

WHAT DOES ATYPIA MEAN IN A BREAST BIOPSY?

by Tamera Lillemoe, MD

Breast tissue is made up of stromal cells (that form the supporting tissues of the breast) and epithelial cells (which line the ducts that make milk and carry it to the nipple in a lactating female). Pathologists (doctors who analyze changes in tissue caused by disease) use the term "atypia" for the microscopic findings in the epithelium (lining cells) of breast tissue. Because most cancers come from the epithelial cells, pathologists always look for any pre-malignant changes or atypia, when they use a microscope to examine breast tissue that has been removed during a biopsy.

Different types of atypia can be identified in breast cells and may correlate with different implications for a patient.

Atypical ductal hyperplasia (ADH) refers to atypia in the epithelium of breast ducts. ADH identified in a breast biopsy may warrant an additional surgical procedure to exclude the possibility of ductal carcinoma in situ (DCIS). DCIS is the earliest form of breast cancer and is completely curable if properly treated.

Atypical lobular hyperplasia (ALH) and lobular carcinoma in situ (LCIS) are atypical cellular changes in the epithelium or lining cells of breast lobules, the milk-forming cells.

Patients who have a diagnosis of ADH, ALH or LCIS have an increased risk of developing breast cancer. These patients should be closely followed with clinical breast exams and radiographic studies. Their physicians may also recommend an anti-estrogen drug to decrease the risk of developing breast cancer. These patients may also be followed in the High Risk Clinic at the Piper Breast Center.

There are other less common types of breast atypia. Their possible associated risk of developing breast cancer is not known at the present time.

In summary, the word atypia is used to describe a spectrum of changes seen under the microscope. It is the pathologist's job to correctly identify and classify the various types of atypia so the patient is treated appropriately.