

Breast MRI in the early detection of breast cancer

Submitted by Gail Shaw Wright, MD, FACP, FCCP

Among women with an inherited predisposition to breast cancer due to the BRCA1 or BRCA2 genes, 50% will develop breast cancer before the age of 50. Mammography has helped reduce mortality rates from breast cancer, but women between the ages 40 and 49 have denser breasts than postmenopausal women, and the sensitivity of mammography decreases with increased density of breast tissue.

For these patients, breast MRI may be an effective tool in early detection.

The July 29, 2004 *New England Journal of Medicine* reported on a trial conducted in the Netherlands that examined breast magnetic resonance imaging (MRI) in a population of 1,909 women with increased risk for breast cancer based on familial or genetic predisposition. The mean age was 40 years, and 75% of the women were premenopausal.

Documented mutations in the BRCA1 or BRCA2 genes were present in 358 participants.

From November 1, 1999 to October 1, 2003, fifty-one malignant tumors were detected, during a median follow-up of 2.9 years. Overall, MRI found 32 breast cancers, 22 of which were not visible on mammography.

For invasive breast cancers, the sensitivity of MRI was 79.5% versus 33.3% for mammography. Mammography was better for detecting carcinoma *in situ* with a sensitivity of 83% compared with 17% for MRI.

This report demonstrates the increased sensitivity of breast MRI in the early detection of breast cancer in women with increased risk based on familial or genetic predisposition to breast cancer. Breast MRI does not replace clinical breast examination or mammography, but it is an important diagnostic tool in evaluating breast abnormalities, virtually uninfluenced by breast density. **FHCN**



Gail Shaw Wright, MD, FACP, FCCP, is Board Certified in Internal Medicine and Medical Oncology by the American Board of Internal Medicine. She completed her undergraduate studies, graduating with Highest Honors, from the University of North Carolina (UNC) at Chapel Hill, where she also earned her Medical Degree and served her internship. She completed her Internal Medicine Residency at Duke University Medical Center, Durham, NC, and completed subspecialty Fellowship training in Oncology at the National Cancer Institute in Bethesda, MD. Dr. Wright has served as Program Leader for Cancer Prevention and Cancer Screening at the H. Lee Moffitt Cancer Center and Research Institute in Tampa, FL, where she was also a member of the Thoracic Oncology Program.

Managing breast cancer after breast conserving surgery in older women

Breast conserving surgery (lumpectomy) is traditionally followed by whole breast radiation therapy, and this approach has offered many women with breast cancer the option of keeping their breast.

Now, another option may make it possible for women to select breast conserving therapy *without* breast irradiation.

In the September 2, 2004 *New England Journal of Medicine*, two trials were reported comparing breast conserving surgery plus the drug *tamoxifen* with or without radiotherapy.

One trial was conducted in the United States with 636 women age 70 and older. Some received tamoxifen alone, others received it in conjunction with a standard course of radiation therapy.

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There was no statistical difference between the two groups in rates of mastectomy for local recurrence, distant metastases, or five-year survival (87% in the tamoxifen plus radiation group vs 86% in the tamoxifen only group). There was a significant difference in the rate of local or regional recurrence at five years (1% in the tamoxifen-plus-radiation group versus 4% in the tamoxifen-only group).

A Canadian trial involved 769 women age 50 and older. These women had breast-conserving surgery for breast cancers 5 cm or less in size, with no spread to axillary lymph nodes.

This study, too, showed no significant difference in the rates of distant relapse or overall survival. It did show a significant difference in the rate of local relapse at five years with 7.7% of the tamoxifen-only group experiencing relapse in the breast compared to 0.6% in the group with tamoxifen-plus-radiation. There were also differences in the five-year disease-free survival rates: 84% in the tamoxifen-only group versus 91% in the tamoxifen-plus-radiation group.

These trials indicate that for some older women with small, estrogen-receptor-positive breast cancer, lumpectomy plus adjuvant tamoxifen alone may be a reasonable choice of treatment.

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The oncologists at Florida Cancer Institute welcome questions regarding the newest advances in cancer care. For further information, call the Institute, located at 5334 Aspen Street in New Port Richey, (727) 842-8411; or the Institute, located at 13906 Lakeshore Blvd., Suite 330, in Hudson, (727) 863-8563. You may fax questions to (727) 847-2923.