

## SPECIAL BREAST MRI EDITION (Part 1 of 2)

### BRIDGING THE MRI CULTURE GAP: AN EDITORIAL

By Stephen J. Pomeranz, M.D.

As a radiologist who trains other radiologists in breast magnetic resonance imaging, I find it fascinating to witness the collision of two cultures in the same specialty. On one hand, the mammographic or women's imaging culture understands the pathways of analysis and the statistical significance of unique breast histologies. Pattern recognition by this group is often extraordinary, because of their high level of case experience. Such mammographic pattern recognition is directly transferable to MRI and thus easily taught.

Yet even the most basic physics, pulsing sequences, artifacts, and adjacent tissue pathologies (such as chest, liver, or skeleton) of MR are often foreign to breast mammographers. Thus, they are challenged in this regard. Most have had little to no previous exposure to MR imaging. Since MR does not rely on radiographic density or employ low-frequency sound waves, the learning curve in MR requires extended training and vigorous effort, including physics review.

The magnetic resonance imager, on the other hand, already possesses many of these MR-specific assets from the start. However, unless they have practiced the subspecialty of women's healthcare, they may lack the basic analytic and management tools required to direct the patient's care or perform breast intervention.

Like MRI for the mammographer, these management and interventional skills can be learned, but at some cost in time and effort. Fortunately, many MR imagers have had extensive training in conventional radiography and in mammography during their residencies. This experience helps to ease the MR imager's transition into the world of breast care.

In my ProScan Imaging breast MRI courses, it's not uncommon to encounter one culture that cannot recognize the difference between a T2- and a T1-weighted image, while another group may not know the meaning or significance of the term "LCIS." Therefore, a real danger exists if accreditation organizations decide to force breast MRI practitioners into one of these two camps without taking such factors into account.

If accreditation standards confine the performance of breast MR imaging to one of these camps, the medical community will need to decide whether module accreditation standards – which generate massive revenues for the American College of Radiology – should be provided by other not-for-profit societies and/or foundations with the proper infrastructure and balance.

These are huge decisions that have the potential to affect the future course of accessibility, expertise, and progression for the breast care subspecialty. They also have major economic implications. In the end, though, shouldn't we all have the same goal in any decision-making process – namely, to provide the best possible care, with the patients' well-being as the top priority?

### CLEARING UP THE CONFUSION ABOUT BREAST MRI

By Stephen J. Pomeranz, M.D., and Resham R. Mendi, M.D.

Breast MRI is a relatively new modality that has become an extremely useful tool for evaluation for breast cancer. It has now become the standard of care in several clinical situations -- and as its accuracy improves, the indications for its use are growing quickly.

There has been a recent onslaught of media attention focused on breast cancer because of many new studies and subsequent news articles assessing its usefulness. This wave of attention coincided with the highly publicized on-air announcement by Robin Roberts, news co-anchor for ABC's "Good Morning America," that she had been diagnosed with breast cancer.

Ms. Roberts's cancer was diagnosed after the evaluation of a lump she discovered through a self-exam. The fact that this cancer was missed by mammography, but detected by ultrasound, has led many viewers to question the relative accuracy and sensitivity of mammography, ultrasound, and MRI. How accurate is each modality? Which one should be used for screening?

ProScan Imaging's radiologists have now read more 10,000 breast MRIs and continue to read approximately five to ten per day. In this special two-part edition of *The MRI Mentor*, we will review recent developments in breast MRI, especially regarding its accuracy and its role in the algorithm of evaluating women at risk. We also evaluate the changing regulation of breast MRI.

#### Who should be screened with breast MRI?

This year, the American Cancer Society revised its screening guidelines for breast cancer. The ACS now recommends screening breast MRI for women with a lifetime risk of breast cancer of approximately 20-25% or greater, as well as women with a strong family history of breast or ovarian cancer, and women who have been treated for Hodgkin's disease.<sup>3</sup>

*(To be continued in next week's issue.)*

#### New ACS Recommendations for Breast MRI Screening as an Adjunct to Mammography<sup>3</sup>

- Recommend annual MRI screening (based on evidence\*):
  - Tested positive for BRCA gene mutation
  - First-degree relative of BRCA gene mutation carrier, but untested
  - Lifetime risk of 20–25% or greater, as defined by BRCAPRO or other models that are largely dependent on family history
- Recommend annual MRI screening (based on expert consensus opinion†):
  - Radiation to chest between ages 10 and 30
  - Li-Fraumeni syndrome and first-degree relatives of people with the syndrome
  - Cowden and Bannayan-Riley-Ruvalcaba syndromes and first-degree relatives
- Insufficient evidence to recommend for or against MRI screening‡:
  - Lifetime risk of 15–20%, as defined by BRCAPRO or other models that are largely dependent on family history
  - Lobular carcinoma in situ (LCIS) or atypical lobular hyperplasia (ALH)
  - Atypical ductal hyperplasia (ADH)
  - Heterogeneously or extremely dense breast on mammography
  - Women with a personal history of breast cancer, including ductal carcinoma in situ (DCIS)
- Recommend against MRI screening (based on expert consensus opinion )
  - Women with less than 15% lifetime risk

#### SOURCES

1. Kuhl, C.K., et al. "MRI for diagnosis of pure ductal carcinoma in situ: a prospective observational study." *The Lancet*, August 11 2007; 370: 485-492.
2. <http://query.nytimes.com/gst/fullpage.html?sec=health&res=9E0DE2DA1330F93BA15750C0A9619C8B63>
3. Saslow, Debbie; Boetes, Carla; Burke, Wylie; Harms, Steven; Leach, Martin O.; Lehman, Constance D.; Morris, Elizabeth; Pisano, Etta; Schnall, Mitchell; Sener, Stephen; Smith, Robert A.; Warner, Ellen; Yaffe, Martin; Andrews, Kimberly S.; and Russell, Christy A for the American Cancer Society Breast Cancer Advisory Group, "American Cancer Society Guidelines for Breast Screening with MRI as an Adjunct to Mammography." *CA Cancer J Clin*, 2007, 57: 75-89