

BREAST MRI: ADDING IT TO A PRACTICE

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MRI-guided biopsy is an important adjunct to a breast MRI service. Shown above is the needle aspiration system that is a fully integrated component of the dedicated breast MRI scanner from Aurora Imaging Technology, North Andover, Mass.

Radiologists have spent the past decade eagerly monitoring the use of MRI for breast cancer screening and diagnosis. In recent years in particular, clinical studies are bearing out the potential of this modality to help diagnose breast cancer earlier and among high-risk women.

In 2002, the *Journal of Clinical Oncology* reported that MRI demonstrates high sensitivity for breast cancer.¹ The next year, the American Cancer Society released updated guidelines for breast cancer screening indicating that breast MRI, when used with mammography, may enhance the effectiveness of screening and diagnosis.² In 2004, *The New England Journal of Medicine* published strong evidence to suggest that breast MRI studies are effective in finding tumors in women at high risk for breast cancer.³

Combined with advances in technology that have made bilateral, high-resolution imaging a standard in the field, such results as these have been enough to motivate an increasing number of radiologists to add breast MR service to their practices. For Kamilia Kozlowski, MD, medical director and chief executive officer of Knoxville Comprehensive Breast Center, Knoxville, Tenn, breast MRI was a natural progression of the services she was providing to her patients already.

“Being a clinical breast radiologist, I always want to keep up with the latest in technology that impacts finding early breast cancer,” Kozlowski notes. She added MRI in the fall of 2002.

Northside Radiology Associates at Northside Hospital, Atlanta—a facility that treats more breast cancer than any other hospital in the state—made the decision to offer its patients breast MRI in 2003.

“Until recently, MRI has been seen mostly as a research tool,” says Lynn Baxter, MD, director of breast imaging for Northside Radiology Associates. “Now, there is clearly enough data to support using it clinically, and we wanted to offer it as an additional means of imaging for our patients.”

In 2005, the refinement of technology, software, and equipment, combined with increasing demand from local referrers—and a lack of response from hospitals in the area to that demand—spurred Radiology Alliance, Nashville, Tenn, to open Specialty MRI, a freestanding dedicated breast MRI facility.

“We initially looked to the hospitals to see if they would be moving into those service lines, but they didn’t seem very interested,” says John G. Huff, MD, medical director for Specialty MRI and imaging director for Baptist Hospital, Nashville. “We felt we had enough requests to establish it as an independent service, and now Specialty MRI provides breast imaging services for three major hospitals in the area.

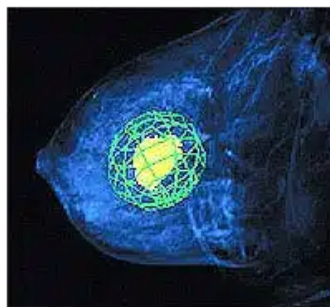
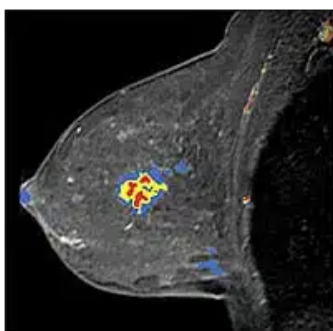
“The expanded exposure to breast MRI in the literature is leading people to open a whole lot of MR centers—or at least add it to what they are doing in hospitals,” Huff continues. “Hospitals have a challenge because their magnets are already full with other work. Breasts are more time-consuming, difficult to interpret, and harder to reimburse. Hospitals have to think twice and decide if they want to take time off musculoskeletal work in order to jump into this other thing. It’s a difficult decision.”

DETERMINING ITS WORTH

Making the decision to add breast MRI requires the evaluation of a number of factors, regardless of whether the facility looking to broaden its services is part of a hospital or a freestanding imaging center. First, radiologists need to look at the number of patients they have who will truly benefit from the modality. Breast MRI is primarily used as a diagnostic tool in a number of patient groups:

- In women who already have been diagnosed with cancer, MRI can define the extent of the tumor and locate any undetected tumors.
- In women with large tumors who are getting chemotherapy, MRI is performed prior to surgery to show whether the mass is shrinking.
- In women who have undergone a needle biopsy that has proven the existence of carcinomas, MRI is useful for evaluating the extent of the disease and determining if the cancer is multi-focal.
- In women who are candidates for breast surgery, MRI is useful in surgical planning.

The other application of breast MRI is for screening, though the only indication is in very high-risk patients who have a strong family history of breast cancer and known genetic mutation. However, among women who carry the BRCA1 and BRCA2 gene mutations, breast MRI has been found to be the most sensitive modality, followed by mammography, ultrasound, and clinical breast examination.⁴



Angiogenesis map (left) produced on the CadStream software from Confirma, Kirkland, Wash, was developed in accordance with BI-RADS. Volume summary (right) automatically creates lesion characterizations with 3D renderings and data calculations.

In addition to evaluating their patient mix, practices considering adding MRI need to examine their current relationship with payors and research reimbursement policies in their state. Like any new business adding a new service, facilities need to project how many patients would be utilizing such a service and calculate what the potential reimbursement would be to see if it is feasible to pay off the cost of adding the service over several years.

“A much better history of third-party reimbursement exists on the East Coast and in California, because breast MRI is more established,” Huff says. “In middle Tennessee, however, that is not yet the case. It can be hard to establish a good relationship with third-party payors and get them to understand that you can save them money with this test.”

Reimbursement on breast MRI tends to be very good, with many insurance companies taking from a few weeks to a month to pay the providers. However, both Huff and Kozlowski have experienced difficulties being reimbursed by a few insurers in their state.

“A handful of providers want to give us a tenth of what the test is worth, so we don’t contract with them,” Huff says. “And virtually none of the claims sent to Blue Cross/Blue Shield go through the first time—it can take 6 months or more to collect on them.”

Kozlowski concurs: “Blue Cross/Blue Shield always takes longer to process claims than other payors, and it has a history of denying lots of claims on the grounds that breast MRI is investigational. We continue to argue with [the insurer] about that point, and last year, we had about 9% denials.”

THE PATIENT POPULATION

To determine how many patients will benefit from breast MRI, a practice must determine how many potential patients are in a given market area, including women:

- who have been diagnosed with cancer;
- with large tumors who are receiving chemotherapy;
- who have undergone a needle biopsy that has proven the existence of carcinomas;
- who are candidates for breast surgery;
- who have a strong family history of breast cancer and known genetic mutation; and/or
- who are carriers of the BRCA1 and BRCA2 gene mutation.

Huff and Kozlowski both note that although Blue Cross/Blue Shield will preapprove, the insurer’s history of denials prevents the radiologists from assuring patients that the insurer will pay for the test.

“It’s my understanding that it’s different in other areas of the country, but in Tennessee, that has produced particular hardships for our patients,” Huff says. “So that is something that anyone thinking of adding this service should be aware of ahead of time.”

Radiologists also need to be aware of what their state requires before they can establish MRI service. For example, Tennessee practices must obtain a certificate of need (CON) through a process that can take up to a year to complete.

“In states where a CON is an issue, practices must convince a committee that this service is needed, and it takes a good while to get the information together to present to them,” Huff says. “It’s a time-consuming proposition.”

Kozlowski started the process of adding the service in 2000, and it took a year before she was ready to offer it to her patients. The process also took a year for Specialty MRI, which encountered resistance from virtually every hospital in the area as well.

“They were not providing breast MRI themselves, but they didn’t want competition if they decided to do so in the future,” Huff says. “Practices need to be aware that they may have resistance from other facilities that, while they may not provide the service, may want to decrease potential competition in the future should they decide to provide it.”

Kozlowski reports that the breakeven for a dedicated breast MRI system is dependent on several variables, including department overhead, cost of equipment, and local reimbursement policies. For Specialty MRI, the break-even point was 17 breast MRIs per month.

According to Debbie Thomas, VP, marketing, Aurora Imaging Technology, North Andover, Mass, a facility needs

to be performing 12,000 to 15,000 mammograms a year in order to cost-justify a dedicated breast MR scanner.

THE OPTIMAL TECHNOLOGY

Although standards for MRI technology and software are still under development, most radiologists agree on the basic needs for establishing breast MRI service. A new provider of the service will need a 1- to 1.5-Tesla magnet, dedicated bilateral breast coils, and CAD software offering high spatial and temporal resolution. It also is beneficial to have the capability to perform fat saturation and subtraction imaging.

“You can do a good job without CAD software if you are experienced, but it adds significant data and makes it easier to review the studies,” Huff says. “We are generating thousands of images, and if you have a software program that lets you interpret that data in a few minutes as opposed to hours, that’s a great benefit.”

The type of equipment a practice chooses to invest in also will depend on whether they plan to do dedicated breast MRI or whether they want to open a magnet for general imaging.

“It’s actually more complicated with a general service, because you have to invest in lots of different coils and be set up to do all the body parts,” Huff says. “In addition, you will be marketing to a much broader audience. If you just do breast, you can focus on a more targeted marketing audience.”



“The additional information obtained with breast MR allows women and their physicians to make better decisions regarding their breast health options and the complex management considerations that surround breast cancer treatment. And that benefits everyone.”

—Kamilia Kozlowski, MD
Knoxville Comprehensive Breast Center

Initially, Kozlowski was torn between purchasing a full-body MRI and just using it for breast scans, or buying a dedicated breast MRI. She eventually chose to purchase the Aurora Breast MRI system from Aurora Imaging Technology Inc, North Andover, Mass, because she knew that her focus would be solely on breast imaging.

“The reason I chose Aurora’s system is because it’s the only focus of that company,” she says. “From the very beginning, Aurora offered the first unit dedicated to breast imaging. When the company unveiled its system at the RSNA conference in 1994, it already was offering bilateral evaluations with no loss of resolution.”

Kozlowski also notes that Aurora has a wider area of imaging and currently offers the thinnest slices on the market: 1.2-mm to 1.4-mm slices.

“For me, Aurora provides the best resolution out there, and it generally follows that it will offer the highest sensitivity as well,” she says. “I am always looking for what will give me the best resolution for finding breast cancer; that’s my first priority. If I pick a unit that is not the best available, there is really no sense having it in my practice at all. I’m going to be missing something unless I am getting the latest technology.”

Specialty MRI decided on MRI equipment from GE Healthcare, Waukesha, Wis, because technologists are familiar with it and because a common platform would be applicable for future expansion if that circumstance evolved.

In addition to purchasing the right equipment to suit its needs, every practice should have on hand a good radiologist who can spearhead the addition of dedicated breast MRI.

“The necessary personnel depend on the facility, but at the very least you should have an MRI tech who is interested in the project and who can learn how to appropriately position the patient and run the scan,” says Baxter of Northside Radiology. “You also will need someone to schedule appropriately, someone to do comparison mammograms, and someone who can do precertification with insurance companies.”

IMPACT ON PRACTICE

Planning a marketing strategy ahead of time is another crucial step in the process of adding breast MRI that relies heavily on a practice’s relationship with referrers.

“We went into this with a lot of referrers who knew us well and had a lot of respect for the job we did in conventional MRI,” Huff says. “We built upon the referral base we have for conventional breast imaging services—surgeons, oncologists, people who know us and have confidence in our imaging—and we wanted them to know that we were doing something beneficial for them and their patients.

BREAST MRI CHECKLIST

- Center performs at least 12,000 to 15,000 mammograms per year.
- Research payor reimbursement policies.
- Begin marketing program to referring breast surgeons and radiation and medical oncologists well in advance of launching the service.
- Acquire a 1 to 1.5T magnet, bilateral breast coil, MR-compatible biopsy device, and CAD software.

“Even with a lot of confidence in our skill and legitimacy of the service, we still had to go out and educate people,” he continues. “Breast MR in the middle Tennessee community is fairly new, and it always takes time for a referrer population to understand how they can use a new test.”

For Baxter, the best means of marketing has been direct presentations to physicians. “The scientific data is very impressive, showing that in the appropriate patient groups, we will find additional tumors using breast MRI in up to 30% of patients,” she says. “We also get beautiful images, and it’s nice to be able to use those to show physicians the power of the study.”

Ultimately, the power of the study is making the difference for those practices that have recently expanded into offering breast MRI.

“It’s been very good—both clinically, in terms of identifying and staging patients’ cancers, and financially, in terms of getting reimbursement,” Baxter says. “Although MRI does not replace mammography by any means, it’s a very nice adjunct.”

As Kozlowski sees it, any facility interested in providing state-of-the-art care should include breast MRI because it is the most sensitive tool out there for finding breast cancer.

“The additional information obtained with breast MR allows women and their physicians to make better decisions regarding their breast health options and the complex management considerations that surround breast cancer treatment,” she says. “And that benefits everyone.”

REFERENCES

1. Tillman GF, Orel SG, Schnall MD, Schultz DJ, Tan JE, Solin LJ. Effect of breast magnetic resonance imaging on the clinical management of women with early-stage breast carcinoma. *J Clin Oncol*. 2002;16:3413–3423. Available at: www.jco.org/cgi/content/abstract/20/16/3413. Accessed August 28, 2006.
2. Smith RA, Saslow D, Sawyer KA, et al. American Cancer Society guidelines for breast cancer screening: update 2003. *Cancer J Clin*. 2003;53:141–169. Available at: caonline.amcancersoc.org/cgi/content/full/53/3/141. Accessed August 28, 2006.
3. Liberman L. Breast cancer screening with MRI—what are the data for patients at high risk? *New Engl J Med*. 2004;351:497–500. Available at: content.nejm.org/cgi/content/extract/351/5/497. Accessed August 28, 2006.
4. Warner E, Plewes DB, Hill KA, et al. Surveillance of BRCA1 and BRCA2 mutation carriers with magnetic resonance imaging, ultrasound, mammography, and clinical breast examination. *JAMA*. 2004;292:1317–1325. Available at: jama.ama-assn.org/cgi/content/abstract/292/11/1317. Accessed August 28, 2006.