Breast MRI Guidelines

A Review of Recommendations from the National Comprehensive Cancer Network

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Background

Decisions, opinion and consensus on the most effective clinical use of breast MRI has been a moving target since its introduction in the mid-1990s.[1] It has been the subject of multiple briefings from National Imaging Associates (NIA), with the most recent instance in 2007 when the American Cancer Society (ACS) announced its consensus document on breast MRI in the high-risk female. For a high-risk patient (considered to be a woman who meets the criteria outlined by the ACS), it is recommended that an annual breast MRI be performed in addition to the woman's annual mammogram. High risk is determined by the following:

- An inherited mutation in the genes called BRCA1 and BRCA2 (short for breast cancer 1 and breast cancer 2), which are involved in many cases of hereditary breast and ovarian cancer
- A first-degree relative of a known breast cancer gene (BRCA) carrier
- A lifetime cancer risk of 20-25 percent or greater, as defined by BRCA-PRO (a computer model used by genetics counselors for determining genetic risk)
- A history of having received chest irradiation (radiation therapy) between the ages of 10 and 30 years
- Evidence of Li-Fraumeni, Cowden, or Bannayan-Riley-Ruvalcaba syndromes
- A diagnosis of both breast and ovarian cancer
- A family history that includes multiple cases of early-onset breast cancer
- One or more male family members diagnosed with breast cancer
- Ashkenazi Jewish background and a family history of breast and ovarian cancer

All of these risk factors (listed above) are included as part of our NIA algorithms and guidelines, and our customers can rest assured that we remain current with industry findings, developments and advances.

Recent Changes

The National Comprehensive Cancer Network (NCCN), a not-for-profit alliance of 21 of the nation's leading cancer centers, is committed to improving the quality and effectiveness of care provided to patients with cancer. On Feb. 3, this alliance announced important updates to their Clinical Practice Guidelines in Oncology™ for Breast Cancer and Breast Cancer Risk Reduction. While the NCCN does not carry the weight of the American Cancer Society (ACS), it is a highly respected authority whose recommendations likely will become the standard of care. The chart on the following page represents a summary of their imaging related recommendations[2] and the potential for impact on your medical policy.

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NCCN Recommendation	Perspective	Impact
1. MRI is not a substitute for screening or diagnostic mammography and, when indicated, diagnostic breast ultrasound. MRI supplements the use of these standard imaging tools in appropriately selected clinical situations.	This recommendation likely has been developed in response to proponents of the use of MRI as a primary screening procedure. While the benefit of MRI is that it is a radiation-free procedure, there remain serious concerns about the false positive rates of breast MRI.[3] [4]	No change in current practice.
2. For women with diagnosed breast cancer, MRI provides enhanced detection in both the breast known to have cancer and the opposite (contralateral) breast.	This recommendation indicates the belief in the utility of contralateral breast MRI in patients with known breast cancer. **This does represent a change in practice** from current ACS practice guidelines: *"Although the ACS guidelines find screening MRIs of uncertain value for breast cancer survivors, a newly published study shows the scans can be useful for finding tumors in the opposite (contralateral) breast of women newly diagnosed with the disease."* [5]	Represents a change in current practice.
3. Surgical decisions should not be based solely on MRI findings because not all suspicious lesions on MRI are cancer. Suspicious lesions should be biopsied before a surgery plan is devised in order to avoid surgical over treatment.	This recommendation acknowledges the challenge of "false-positive" findings inherent in the interpretation of breast MRI.[6] While this does not directly impact utilization of imaging, it does caution physicians to perform a biopsy on suspicious lesions rather than going directly to definitive surgery.	Represents a change in current **clinical** practice — not imaging practice.
4. In the rare instances where cancer is found in the lymph nodes but not the breast, an MRI can find the location of cancer in the breast in nearly 60 percent of women.	This recommendation addresses the circumstance where cancer is found in the lymph nodes but not the breast on standard mammography. National Imaging Associates' guidelines currently will approve breast MRI in such cases.	No change in current practice.
5. PET/CT scanning is not recommended for evaluation of newly diagnosed patients with early-stage disease except in those clinical situations where other staging studies are equivocal or suspicious.This is true even in those situations that biopsy is recommended.	This recommendation speaks directly to the use of PET/CT in the early diagnosis of patients with early-stage disease. PET/CT is not recommended except in those clinical situations where other staging studies are equivocal or suspicious. This position moderates recent literature in support of routine use of PET/CT.[7]	No change in current practice.

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NCCN Health Policy Recommendations:

While not strictly "clinical," the following two recommendations affect a health plan's privileging programs:

- Any facility seeking to perform breast MRI must utilize a dedicated breast MRI coil.[8]
- Any facility seeking to perform breast MRI must have the capability of performing MRI-guided breast biopsies.

Utilization Economics

NCCN Recommendation #2 supports the utility of contralateral breast MRI in patients with known cancer of one breast. The recommendation is silent on whether it is appropriate "only at the time of new diagnosis" or on all routine follow-up studies. While this may be open to interpretation, the lack of specificity in the recommendation suggests endorsement of the use of contralateral breast MRI on a routine basis in patients with known disease. The incidence of new breast cancer in a population is 1.1 per 1,000 women per year and deaths are .25 per 1,000 women.[9] This would indicate that in a given year, active breast cases would occur at the rate of 0.75/1,000 females/year or about half that (0.37/1,000/year) if the entire population is considered.

Based on the assumption that most newly discovered breast cancer is unilateral, a health plan can estimate the financial impact = 0.37 x (population ÷ 1,000) x average length (years) of time an individual is a member.

Summary Recommendation from National Imaging Associates

The recommendations made in the National Comprehensive Cancer Network's February 2009 guideline revisions are well grounded. The only substantive change (examination of the contralateral breast by MRI in a known cancer patient) is clinically appropriate and should be recognized as a covered benefit.

For more information or to learn more about NIA, call 1-877-NIA-9762.

1. *Hrung J, Sonnad S, Schwartz J, Langlotz C (1999). "Accuracy of MR imaging in the work-up of suspicious breast lesions: a diagnostic meta-analysis."* Acad Radiol *6 (7): 387–97.*
2. *http://www.nccn.org/about/news/newsinfo.asp?NewsID=200. Accessed February 2009.*
3. *Langer SA, Horst KC, Ikeda DM, et al 2–24, Pathologic Correlates of False Positive Breast Magnetic Resonance Imaging Findings: Which Lesions Warrant Biopsy? (Stanford Cancer Ctr and Stanford Univ School of Medicine, Calif;),* Am J Surg *190:633-640, 2005.*
4. *What are the limitations of MRI of the Breast? Am Col Radiology, Radiologyinfo http://www.radiologyinfo.org/en/info.cfm?pg=breastmr. Accessed February 2009.*
5. *ACS Advises MRIs for Some at High Risk of Breast Cancer, Am Cancer Soc 2007/03/28. http://www.cancer.org/docroot/NWS/content/NWS_1_1X_Society_Advises_MRIs_for_Some_Women_at_High_Risk_of_Breast_Cancer.asp. Accessed February 2009.*
6. *Langer SA, Horst KC, Ikeda DM, et al 2–24 Pathologic Correlates of False Positive Breast Magnetic Resonance Imaging Findings: Which Lesions Warrant Biopsy?(Stanford Cancer Ctr and Stanford Univ School of Medicine, Calif;),* Am J Surg *190:633-640, 2005.*
7. *Heusner TA, Kuemmel S, Umutlu L, et al., Breast Cancer Staging in a Single Session: Whole-Body PET/CT Mammography: Breast Diseases: A Year Book Quarterly Volume 19, Issue 4, 2008, Pages 313-314*
8. *http://www.radiologyinfo.org/en/info.cfm?pg=breastmr*
9. *Ries LAG, Melbert D, Krapcho M, Stinchcomb DG, Howlader N, Horner MJ, Mariotto A, Miller BA, Feuer EJ, Altekruse SF, Lewis DR, Clegg L, Eisner MP, Reichman M, Edwards BK (eds).* SEER Cancer Statistics Review, *1975-2005, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2005/, based on November 2007 SEER data submission, posted to the SEER web site, 2008. Accessed February 2009.*

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