

Why Doesn't Everyone Get a Breast MRI?

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No Disclosures

Purpose

- Breast magnetic resonance imaging (MRI) has many utilities including breast cancer detection in high-risk patients, evaluating and staging of newly diagnosed breast cancer, detecting additional ipsilateral and contralateral cancers with a new diagnosis, evaluating for an occult malignancy, and assessing implant integrity.
- It can be utilized as a screening and diagnostic imaging tool with multiple indications throughout the diagnosis, pre-treatment, and post-treatment stages of breast cancer.
- However, with the presence of other imaging modalities, such as screening and diagnostic mammograms and targeted breast ultrasound, it can be difficult for patients and referring physicians to understand the indications and utilities of breast MRI.
- This project aims to review the definition of high-risk patients for breast cancer, indications for screening and diagnostic breast MRIs, as well as the risks and benefits of different options.
- We want to answer patients' questions of "Why doesn't everyone get a breast MRI?"

Materials and Methods

- With various imaging modalities for breast cancer, it may be confusing for patients and their referring providers to decide when to obtain breast MRI and the utility of this dynamic modality.
- By reviewing the definition of high-risk patients for breast cancer, indications for breast MRIs, and their risks and benefits, we hope to provide guidance for clinicians to more accurately order imaging studies and for patients to better understand the utility of the imaging studies they are receiving.

Results: ACR Definition of, and MRI recommendations for, high risk patients for breast cancer

- ACR recommendations for contrast enhanced MRI
 - Annual MRI SCREENING beginning at age 25-30 for:
 - Genetics based increased risk
 - History of chest radiation before the age of 30
 - 20% or more lifetime risk
 - Annual MRI SURVEILLANCE for:
 - Personal history of breast cancer with dense breast tissue
 - Those diagnosed with breast cancer before age 50
 - MRI should be considered for:
 - Personal history of breast cancer that does not fall in the above categories
 - Biopsy proven LCIS or atypia⁵

Results: ACS Definition of, and MRI recommendations for, high risk patients for breast cancer

- Beginning at 30yo, annual mammogram and breast MRI recommended for:
 - Those with a lifetime risk greater than 20-25% based on risk assessment tools and family history
 - Known BRCA1 or BRCA2
 - First degree relative with BRCA1 or BRCA1 and have not been tested
 - Chest radiation between age 10-30
 - Patient or first degree relative of patient has not have Li-Fraumeni, Cowden, or Bannayan-Riley-Ruvalcaba syndrome¹

Additional Indications for Breast MRI

- Preop staging for newly diagnosed breast cancer
- Following neoadjuvant chemotherapy
- Evaluating breast implants
- Assessing for breast cancer in those with metastases with unknown primary
- Evaluation for local recurrence²

Benefits of Breast MRI

- Many studies have shown 81-100% sensitivity, almost twice that of mammography⁴
- Earlier cancer detection, and thus increased survival
- Can lead to fewer mastectomies and reduces the incidence of re-excision
- Allows evaluation of response to therapeutic treatment and can aid in the decision to modify treatment
- Residual tumor assessment following neoadjuvant chemotherapy to determine if patient is eligible for breast conservation surgery³

Risks/Cons of Breast MRI

- Concern regarding gadolinium deposition in those undergoing annual screening with contrast-enhanced MRI³
- False positives⁶
- Unnecessary biopsies⁷
- Cost
- Patients unable to obtain MRI for reasons such as implanted devices, claustrophobia, contrast allergy etc.

Discussion

- Within the past few decades, breast MRI has proven its utility in multiple facets of breast radiology including screening in women with increased risk of breast cancer, evaluating and staging of newly diagnosed breast cancer, evaluating for an occult malignancy, assessing response to treatment, etc.
- However, with numerous different societies offering varying recommendations, it can be difficult for providers to know when it is and isn't appropriate to recommend breast MRI for patients.

Discussion

- In addition, the use of breast MRI for reasons other than mere screening, such as surgical planning or treatment response, can lead to further confusion.
- Further complicating the decision of whether or not to offer breast MRI to patients are the risks and cons associated with this imaging modality.

Conclusion

- MRI has, and continues to, prove its utility in the field of breast imaging and has the capacity to improve morbidity and mortality associated with breast cancer.
- That being said, breast MRI is not indicated for all women .
- It is imperative that providers understand the clinical indication for recommending breast MRI in order to benefit the patient while simultaneously avoiding any risks or negative impacts that it may also entail.

Resources

1. “ACS Breast Cancer Screening Guidelines.” *American Cancer Society*, <https://www.cancer.org/cancer/breast-cancer/screening-tests-and-early-detection/american-cancer-society-recommendations-for-the-early-detection-of-breast-cancer.html>.
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Thank you!

