INTRODUCTION:

Magnetic resonance imaging (MRI) of the breast is a useful tool for the detection and characterization of breast disease, assessment of local extent of disease, evaluation of treatment response, and guidance for biopsy and localization. Breast MRI should be bilateral except for women with a history of mastectomy or when the MRI is being performed expressly to further evaluate or follow findings in one breast. MRI findings should be correlated with clinical history, physical examination results, and the results of mammography and any other prior breast imaging.

INDICATIONS FOR BREAST MRI FOR WOMEN:

Silicone Implants:
- For evaluation of known or suspected silicone implant rupture or leakage.
- For postoperative evaluation of silicone breast implant complications.

No History of Known Breast Cancer

For screening examination to detect breast cancer in any of the following situations:
- History of mediastinal irradiation for lymphoma/Hodgkin disease.
- Positive breast cancer gene test results.
- Two (2) or more first degree relatives (parents, siblings, and children) have history of breast cancer and/or positive breast cancer gene test results.
- A Breast Cancer Risk Assessment (by the Gail risk or other validated breast cancer risk assessment models) that identifies the patient as having a lifetime risk of 20% or greater of developing breast cancer.

For evaluation of identified lesion, mass or abnormality in breast in any of the following situations:
- Positive breast cancer gene test results.
- Two (2) or more first degree relatives (parents, siblings, and children) have history of breast cancer and/or positive breast cancer gene test results.
- When other imaging examinations, such as ultrasound and mammography, and physical examination are inconclusive for the presence of breast cancer, and biopsy could not be performed.
History of Known Breast Cancer

For screening examination to detect breast cancer in any of the following situations:
- For screening examination of contralateral breast in patient with known breast cancer.

For evaluation of identified lesion, mass or abnormality in breast in any of the following situations:
- For evaluation of breast lesion, identifying whether single or multi-focal, in patient with diagnosed breast cancer.
- For evaluation of suspicious mass, lesion, distortion or abnormality of breast in patient with history of breast cancer.
- For evaluation of suspected or known atypical hyperplasia and/or lobular carcinoma in breast or rule out.

For the evaluation or detection of tumor recurrence:
- For evaluation to detect local tumor recurrence in patient who has undergone mastectomy and breast reconstruction with an implant.
- For evaluation to detect local tumor recurrence in patient who has radiographically dense breast or old scar tissue from previous breast surgery that compromises ability of combined mammography and ultrasound.

Pre-operative or Neoadjuvant Chemotherapy:
- For preoperative evaluation for known breast cancer when neoadjuvant chemotherapy will be administered prior to surgical intervention and during neoadjuvant chemotherapy.

May or May Not Have Breast Cancer History:
- For evaluation of axillary node metastasis or adenocarcinoma with normal physical examination and/or normal breast mammogram.
- For evaluation to rule out, detect or stage invasive lobular carcinoma (ILC).

INDICATIONS THAT REQUIRE FURTHER CLINICAL REVIEW:

- Bilateral or combo studies.
- For evaluation of suspected saline implant rupture or leakage
- For evaluation of patient undergoing chemotherapy and no other information is provided.
- For postoperative evaluation of simple/radical mastectomy or subtotal mastectomy
- For evaluation when no known breast cancer is evident and mammogram is contraindicated by anatomic factors, e.g., deformity and extreme density
- For same imaging tests less than six (6) weeks apart unless specific guideline criteria states otherwise
- For different imaging tests, such as CT and MRI, of same anatomical structure less than six (6) weeks apart without high level review to evaluate for medical necessity
• For re-imaging of same, poor, or contrast enhanced studies.
• Metal devices within the body, such as indwelling pacemakers and intracranial aneurysm surgical clips that are not compatible with the use of MRI, may be contraindicated. Other implanted active metal devices in the patient as well as external devices such as portable O₂ tanks may also be contraindicated. An open MRI may be appropriate for patients who are claustrophobic.

ADDITIONAL INFORMATION RELATED TO BREAST MRI:

Request for a follow-up study - A follow-up study may be needed to help evaluate a patient’s progress after treatment, procedure, intervention or surgery. Documentation requires a medical reason that clearly indicates why additional imaging is needed for the type and area(s) of requested imaging.

MRI as First-Line Screening Modality – Only recently has the use of MRI for screening been encouraged. It is now used for screening in women with increased risk for breast cancer due to certain factors, e.g., history of mediastinal irradiation for Hodgkin disease, mutation in a breast cancer susceptibility gene, and familial clustering of breast cancer. Certain mutations, including BRCA1 and BRCA2 genes confer significantly elevated risk of breast cancer. Even when a woman tests negative for BRCA mutations, she may still be at risk for breast cancer if she has first degree relatives with a history of breast cancer or positive BRCA mutations.

MRI in Women with Normal Physical Examination and Normal Mammogram but with Clinical Signs of Breast Cancer – Metastatic spread in the axillary lymph nodes suggest the breast as the site of the primary cancer even when the results of a mammogram are normal. MRI is useful in detecting primary breast malignancies in these cases. A negative MRI may also be used to prevent an unnecessary mastectomy.

MRI during or after Neoadjuvant Chemotherapy – Dynamic contrast material-enhanced MRI may be used to monitor response of a tumor to neoadjuvant chemotherapy used to shrink the tumor before surgery. This is very important in clinical decision making as alternative therapies may be selected based upon the results obtained from the MRI. It may also be used to depict residual disease after neoadjuvant chemotherapy.

MRI and Breast Implants – MRI may be used in patients with breast implants to evaluate breast implant integrity. It may also detect cancers arising behind an implant that may not be diagnosed with mammography.

MRI and Invasive Lobular Carcinoma – Invasive lobular carcinoma (ILC) is not the most common type of breast carcinoma but it is second to invasive ductal carcinoma. MRI is used in the evaluation of ILC and can measure the extent of the disease with high reliability.
REFERENCES:


