Steven Harms, MD  
DCIS – New Data and Interpretation Methods

SAM Questions

1. Studies show that 90% of DCIS discovered on mammography is calcified. Of the incidental DCIS discovered on pathology, how much is calcified?
   A. 5%
   B. 15%
   C. 30%
   D. 50%
   E. 75%

   Answer:  C

   Reference:

2. On MRI, DCIS is most likely to appear as:
   A. Non-mass enhancement
   B. Irregular mass
   C. Spiculated mass
   D. Round or oval mass
   E. Calcification

   ANSWER:  A

   Reference

3. The MONET trial showed that patients undergoing breast MR had a higher rate of positive margins. The MONET trial showed a high rate of false negatives due to missed
A. Infiltrating ductal carcinoma
B. Infiltrating lobular carcinoma
C. Ductal carcinoma in situ
D. Atypical ductal hyperplasia
E. Lobular carcinoma in situ

ANSWER: C

Reference

4. DCIS can be reliably detected and characterized on MRI if which technical goal is achieved
A. Better dynamic resolution (shorter scans)
B. Inversion recovery fat suppression
C. Use of images without fat suppression
D. Higher resolution and better contrast
E. Parallel imaging

ANSWER: D

Reference

5. The most common cause of false positive MRI:
A. Fibroadenoma
B. Papilloma
C. LCIS
D. Hormone induced enhancement
E. Benign proliferative change

ANSWER: E

Reference:
Reni Butler, MD  
MRI-Guided Breast Biopsy - Tips and Tricks  
SAM Questions

1. Which BI-RADS 4 MRI-detected lesion is most likely to have an ultrasound correlate?  
A. 12 mm area of focal heterogeneous NME  
B. 7 mm area of linear branching enhancement  
C. 11 mm irregular mass  
D. 6 mm circumscribed mass  

Rationale:
MRI-detected lesion features which have been associated with a higher likelihood of a sonographic correlate in the literature include mass vs. nonmass enhancement, larger size, and higher level of suspicion.

References:
1. Meissnitzer M, Dershaw DD, Lee C, Morris E. Targeted ultrasound of the breast in women with abnormal MRI findings for whom biopsy has been recommended. AJR 2009;193(4):1025-1029  

2. Which of the following techniques is helpful for targeting a lateral posterior lesion?  
A. Inserting padding between grid and breast, as in the “washcloth” technique  
B. Placing the patient in a lateral decubitus position  
C. Bringing the patients arms down by her side  
D. Cushioning the biopsy table to increase patient comfort  

Rationale:
Choice A is a technique useful in targeting an anterior lesion, while choices C and D are the opposite of additional techniques useful for targeting posterior lesions.

References:

3. A 45 year-old BRCA+ woman presents for MRI biopsy but the suspicious lesion seen on her diagnostic MRI is not reproduced. What is the appropriate management?  
A. Reschedule the patient for MRI-guided biopsy at a different phase of her menstrual cycle  
B. Recommend surgical excision of the region  
C. Repeat the MRI study in 2-3 months  
D. Recommend 6 month follow-up  

Rationale:
Cancellation of MRI-guided biopsy due to non-visualization occurs in 8-12% of cases. If a lesion cannot be visualized in spite of technically adequate imaging in both the initial and delayed phases of enhancement, 6 month follow-up is appropriate.
References:
guided breast biopsy due to lesion nonvisualization: frequency and follow-up. Radiology
2011;261(1):92-99
assisted breast biopsy: results from a European multicenter study of 538 lesions. Cancer
2006;106(5)982-990

4. A high-risk patient has a 7 mm mass with irregular margins and wash-out on screening MRI.
MRI-guided biopsy reveals benign fibrocystic change. What is the appropriate management
recommendation?
A. 6 month follow-up
B. 12 month follow-up
C. Surgical excision
D. Second-look ultrasound

Rationale:
The histology of benign fibrocystic change does not explain the presence of a mass with
suspicious morphologic and kinetic features. This diagnosis is, therefore, discordant and
warrants surgical excision.

References:
1. Eby P, Lehman C. Magnetic resonance imaging–guided breast interventions. Topics in
magnetic resonance imaging 2008;19(3):151-162
1. Preoperative MRI of the breast
   A. Improves surgical treatment by increasing the rate of negative margins at time of initial surgery.
   B. Decreases conversion from breast conservation surgery to mastectomy.
   C. Reduces recurrence of breast cancer in the contralateral breast.
   D. Causes an increase in both ipsilateral and contralateral mastectomy rates.
   E. Increases disease free intervals.

Correct answer is d.
Pre-operative MRI of the breast increases the rate of both ipsilateral and contralateral mastectomy rates from 18.2% in patients with no MRI to 25.5% in patients with preo-operative MRI.


2. Diagnostic MRI of the breast is helpful in the evaluation of patients with metastatic cancer to the lymph nodes in order to find the occult primary tumor and thus
   A. Determine the chemotherapeutic approach to the patient.
   B. Allow for lumpectomy vs mastectomy.
   C. Delete the need for radiation therapy.
   D. Evaluate for contralateral disease.
   E. Determine need for axillary lymph node dissection.

Correct answer is b.
If the primary tumor is found by MRI, patient is then a candidate for lumpectomy instead of mastectomy.

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3. In the study by Mann, et al, it was found that in patients diagnosed with infiltrating lobular cancer
   A. The re-excision rate due to positive margins was the same in patients who recieved pre-operative MRI compared to those with no pre-operative MRI.
   B. MRI had a high false negative rate.
   C. The definition of margins and extent of disease was more difficult to determine when compared to invasive ductal carcinoma.
   D. The re-excision rate due to positive margins was significantly lower in patients who underwent preoperative MRI.
   E. MRI decreased mastectomy rates.

Correct answer is d. The re-excision rates in patients without MRI was 27% compared to 9% in patients who underwent pre-operative MRI.

Bruce A. Porter, MD, FACR
High Risk Surveillance- Breast MR
SAM Questions

1. Breast cancer gene (BRCA 1 & 2) carriers have what lifetime risk of developing breast cancer?
   A. 20-24%
   B. 35%
   C. 60%
   D. >95%

   ANSWER: C

Reference:

2. Which of these is associated with breast cancer risk approaching that of the BrCa positive patients by age 55?
   A. Colon cancer.
   B. History of radiation treated lymphoma.
   C. Myelodysplastic syndrome.
   D. Malignant melanoma.

   ANSWER: B

   If treated between ages 10-30; greater near menarche and proportional to breast dose. Newer techniques likely decrease risk.

Reference:

3. In newly diagnosed breast cancer the negative predictive value of breast MR for the contralateral breast has been shown to be:
   A. 35%
   B. 60%
   C. 92%
   D. 99%

   ANSWER: B

Reference: