AMSER Case of the Month
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HPI: 39-year-old female with a palpable left breast lump

Mark Eskander, OMS IV – Lake Erie College of Osteopathic Medicine
Peter Lore, DO - Penn State Health Milton S. Hershey Medical Center
Angela Choe, MD - Penn State Health Milton S. Hershey Medical Center
Patient Presentation

• HPI: 39-year-old female presents with palpable lump in the lower outer left breast that she first noticed 13 months ago

• PMH: No significant history

• PSH: No significant history

• FH: No significant history

• OB/GYN HX: 3 caesarian deliveries

• PE: Nontender, irregular mass in the lower outer quadrant of the left breast. There is no lymphadenopathy, nipple distortion, or skin changes

• Pertinent labs: None
What Imaging Should We Order?
ACR Appropriateness Criteria for palpable breast masses in female 30 to 39 years of age

### Variant 11: Adult female, 30 to 39 years of age. Palpable breast mass. Initial imaging.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>Relative Radiation Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>US breast</td>
<td>Usually Appropriate</td>
<td>O</td>
</tr>
<tr>
<td>Digital breast tomosynthesis diagnostic</td>
<td>Usually Appropriate</td>
<td>♦♦</td>
</tr>
<tr>
<td>Mammography diagnostic</td>
<td>Usually Appropriate</td>
<td>♦♦</td>
</tr>
<tr>
<td>Digital breast tomosynthesis screening</td>
<td>Usually Not Appropriate</td>
<td>♦♦♦</td>
</tr>
<tr>
<td>Mammography screening</td>
<td>Usually Not Appropriate</td>
<td>♦♦♦</td>
</tr>
<tr>
<td>Image-guided core biopsy breast</td>
<td>Usually Not Appropriate</td>
<td>Varies</td>
</tr>
<tr>
<td>Image-guided fine needle aspiration breast</td>
<td>Usually Not Appropriate</td>
<td>Varies</td>
</tr>
<tr>
<td>MRI breast without and with IV contrast</td>
<td>Usually Not Appropriate</td>
<td>O</td>
</tr>
<tr>
<td>MRI breast without IV contrast</td>
<td>Usually Not Appropriate</td>
<td>O</td>
</tr>
<tr>
<td>Sestamibi MBI</td>
<td>Usually Not Appropriate</td>
<td>♦♦♦♦</td>
</tr>
<tr>
<td>FDG-PET breast dedicated</td>
<td>Usually Not Appropriate</td>
<td>♦♦♦♦♦♦</td>
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</tbody>
</table>

These imaging modalities were ordered by the physician.
Diagnostic Mammogram (unlabeled)
Diagnostic Mammogram (labeled)

Focal asymmetry at posterior depth corresponding to area of palpable lump
Repeat diagnostic mammogram following triangular marker placement.

Triangular marker placed at area of palpable lump on physical exam.
Breast MRI (unlabeled)
(performed 4 months later due to persisting palpable mass with indeterminate mammographic findings)
Breast MRI (labeled)

- T1 non-fat saturated pre-contrast image through both breasts demonstrates non-mass lesion with low signal intensity.
- Subtraction post-contrast image demonstrating an area of non-mass enhancement.
- Dynamic post-T1 fat saturated image demonstrating an area of non-mass enhancement.
- T2 fat saturated image demonstrating inherent high signal intensity.
Differential Diagnosis for Focal Asymmetry on Mammography and NME on MRI

• ddx for focal asymmetry on mammography
  • Simple cyst, fat necrosis, ectopic breast tissue, focal fibroglandular tissue (stimulated by hormone replacement or oral contraceptives), invasive ductal carcinoma, invasive lobular carcinoma, tubular carcinoma, primary lymphoma of the breast

• ddx for NME on MRI
  • pseudoangiomatous stromal hyperplasia, atypical ductal hyperplasia, flat epithelial atypia, apocrine metaplasia, radial scar, intraductal papilloma, and complex sclerosing lesions
Final Dx:

Breast Fibromatosis
Breast Fibromatosis

- Breast fibromatosis, also known as desmoid tumor of the breast, is a rare breast tumor that occurs in women of reproductive age.
- Accounts for only 0.2% of all breast tumors.
- Benign and have no metastatic potential however can be locally invasive/infiltrative.
- Presents as a painless breast mass that mammographically and radiologically mimics more concerning malignant entities.
- Definitive diagnosis is made with surgical biopsy, which would show spindle cell proliferation that invades ducts, lobules, and muscle.
Imaging Findings

• Diagnostic Mammogram
  • Presents as a focal asymmetry, which is an asymmetric area of fibroglandular tissue that involves less than one quadrant of breast volume
  • Irregular, hyperdense mass with spiculated margins that typically arises close to the pectoralis muscle
  • Calcification is uncommon

• Ultrasound
  • Hypoechoic, irregular, angular, or indistinctly marginated mass

• MRI
  • TIWI: typically iso or hypointense to parenchyma
  • STIR: variable signal intensity
    • Hypointense fibrous tissue
    • T2- Hyperintense myxoid tissue
  • TIWI +C FS: irregular spiculated mass with variable enhancement
Treatment and Prognosis

• Standard treatment of care is wide local excision with adequate safety margins
• Reoccurrence following surgical removal occurs in about 18-29% of patients
• Reoccurrence most commonly happens within the first two years of surgical removal
• Fibromatosis has an excellent prognosis with a 100% survival rate, as it is not a cancer
References:


