AMSER Case of the Month
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42-year-old female presenting with abnormal high risk screening breast MRI

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Patient Presentation

• **HPI**: 42 year old woman who presents for high risk breast cancer screening. Patient has an IBIS lifetime risk of developing breast cancer of 34%.

• **FHx**: Mother was diagnosed with breast cancer at 48 and had recurrence at age 69. Mother also diagnosed with endometrial cancer at 61.

• **Relevant PMH and Meds**: None
What Imaging Should We Order?
These two imaging modalities were ordered due to the patient’s high lifetime risk of breast cancer.
Findings (unlabeled)

Original exams

One year later
Findings: (labeled)

(A) Bilateral 2D and MLO mammogram images demonstrate asymmetric diffuse enlargement and density in the left breast (arrows) which resolved on a mammogram one year later (B).  

(C) Axial contrast-enhanced, T1 weighted, fat-saturated, subtracted breast MRI demonstrates diffuse asymmetric extensive background enhancement of the left breast (circle) compared to the right. On a follow-up breast MRI one year later (D), this asymmetric enhancement resolved.
PMH withheld

- The patient was exclusively breast feeding only from the left breast
Diffuse Asymmetric Unilateral Enhancement on MRI due to Unilateral Breast Feeding
Case Discussion

• There are many entities that can present with diffuse asymmetric unilateral MRI findings.

• It is important for radiologists to be familiar with the differential of this presentation to ensure the correct diagnosis is considered.

• A thorough history and biopsy is often needed to make a diagnosis.

• This slide will be followed with differentials to consider when asymmetric enhancement is seen on imaging.
Case Discussion Cont.

Possible Differentials

**Diffuse asymmetric masses/non-mass enhancement**

**Malignant**
- Diffuse Invasive ductal carcinoma (IDC) or ductal carcinoma in situ (DCIS)
- Diffuse invasive lobular carcinoma
- Paget's Disease with extensive underlying breast cancer

**Benign**
- Pseudoangiomatous Stromal Hyperplasia (PASH)
- Giant Fibroadenoma/phyllodes
Asymmetric diffuse MRI findings associated with skin and trabecular thickening

**Malignant**
- Inflammatory Breast Cancer (IBC)
- Non-IBC locally advanced breast cancer

**Benign**
- Idiopathic Granulomatous Mastitis
- Lupus Mastitis
- Infectious mastitis
- Early radiation changes
- Unilateral Central Vein Obstruction
Case Discussion Cont.

**Asymmetric relative background parenchymal enhancement (BPE)**

- Late Radiation Changes
- Unilateral Lactation
Unilateral Lactation

The breast undergoes physiologic changes during lactation. This is due to changes in hormones such as estrogen, progesterone, and prolactin. These hormone changes result in ductal proliferation and milk production.

Imaging Findings:

**Mammography:** Increase in parenchymal density which can decrease sensitivity

**Ultrasound:** Echotexture of the breast becomes diffusely echogenic with prominent ducts and increased vascularity

**MRI:** Lactating breast demonstrates increased background parenchymal enhancement, increased vascularity, increased T2 signal intensity, and increased fibroglandular volume.

There are some instances when a woman breastfeeds solely from one breast. In this case, there will be asymmetric unilateral enhancement of the breastfeeding breast. On the follow up MRI with breastfeeding cessation, there was resolution of enhancement in this patient.
References:


