AMSER Case of the Month October 2024

HPI 67-year-old female with right nipple retraction

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Patient Presentation

History of Present Illness: 67-year-old G5P5 female presents for screening mammogram. The patient denies any issues.

Past Medical History: Hypertension, Diabetes Mellitus, hyperlipidemia, chronic pain, obesity, depression, asthma, osteoarthritis, MI

Past Surgical History: no prior surgery or biopsy to right breast, total knee replacement, total abdominal hysterectomy

Patient Presentation

Medications: Carvedilol, Hydralazine, Chlorthalidone, Clopidogrel, Aspirin, Metformin, Topiramate, Oxycodone, Gabapentin, Meloxicam, Citalopram, Montelukast, Statin

Family Medical History: Breast cancer in paternal aunt

Social History: Spanish, widowed, non-smoker, drinks alcohol occasionally

Gynecological History: Onset of menses at 14 yo; first delivery at 19 yo; patient did not breastfeed; menopause occurred at age 51

What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

Variant 1: **Adult female. Breast cancer screening. Average risk.**

Procedure	Appropriateness Category	Relative Radiation Level
Digital breast tomosynthesis screening	Usually Appropriate	☢☢
Mammography screening	Usually Appropriate	☢☢
US breast	May Be Appropriate	O
MRI breast without and with IV contrast	May Be Appropriate	O
MRI breast without and with IV contrast abbreviated	May Be Appropriate	O
Mammography with IV contrast	Usually Not Appropriate	☢☢
MRI breast without IV contrast	Usually Not Appropriate	O
MRI breast without IV contrast abbreviated	Usually Not Appropriate	O
Sestamibi MBI	Usually Not Appropriate	☢☢☢

This imaging modality was ordered

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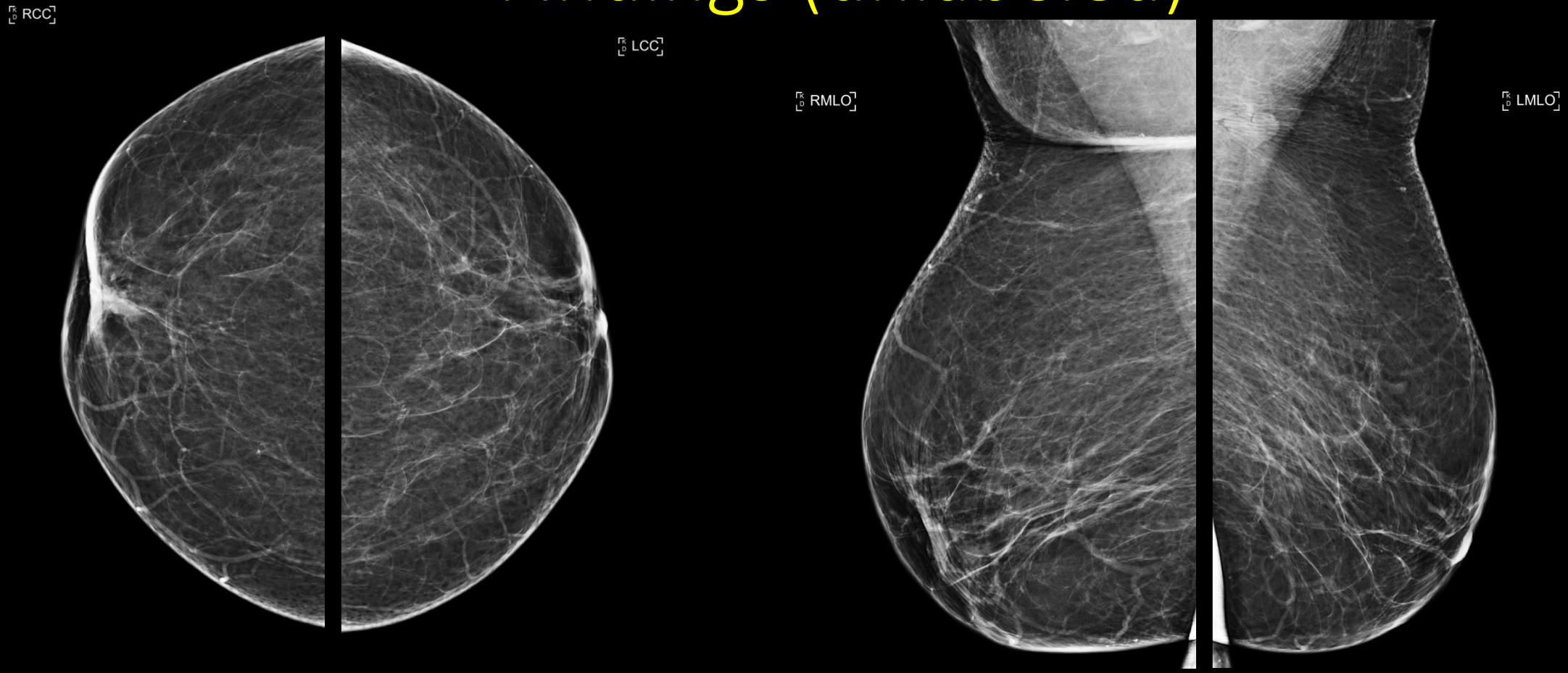
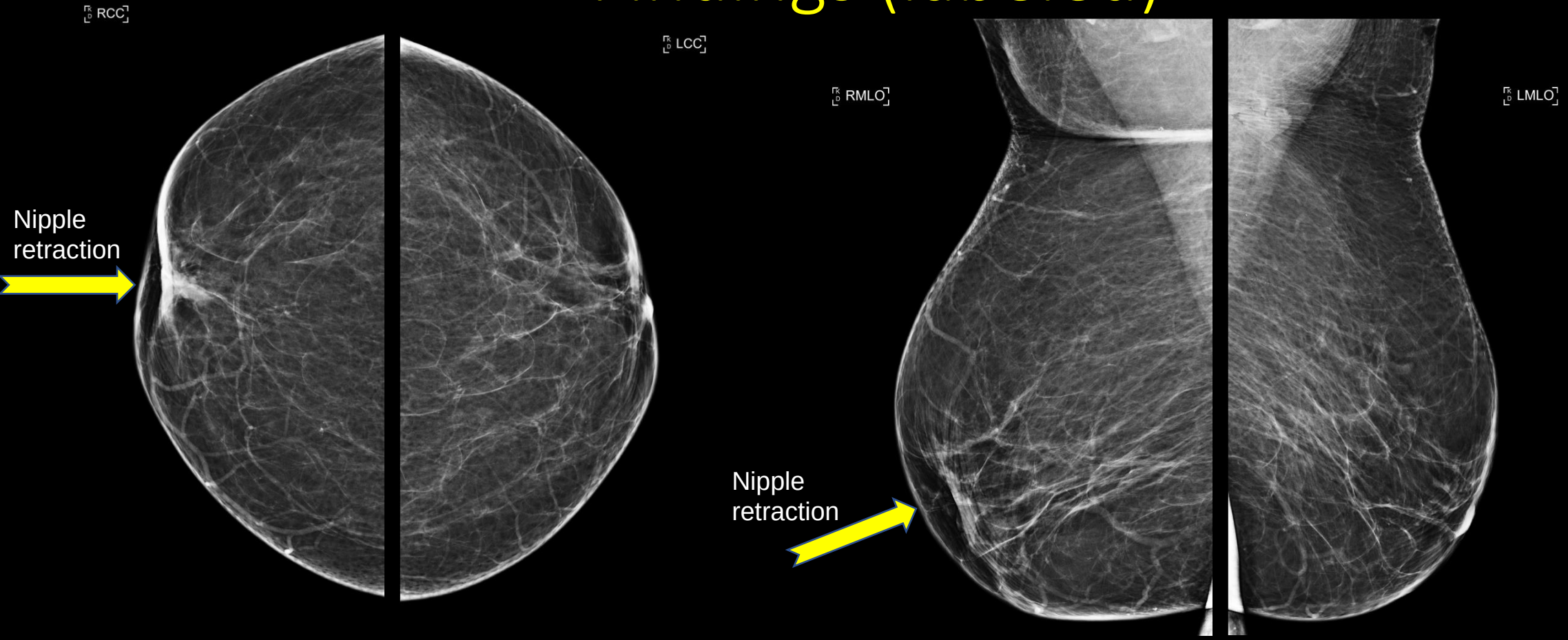
Findings (unlabeled)



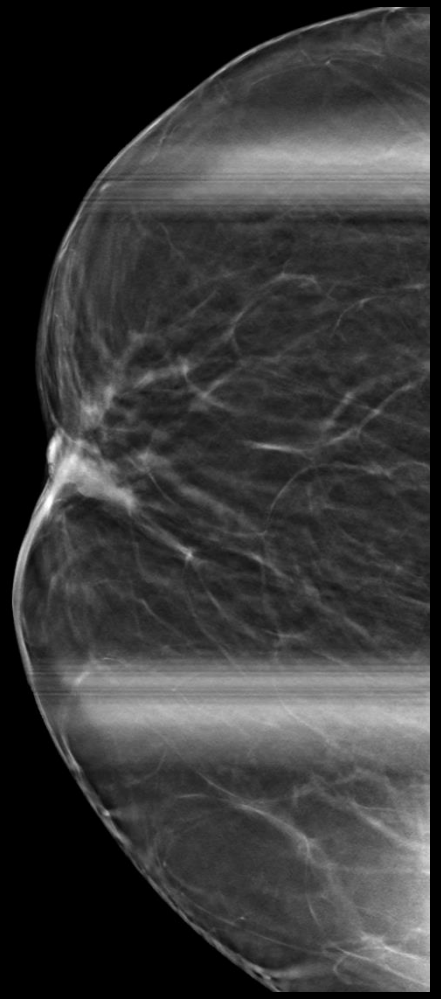
Screening Mammogram Bilateral CC and MLO views

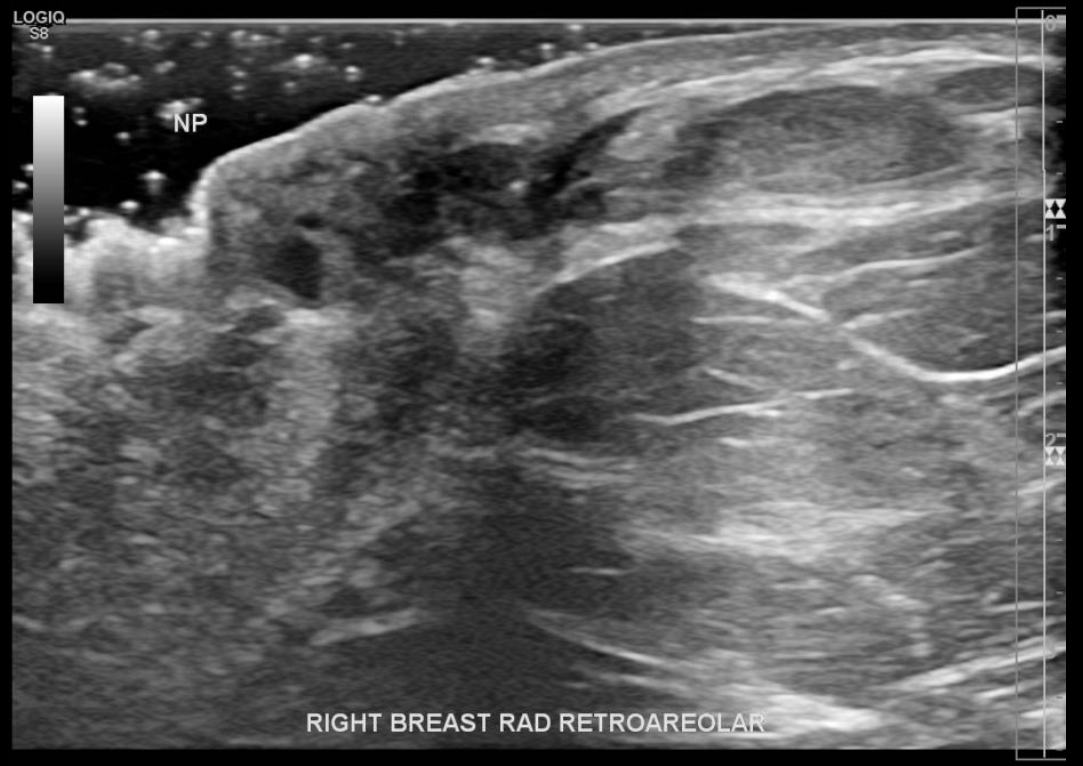
Findings (labeled)



Screening Mammogram Bilateral CC and MLO views demonstrate RIGHT skin thickening and nipple retraction.
BIRADS 0: Needs additional imaging: Return for right diagnostic mammogram and ultrasound

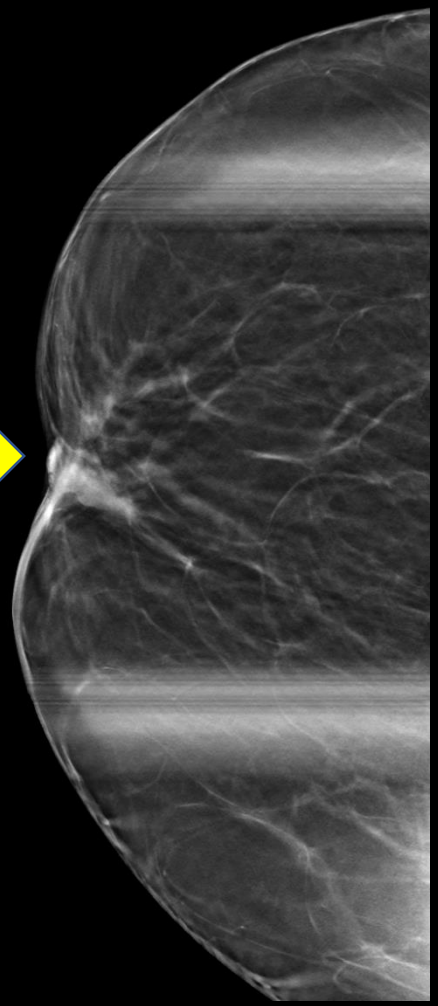
Findings: (unlabeled)



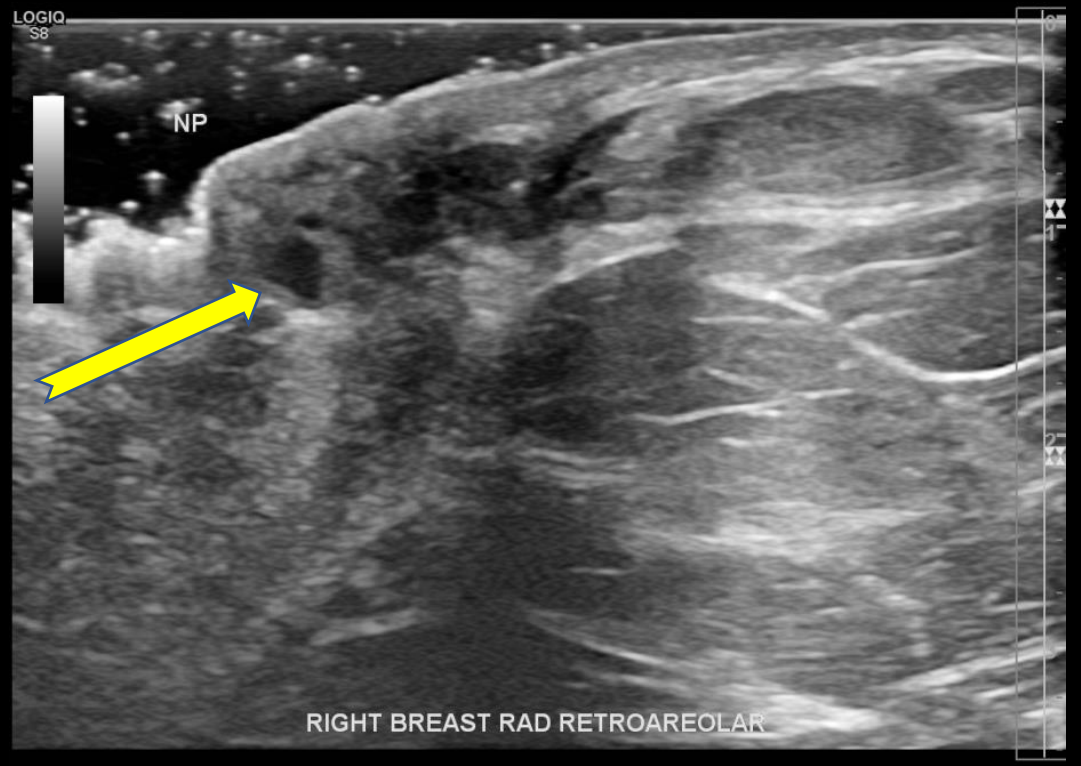


Findings: (labeled)

Nipple retraction confirmed



questioned subcm hypoechoic mass in the immediate retroareolar region



Diagnostic mammogram and ultrasound recommended breast surgeon consultation and Breast MRI. Ultrasound guided biopsy technically difficult due to close proximity to base of nipple.

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Patient Presentation to breast surgeon after imaging

Labs: Chem 7 Glucose 105 (normal < 152) platelet count 454 (normal < 450), otherwise normal

Vitals: BP 191/73 (site: right arm, position: sitting, cuff size: adult large), pulse 58 bpm temp 98.7 F (36.7 C) temporal, resp 17 Ht 1.626 m (5’4”) Wt 105.6 kg (232 lb 12.8 oz) SpO2 96% BMI 39.96 kg/m^2

Physical exam:

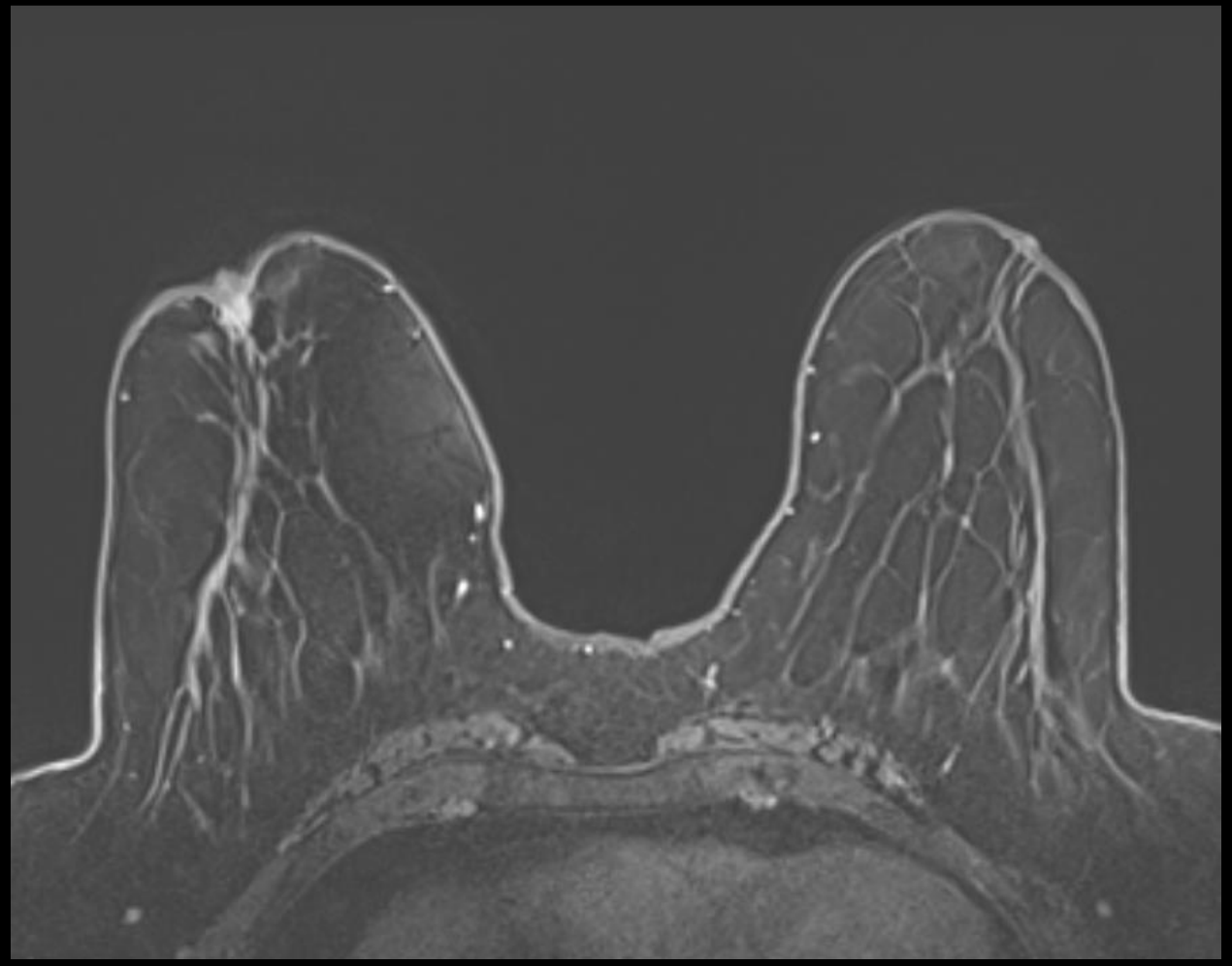
- Constitutional: well-appearing
- HEENT: no scleral icterus, grossly normal vision and hearing
- CV: regular rate, extremities non-swollen
- GI: Abdomen soft and non-tender
- MSK: Upper extremity with normal range of motion
- Neuro: Nonfocal

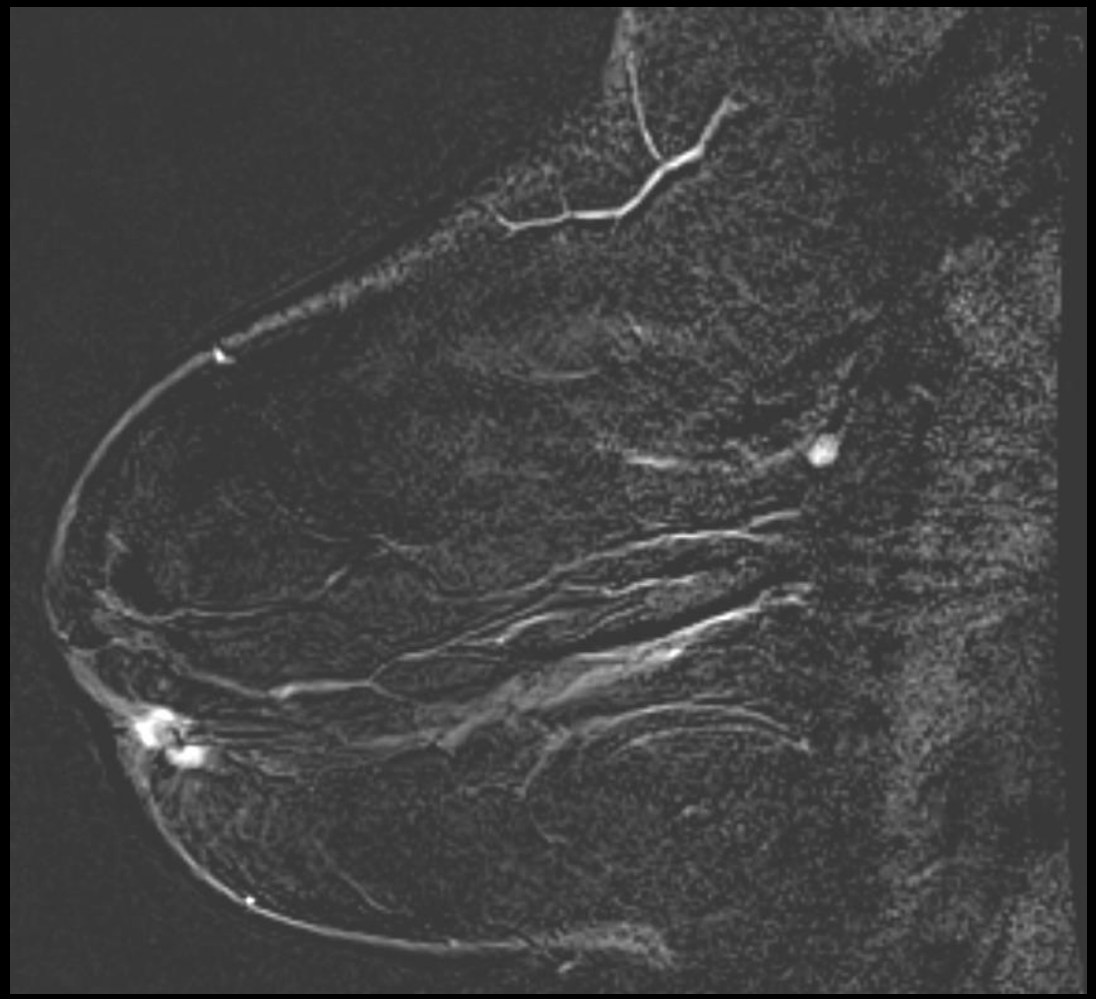
Patient Presentation to breast surgeon after imaging

Physical exam for the breasts: **Right breast:** there is a 1 cm mass in the subareolar position. There are no inflammatory skin changes or nipple-areolar complex abnormalities. There is specifically no clinically apparent nipple retraction. **Left breast**: there are no dominant masses, inflammatory skin changes, or nipple-areolar complex abnormalities. No palpable axillary, supraclavicular, or clavicular lymphadenopathy bilaterally.

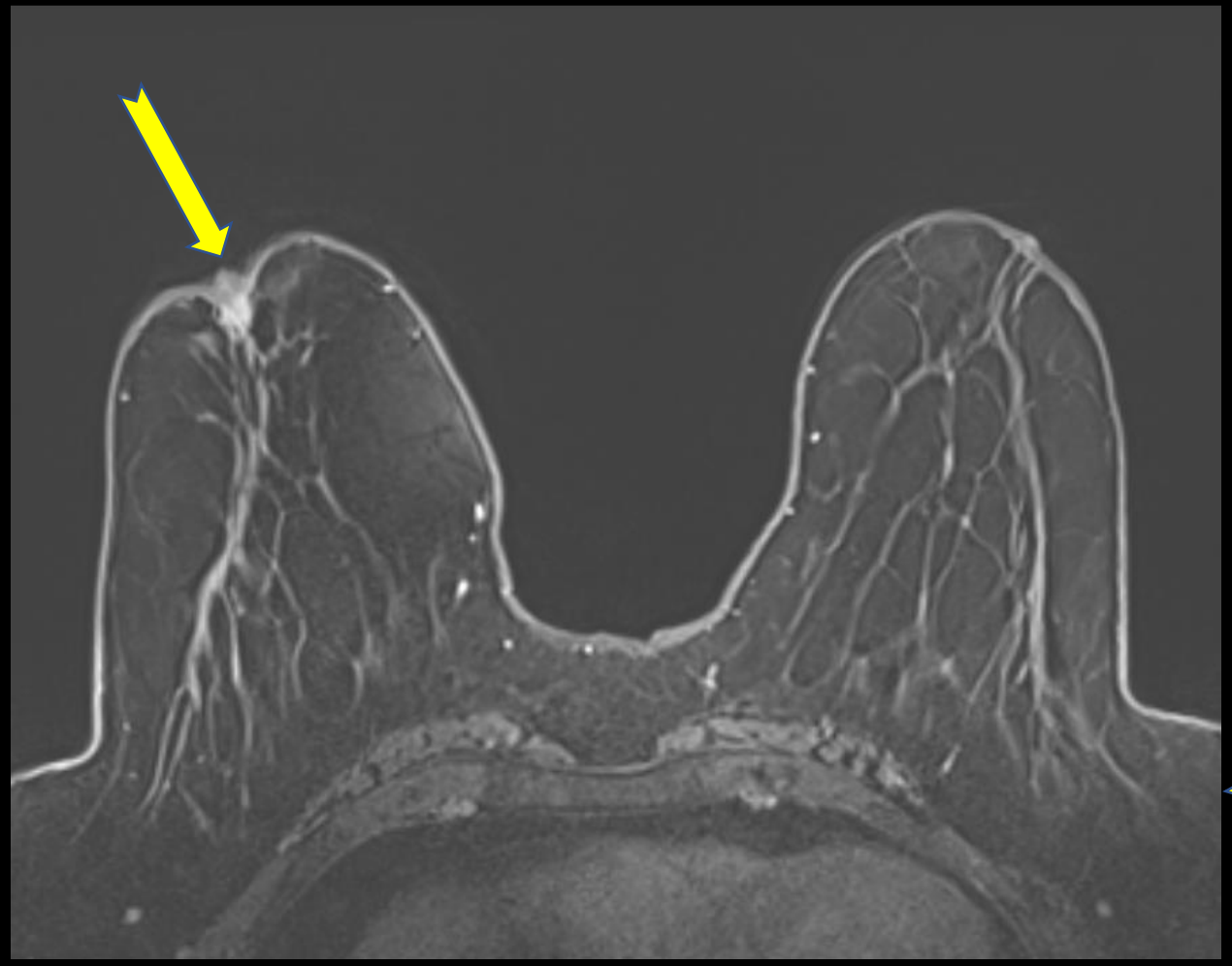
Based on physical exam and questioned imaging findings, breast surgeon recommended further evaluation with breast MRI to help guide further management.

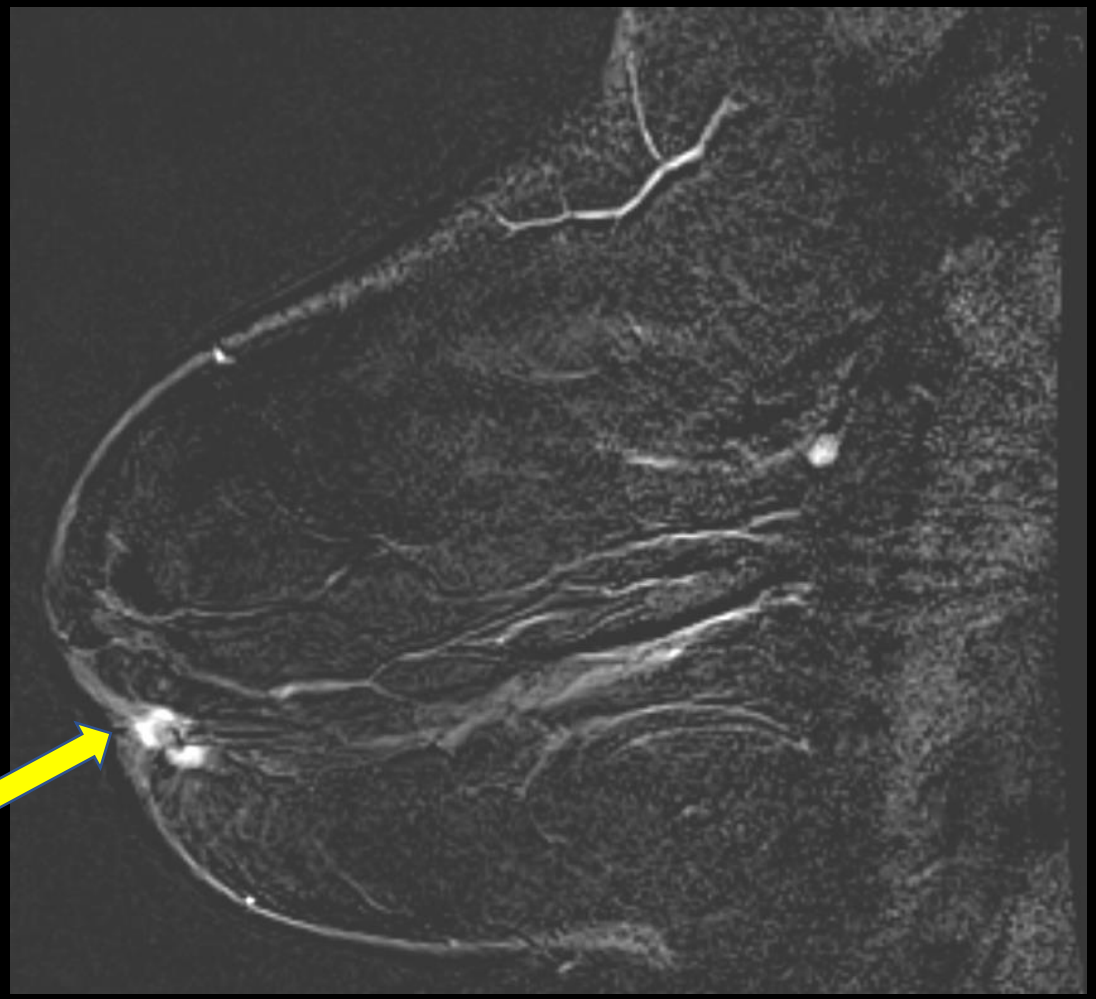
Findings (unlabeled)





Findings (labeled)





Right nipple retraction with associated discontinuous irregular non-mass enhancement at the base of the nipple, corresponding to questioned ultrasound finding. Due to close proximity to the base of the nipple, this is not amenable to percutaneous ultrasound-guided core needle biopsy.
BI-RADS 4: Right breast surgical biopsy recommended.

Final Diagnosis:

Invasive Ductal Carcinoma

Case Discussion: Invasive Ductal Carcinoma

- About: Most common type of breast cancer accounting for 80% of cases. Occurs when abnormal cells growing in lactiferous ducts invade adjacent breast tissue and can spread to the lymph nodes.
- Presentation: Most commonly presents as a mass on physical exam (typically 2 cm or greater) or on mammogram (no specified size on imaging). Advanced tumors can show retraction of the skin or the nipple.
- Imaging: On ultrasound, typically seen as a mass of variable shape, with angular margins, and non-parallel orientation. MRI shows enhancing mass with spiculated irregular margins.

Case Discussion: Invasive Ductal Carcinoma (cont'd)

- Pathology: Consists of duct-like structures in a desmoplastic stroma. The most common subtype is non-specified. The other cases of invasive ductal carcinoma are separated into three subtypes: 1) tubular carcinoma- well differentiated tubules that lack myoepithelial cells, 2) mucinous carcinoma- abundant extracellular mucin, and 3) medullary carcinoma- large, high-grade cells growing in sheets with associated lymphocytes
- Epidemiology: most common in women aged 70 and above
- Management: lumpectomy + radiation therapy versus mastectomy

Our Case/ Clinical Course

- Partial mastectomy (lumpectomy) performed of right breast areolar complex
  - Showed invasive ductal carcinoma with lobular growth pattern and histologic grade 2 (score 6= 3+2+1), 8 mm in maximum dimension
  - Margins of resection were negative for carcinoma
  - Skin negative for carcinoma and no lymphatic or vascular invasion identified
- Excision performed of right axillary sentinel lymph node
  - One lymph node, negative for carcinoma supported by pancytokeratin immunohistochemical stain

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