

AMSER Rad Path Case of the Month

63 YOF presents with palpable breast mass

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Patient Presentation

- HPI: 63 YOF presents with two palpable, nonpainful masses in the right breast
- PMHx:
 - 2021 R breast bx - Sclerosing intraductal papilloma (radial scar)
- PFHx: No family history of breast cancer

What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

Variant 1:

Adult female, 40 years of age or older. Palpable breast mass. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
Digital breast tomosynthesis diagnostic	Usually Appropriate	☼☼
Mammography diagnostic	Usually Appropriate	☼☼
US breast	May Be Appropriate	○
Digital breast tomosynthesis screening	Usually Not Appropriate	☼☼
Mammography screening	Usually Not Appropriate	☼☼
Image-guided core biopsy breast	Usually Not Appropriate	Varies
Image-guided fine needle aspiration breast	Usually Not Appropriate	Varies
MRI breast without and with IV contrast	Usually Not Appropriate	○
MRI breast without IV contrast	Usually Not Appropriate	○
Sestamibi MBI	Usually Not Appropriate	☼☼☼
FDG-PET breast dedicated	Usually Not Appropriate	☼☼☼

This imaging modality was ordered by the primary care physician

Findings: (unlabeled)

linear LUT1/2
KLE
1/3→R CC▼
Age at exam: 65 years
Angle: -0.05
Angle: 0
D O S

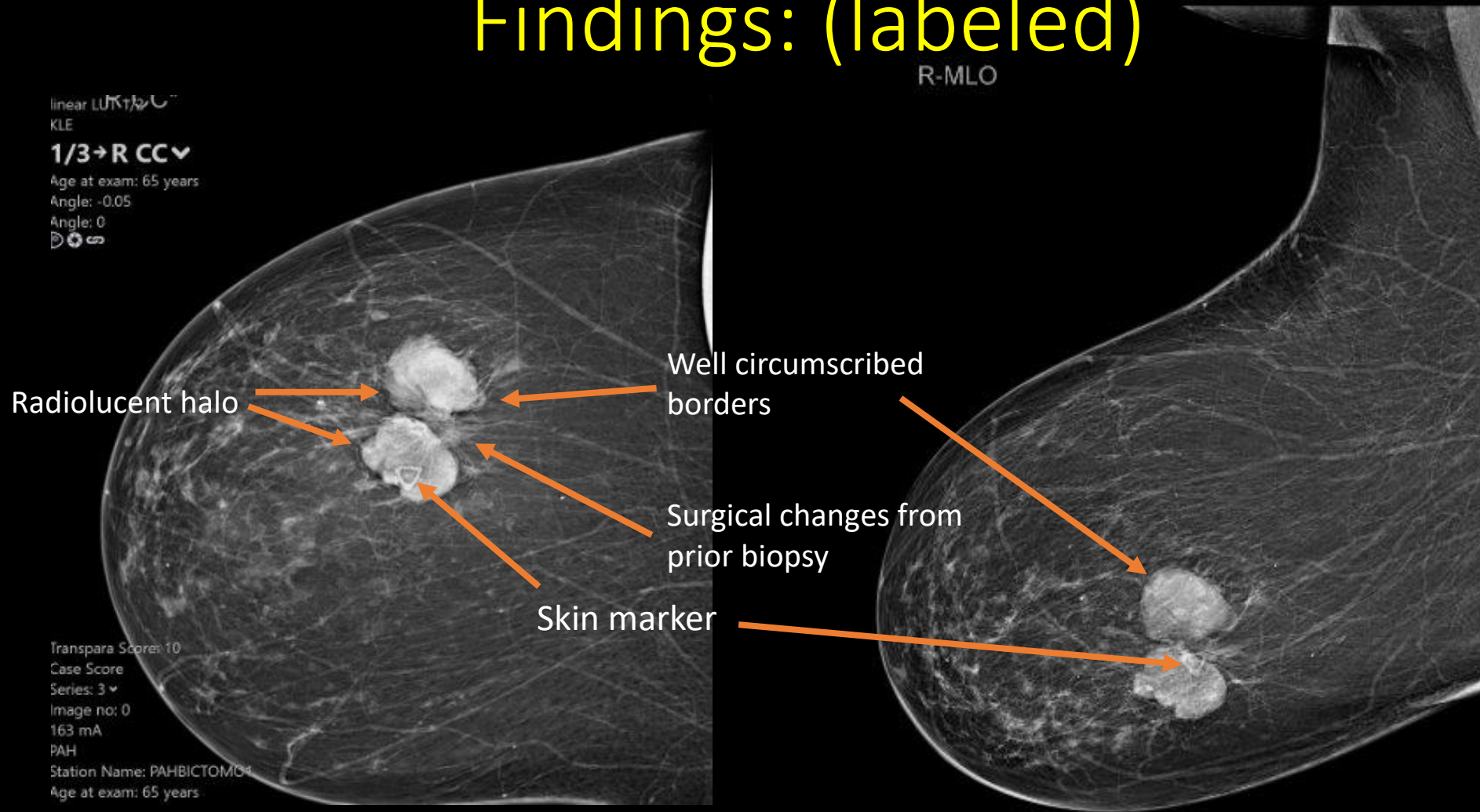
Transpara Scores: 10
Case Score
Series: 3▼
Image no: 0
163 mA
PAH
Station Name: PAHBICOM01
Age at exam: 65 years



R-MLO



Findings: (labeled)



Two high density circumscribed oval masses in the lower outer breast

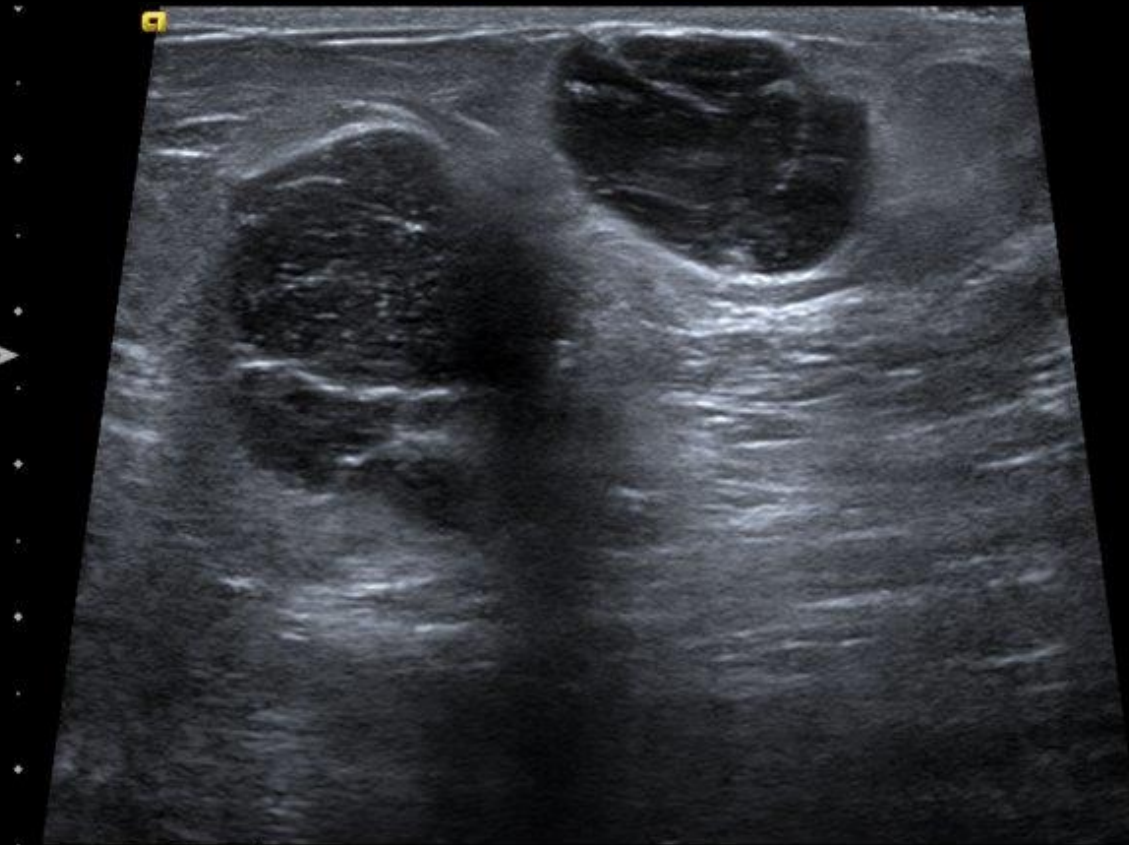
Next steps for imaging?

Select the applicable ACR Appropriateness Criteria

Variant 2: Adult female, 40 years of age or older. Palpable breast mass. Mammography findings are suspicious or highly suggestive of malignancy (BI-RADS 4 or 5). Next imaging study.		
Procedure	Appropriateness Category	Relative Radiation Level
US breast	Usually Appropriate	0
Image-guided core biopsy breast	Usually Not Appropriate	Varies
Image-guided fine needle aspiration breast	Usually Not Appropriate	Varies
MRI breast without and with IV contrast	Usually Not Appropriate	0
MRI breast without IV contrast	Usually Not Appropriate	0
Sestamibi MBI	Usually Not Appropriate	☢☢☢
FDG-PET breast dedicated	Usually Not Appropriate	☢☢☢

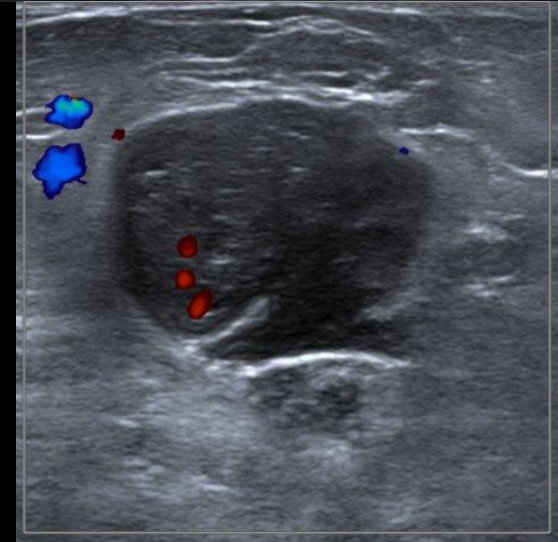
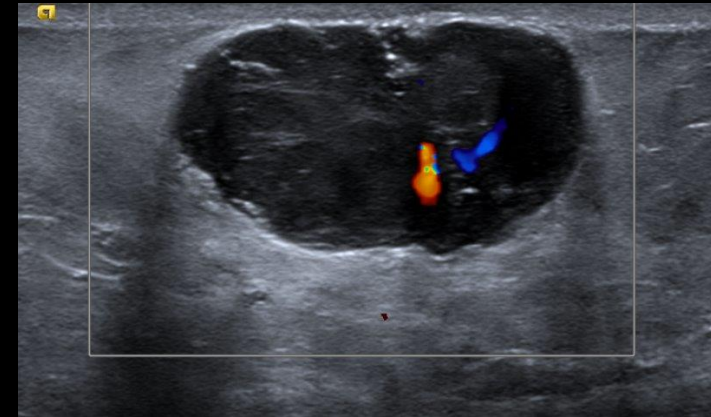
This imaging modality was recommended by the breast radiologist

Findings: (unlabeled)

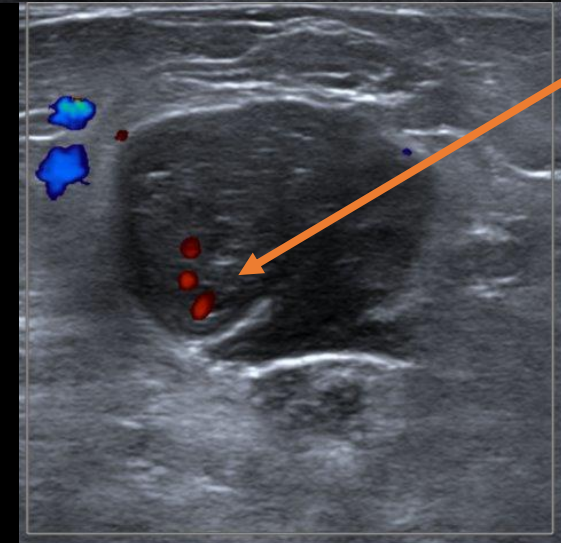
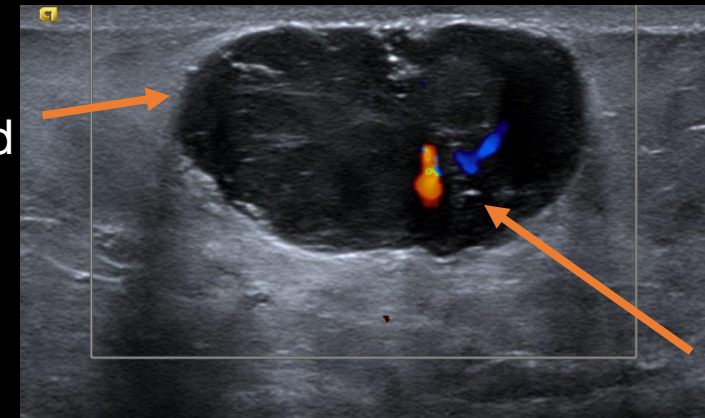
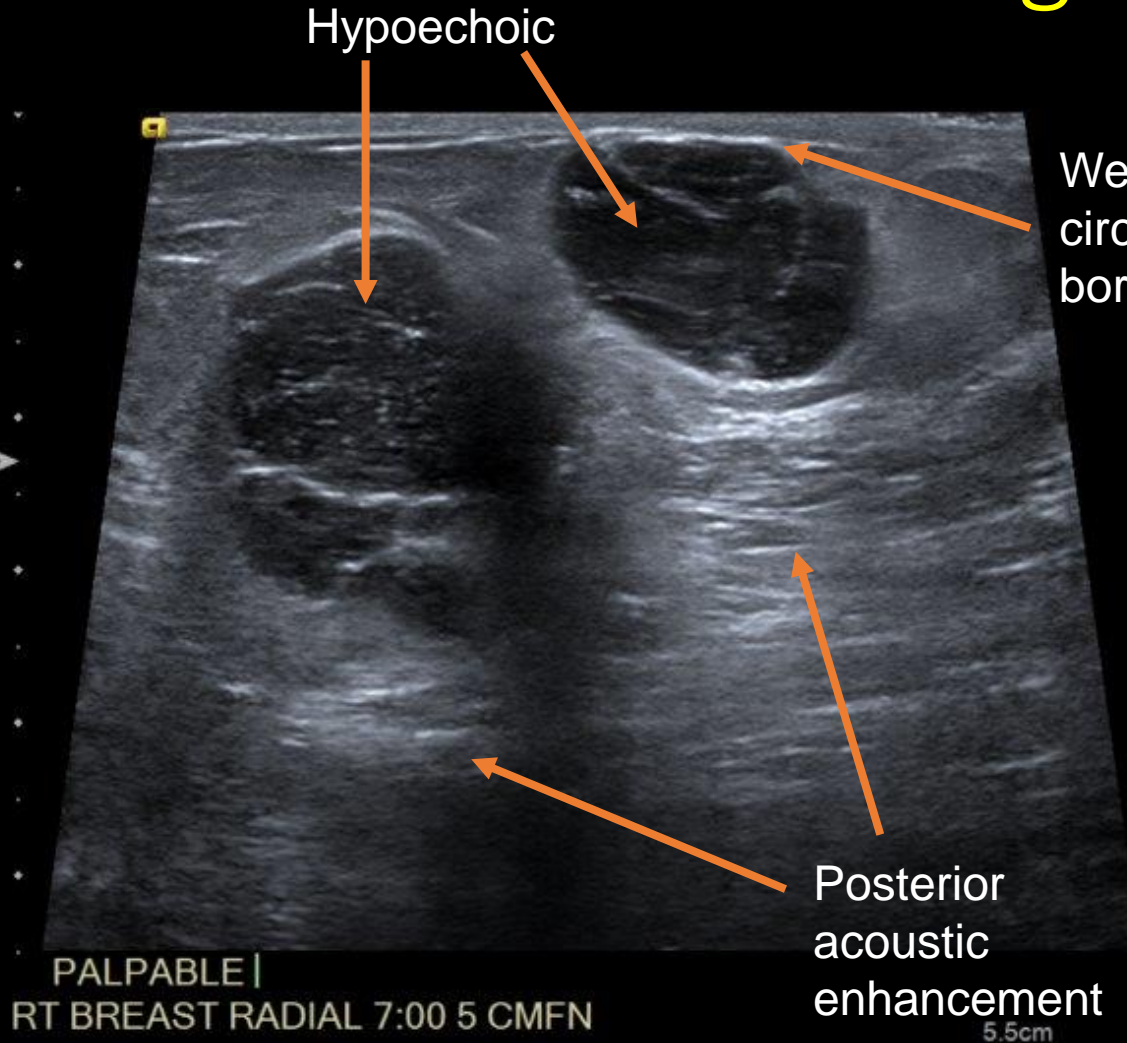


PALPABLE |
RT BREAST RADIAL 7:00 5 CMFN

5.5cm



Findings: (labeled)



Differential

Fibroadenoma

Phyllodes tumor

Primary sarcoma

Periductal stromal tumor

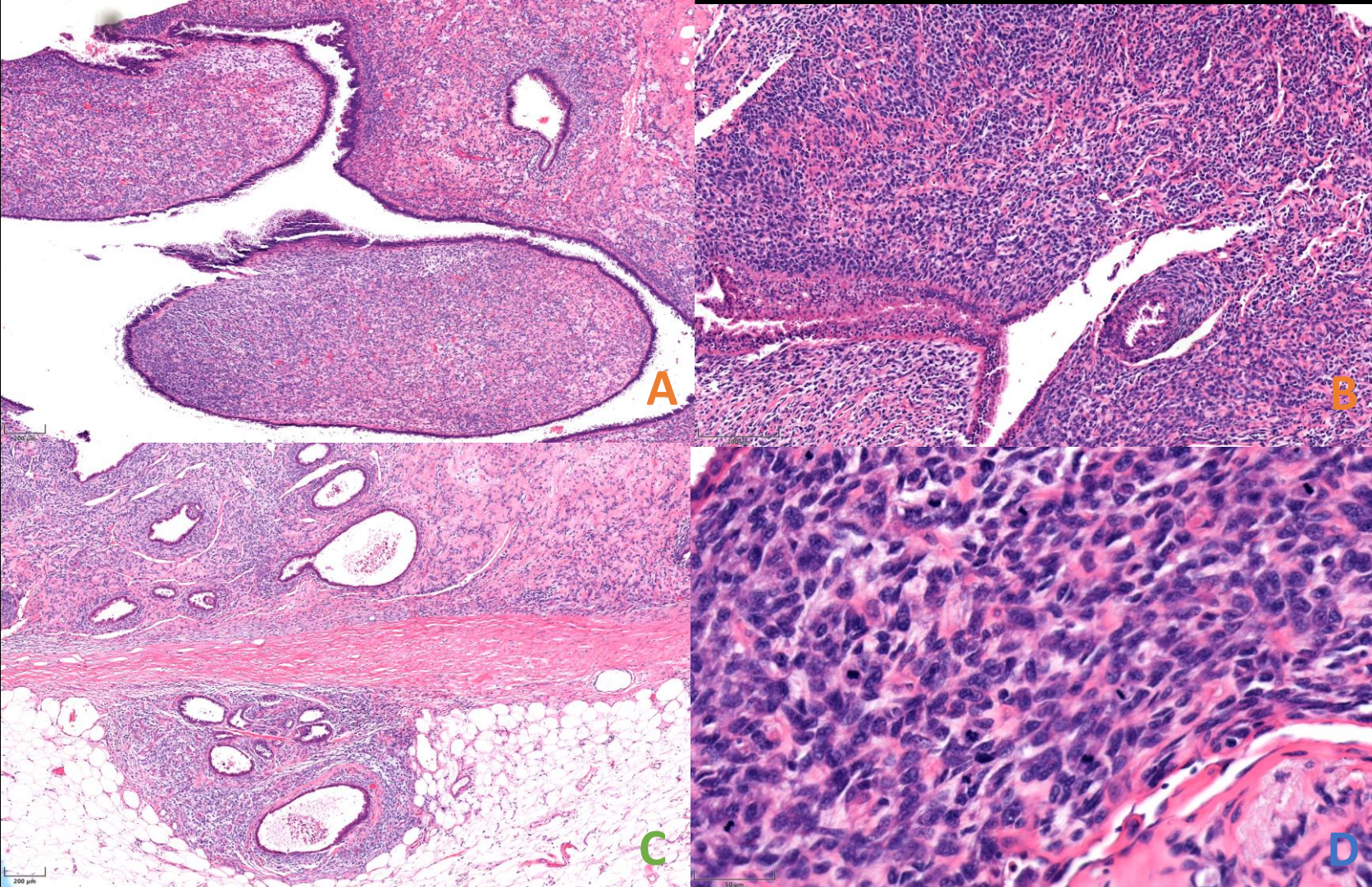
Gross Pathology (labeled)



Excisional biopsy performed

R

Micro Pathology (labeled)



Histopathologic examination of the right partial mastectomy specimen (H&E).

A-B. This tumor is composed of **hypercellular stroma and benign epithelium** in a pattern typical of Phyllodes tumor (A. 5x, B.10x).

C-D. The tumor shows **infiltrative borders** (C. 5x) and **significant mitotic activity** (up to 26 mitoses per 10 high-power fields, D. 40x).

There is no evidence of stromal overgrowth, necrosis, heterologous elements, or marked cytologic stromal atypia.

Final Dx:

Borderline Phyllodes Tumor

Case Discussion

- Phyllodes tumors make up <1% of all breast tumors
- Typical presentation: 40-60 y.o. woman
- Clinical presentation:
 - Firm, mobile, painless mass
 - Smooth, multinodular, well-defined
 - Variable size and rate of growth
 - Rarely: Palpable axillary lymphadenopathy, nipple retraction, ulceration, chest wall fixation, bilateral disease

Case Discussion

- Indistinguishable from fibroadenoma on imaging (requires biopsy)
 - Larger size and fast growth more concerning for phyllodes
- Classic imaging findings:
 - Large, oval/lobulated, well-circumscribed, smooth margins
 - Radiolucent halo may be present
 - Calcification (typically coarse and plaque-like) may be seen
 - U/S: Solid mass, hypoechoic, well-circumscribed
 - May have cystic elements, posterior acoustic enhancement, vascularization in solid components

Case Discussion

- Histologic classifications:
 - Benign
 - Borderline
 - Malignant
- Higher classification is associated with faster growth, with higher likelihood of locally recurring or developing metastases

Histologic Features	Benign	Borderline	Malignant
Mitotic activity	<4/10 HPF	4–9/10 HPF	≥10/10 HPF
Stromal cellular atypia	Mild	Marked	Marked
Stromal overgrowth	Absent	Absent	Present
Tumor margins	Circumscribed	Circumscribed or infiltrative	Infiltrative

HPF=high power field.

Case Discussion

- Management:
 - Benign: excisional biopsy, goal of clear margins
 - Borderline/Malignant: wide excision, goal of >1 cm margins
 - Need for re-excision determined case-by-case
- Incomplete excision associated with local recurrence, metastatic spread

Factors associated with local recurrence	Factors associated with distant metastases in borderline or malignant tumors
Positive resection margin or resection within 1 cm	Stromal overgrowth
Increased mitotic index	Stromal cellularity
Tumor necrosis	Stromal atypia
Large tumor size	Positive resection margin or resection within 1 cm
	Increased mitotic index
	Tumor necrosis
	Large tumor size

References

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