

AMSER Case of the Month

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63 yo female presents for annual screening mammogram

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Patient Presentation

63 year old G6P5 female presents with a new breast mass on annual screening mammogram. The patient denies any concerns on self breast exams. She also denies any visible changes to either breast or any nipple discharge. There is no history of prior breast related issues or biopsies.

Patient Presentation

PMH: Asthma, Diabetes Mellitus, Hypertension, Hiatal Hernia

Family Hx: Stomach cancer in mother, maternal grandmother and maternal aunt; no other hx of breast, ovarian, endometrial, or colon cancer

Social Hx: Pt smokes cigarettes, about 0.5 PPD with a 7.5 total pack years; Pt drinks alcohol occasionally; Denies other drug use

Physical Exam: Bilateral breast exam shows no skin dimpling, retraction discharge, or masses; no palpable axillary, supraclavicular or clavicular lymphadenopathy bilaterally

Gynecologic Hx: Onset of menses at 12 yo; First delivery at 18 yo; G6P5; has never used HRT; Used OCPs for ~3 mo; Menopause occurred in her 40s

What Imaging Should We Order?

ACR Appropriateness Criteria

Variant 1:

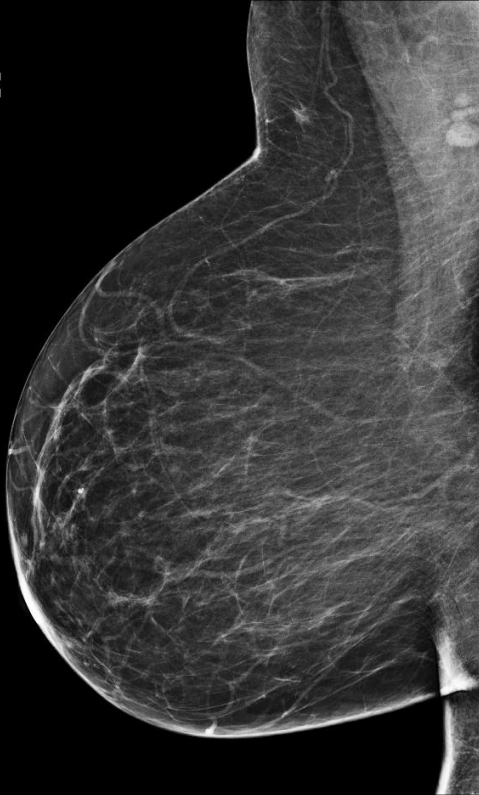
Breast cancer screening. Average-risk women: women with <15% lifetime risk of breast cancer.

Procedure	Appropriateness Category	Relative Radiation Level
Mammography screening	Usually Appropriate	☼☼
Digital breast tomosynthesis screening	Usually Appropriate	☼☼
US breast	May Be Appropriate	○
MRI breast without and with IV contrast	Usually Not Appropriate	○
MRI breast without IV contrast	Usually Not Appropriate	○
FDG-PET breast dedicated	Usually Not Appropriate	☼☼☼☼
Sestamibi MBI	Usually Not Appropriate	☼☼☼

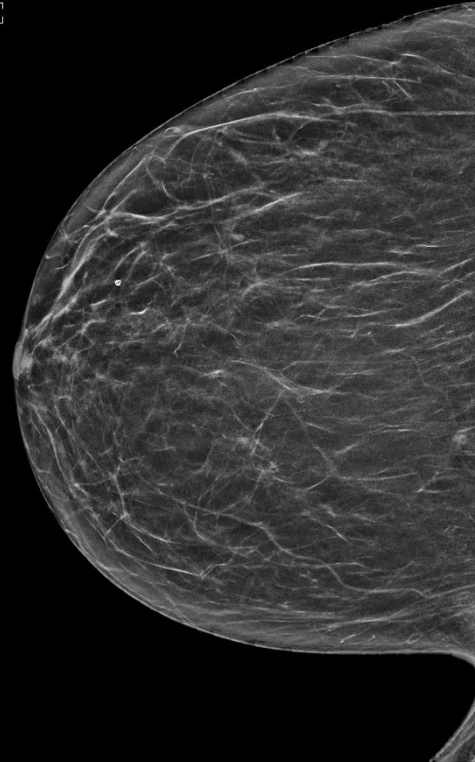
These imaging modalities were ordered

Findings (unlabeled)

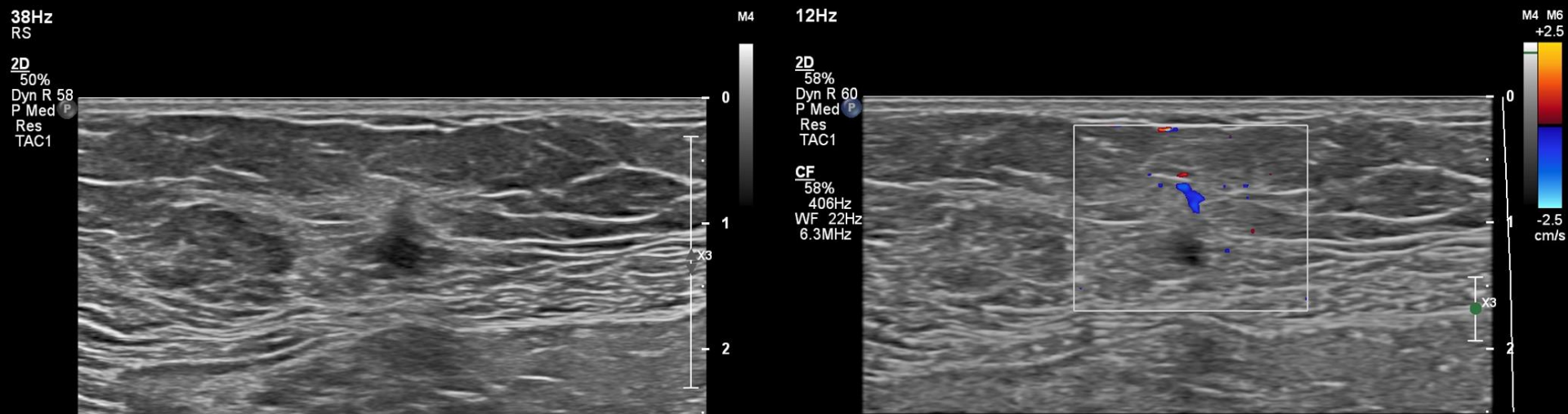
[RML0]



[RCC]



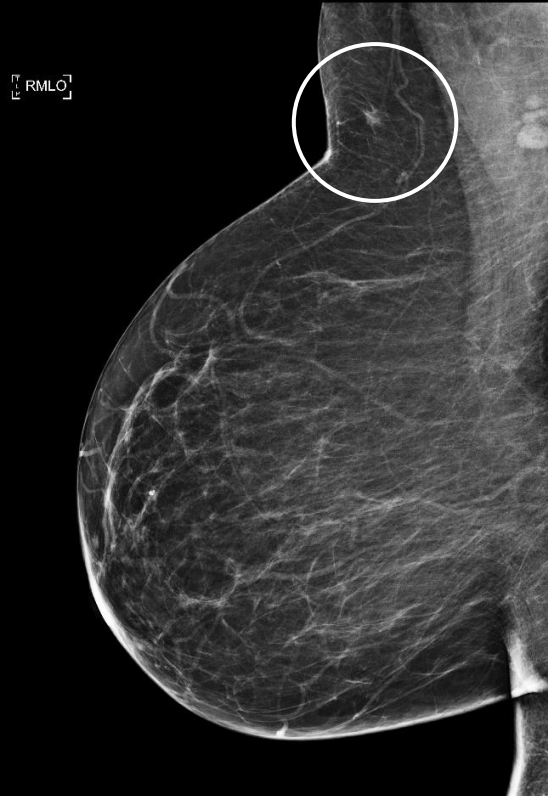
Findings (unlabeled)



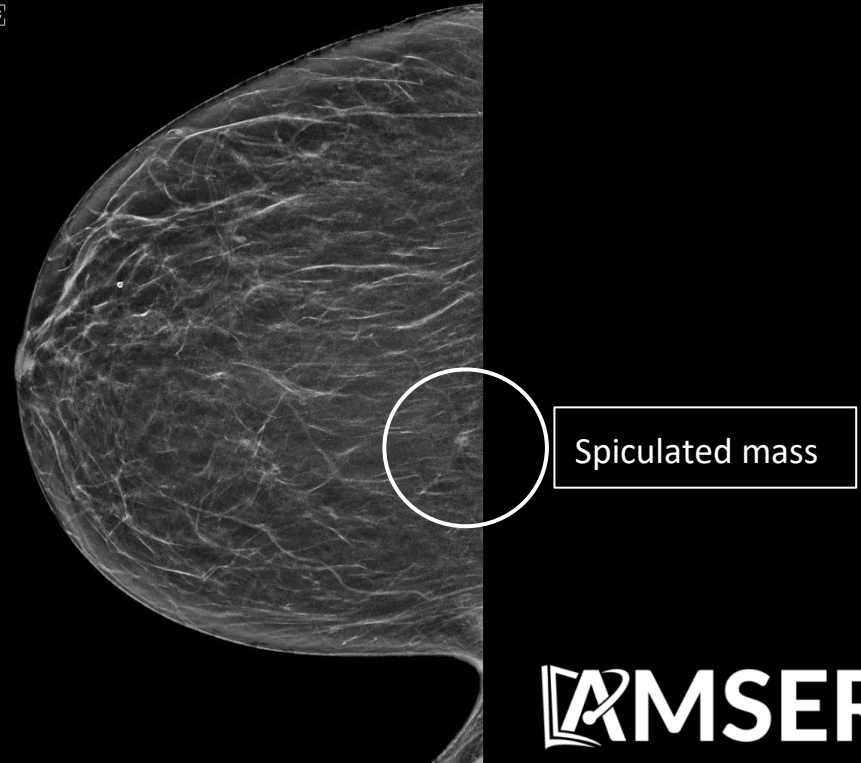
Right Breast 11:00 16 CMFN A Rad |

Right Breast 11:00 16 CMFN A Rad

Findings (labeled)

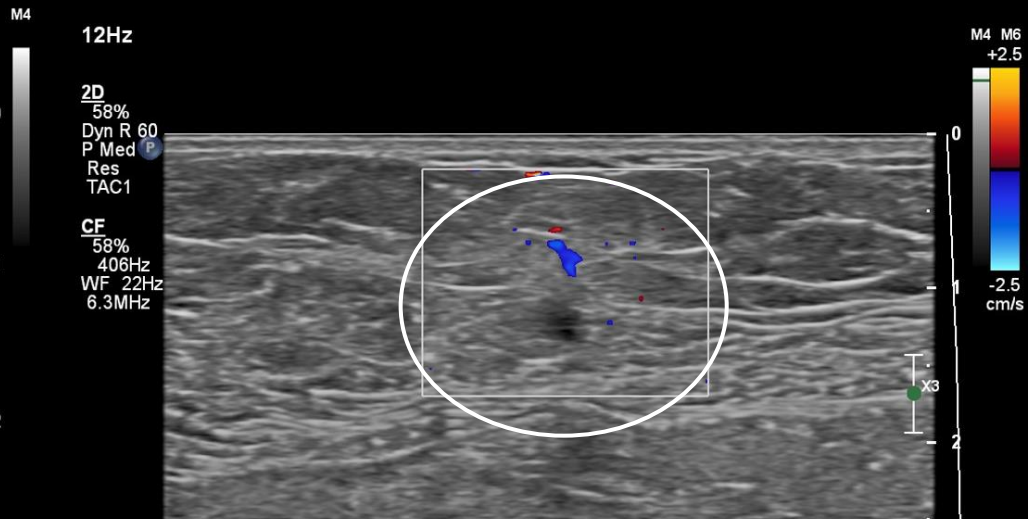
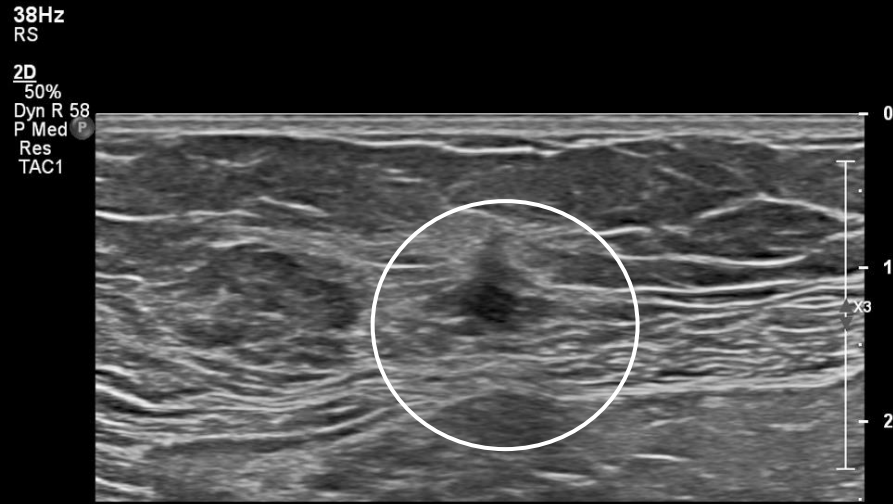


[RCC]



Findings (labeled)

A 0.4cm x 0.4cm x 0.5cm irregular hypoechoic mass with posterior acoustic shadowing in the right breast at 11:00 16cm from the nipple, corresponding to mammographic finding



Right Breast 11:00 16 CMFN A Rad |

Right Breast 11:00 16 CMFN A Rad

Final Diagnosis:

Granular Cell Tumor based on ultrasound-guided biopsy of the mass

Granular Cell Tumor

- **About**
 - Rare tumor composed of Schwann cells that is often benign and can be found anywhere on the body, but is most common in the skin, oral cavity, and digestive tract
 - Between 5-8% of cases are found in the breast, where it often mimics the characteristics of breast carcinoma clinically, radiographically, and microscopically
 - Also known as Abrikosoff's tumor, Granular cell myoblastoma, Granular cell nerve sheath tumor, and Granular cell schwannoma
- **Epidemiology**
 - Most common in women aged 30-50 yo
 - Frequency of ~1 in 1000 breast cancers
 - Arises from the intralobular breast stroma and occurs within the distribution of the cutaneous branches of the supraclavicular nerve often in the upper inner quadrant

Granular Cell Tumor

- **Clinical Presentation**

- May mimic carcinoma with a palpable mass with a hard, fibrous consistency

- **Radiographic Presentation**

- **Mammography** - Masses may appear ill-defined or spiculated, which can be similar to carcinoma
 - Microcalcifications are atypical
- **Ultrasound** - Presentation can vary depending on the extent of infiltration and the degree of reactive fibrosis with tumors appearing as solid, hypoechoic, ill-defined masses with posterior shadowing or circumscribed, oval masses with posterior enhancement

Granular Cell Tumor

- **Diagnosis**
 - Because imaging appearance can vary, pathological investigation is necessary
 - Cells characteristically have eosinophilic granules and abundant cytoplasm
 - Positive immunohistochemical staining for S-100, CD68 (KP-1), Neuron-specific enolase, and CEA supports the Schwann cell origin of granular cell tumors
- **Treatment**
 - Wide local excision is the standard treatment as the tumor has no capsule and proliferation is invasive
- **Prognosis**
 - Excellent - Recurrence has been observed in cases with incomplete resection

References:

- Brown, A, Audisio, R, Regitnig, P. Granular Cell Tumor of the Breast. *Surgical Oncology*. 2011;20(2):97-105. <https://doi.org/10.1016/j.suronc.2009.12.001>.
- Pujani M, Singh K, Raychaudhuri S, et al. Granular Cell Tumor Breast Masquerading as a Malignancy Cytologically: a Rare Case Presenting a Diagnostic Dilemma. *Indian J Surg Oncol*. 2020;11(2):321-324. doi:10.1007/s13193-020-01055-0
- Radswiki T, Knipe H, Alsmair A, et al. Granular cell tumor of the breast. Reference article, Radiopaedia.org (Accessed on 29 Sep 2023) <https://doi.org/10.53347/rID-14932>
- Rexeena B, Paul A, Nitish RA, Kurian C, Anila RK. Granular Cell Tumor of Breast: a Case Report and Review of Literature. *Indian J Surg Oncol*. 2015;6(4):446-448. doi:10.1007/s13193-015-0455-3