

# RADY 413 Case Presentation

Neha Verma MS4  
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31-year-old female at 12 weeks  
gestation presenting with new right  
breast mass

# Patient history

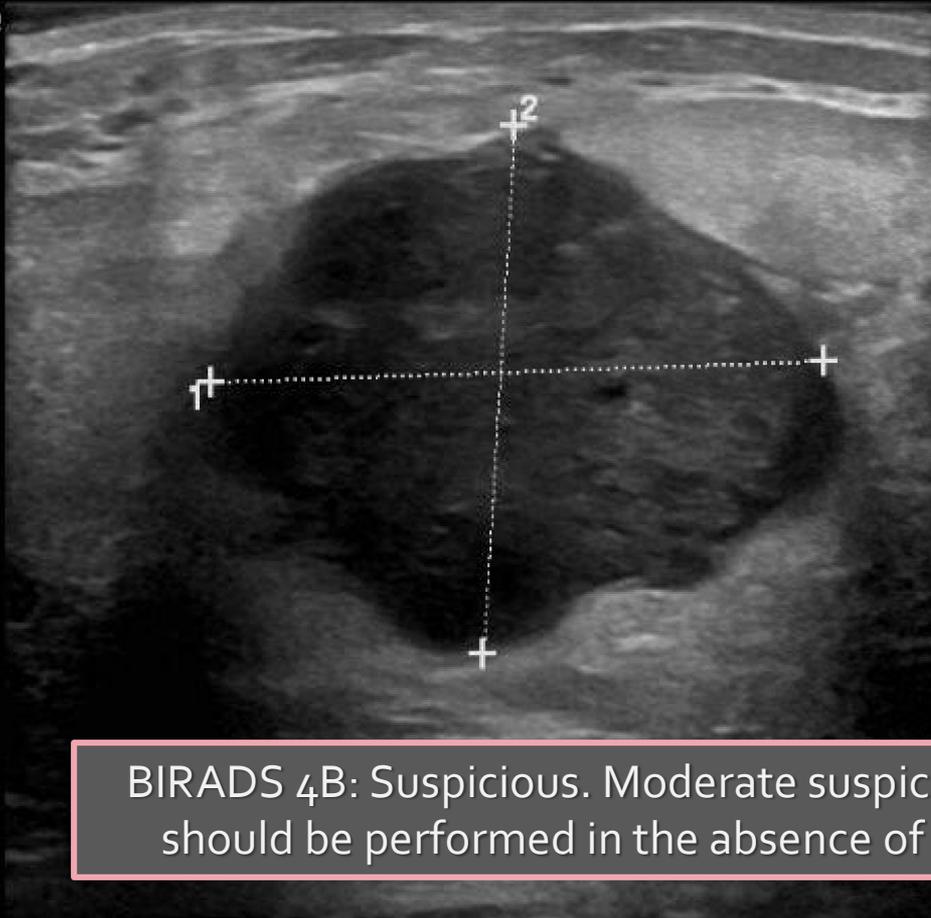
Ms. AV is a 31-year-old female at 12 weeks gestation presenting with a new right breast mass. She first noticed the mass a few weeks ago. She denies pain, redness, breast swelling or nipple discharge. She does have a history of ovarian cancer in her maternal grandmother.

# Imaging studies obtained

- \* Targeted ultrasound of right breast and right axilla
- \* Bilateral diagnostic mammogram

# Targeted ultrasound of right breast and right axilla

LOGIQ  
E9



FR	16
1 L	3.29 cm
2 L	2.88 cm
CHI	
Frq	15.0

Targeted ultrasound of the right breast 12:00 site demonstrated an irregular 3.2 cm hypoechoic mass.

Targeted ultrasound of the right axilla demonstrated multiple normal appearing lymph nodes.

BIRADS 4B: Suspicious. Moderate suspicion for malignancy. Biopsy should be performed in the absence of clinical contraindication.

RT LONG 1200

# Pathology results

- \* Patient underwent ultrasound-guided core needle biopsy with the following pathology results:
  - \* Invasive ductal carcinoma
  - \* Nottingham combined histologic grade: 3 (of 3)
    - \* Tubule formation score: 3
    - \* Nuclear pleomorphism score: 3
    - \* Mitotic count score: 3
  - \* Invasive carcinoma measures 6 mm in greatest linear extent in this biopsy
  - \* No definite ductal carcinoma in situ identified
  - \* Estrogen receptor: Negative
  - \* Progesterone receptor: Negative
  - \* HER2/neu by immunohistochemistry: Negative

# Right mammogram

Bilateral Mammograms performed following patient diagnosis

RT MLO  
RMLO

RT CC

41.58 \* mm

BIRADS 6:  
Known  
Biopsy-  
Proven  
Malignancy

At the 12:00 position right breast, there is a 4.2 cm irregular high density mass with a few associated calcifications and the previously placed biopsy clip.

# Patient outcome

- \* Patient planned to undergo right mastectomy with immediate reconstruction and sentinel lymph node biopsy

# Discussion: Pregnancy-Associated Breast Cancer

- \* Ultrasound is the first-line imaging modality in the workup of a palpable breast mass in a pregnant or lactating patient
  - \* Advantages include safety (lack of ionizing radiation) and high sensitivity for detection of pregnancy-associated breast cancer
  - \* Studies have reported 100% sensitivity and 100% negative predictive value for detection of pregnancy-associated breast cancer

# Discussion: Pregnancy-Associated Breast Cancer (cont)

- \* Mammography is generally considered safe during pregnancy and lactation
  - \* Estimated radiation dose to the uterus is  $<0.03 \mu\text{Gy}$  (significantly less than the 50-mGy threshold below which teratogenic fetal effects have not been reported)
  - \* Lead apron shielding decreases the dose to the uterus up to 50%
  - \* Despite its relative safety, mammography is recommended only if an underlying malignancy is suspected or has been biopsy-proven
  - \* Lower sensitivity than ultrasound, ranging from 78%-90%, likely due to increased parenchymal density secondary to hormonal changes

# Discussion: Pregnancy-Associated Breast Cancer (cont)

- \* Occurs in 1 in 3,000 to 1 in 10,000 pregnancies; most common cause of cancer-related death in the pregnant and lactating patient
- \* Most commonly high-grade invasive ductal carcinoma that is ER- and PR- with a high rate of lymphovascular invasion
- \* Imaging features similar to nongestational breast cancers, most commonly presenting on ultrasound/mammogram as a mass and less commonly as suspicious calcifications without an associated mass
- \* Often advanced stage at time of diagnosis and associated with a poor prognosis

# References

Lee, Sheila S., et al. "The Management of Breast Symptoms in the Pregnant and Lactating Patient." *Current Obstetrics and Gynecology Reports*, vol. 2, no. 1, 2013, pp. 53–58., doi:10.1007/s13669-012-0037-0.

Vashi, Reena, et al. "Breast Imaging of the Pregnant and Lactating Patient: Imaging Modalities and Pregnancy-Associated Breast Cancer." *American Journal of Roentgenology*, vol. 200, no. 2, 2013, pp. 321–328., doi:10.2214/ajr.12.9814.