Rady 413 Case Presentation

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April 2018
31-year-old female at 12 weeks gestation presenting with new right breast mass
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 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.
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
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.

Bilateral Mammograms performed following patient diagnosis

BIRADS 6: Known Biopsy-Proven Malignancy
Patient outcome

* Patient planned to undergo right mastectomy with immediate reconstruction and sentinel lymph node biopsy
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.
Mammography is generally considered safe during pregnancy and lactation

- Estimated radiation dose to the uterus is <0.03 μGy (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
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
