

## Ultrasound – Breast Evaluation in the Emergency Department

### **PURPOSE:**

To evaluate for acute breast pathology in the emergency setting.

### **SCOPE:**

Applies to all ultrasound studies of the breast performed in emergency departments:

- UT Southwestern Zale-Lipsky University Hospital, William P. Clements Jr. University Hospital, and all University Hospital-based Clinics Imaging Services (UTSW)
- Parkland Health and Hospital System Department of Radiology (PHHS)

### **INDICATIONS:**

- Pain, infection/inflammation, fevers/chills, and/or elevated white count with clinical concern for mastitis, abscess, or thrombophlebitis.
- Abnormal lab values indicating an active infection

### **CONTRAINDICATIONS:**

- Evaluation for a suspected breast malignancy in the absence of clinical findings suggestive of an abscess, mastitis, or thrombophlebitis.
- For workup of a palpable mass, pain, or nipple discharge without signs/symptoms of an acute infectious/inflammatory process, referral to your institution's outpatient breast center is required.

### **EQUIPMENT:**

- Breast ultrasound should be performed with a high-resolution linear array scanner operating at a center frequency of at approximately 10 MHz. Other transducers may be utilized in special circumstances such as breast thickness greater than 3 cm or for skin lesions. In general, the highest frequency capable of adequate penetration to the depth of interest should be used.

### **PATIENT PREPARATION:**

- None

### **EXAMINATION:**

#### **GENERAL GUIDELINES:**

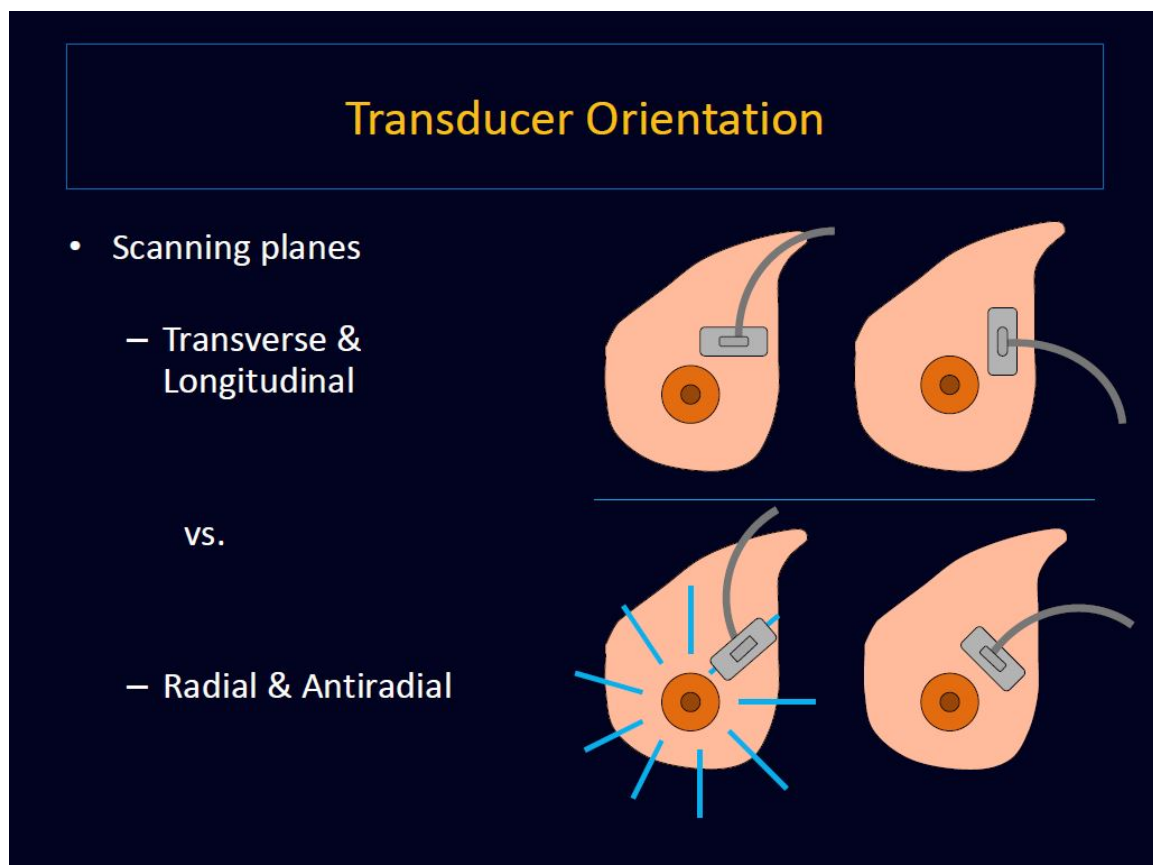
A complete examination includes detailed evaluation of the focal region of interest with representative comparison images of other regions of normal breast, or contralateral breast, as needed.

#### **EXAM INITIATION:**

- Introduce yourself to the patient
- Verify patient identity using patient name and DOB
- Explain test
- Obtain patient history including symptoms. Enter and store data page
- Optimal patient positioning is essential, with the patient's arm relaxed and flexed behind the head.

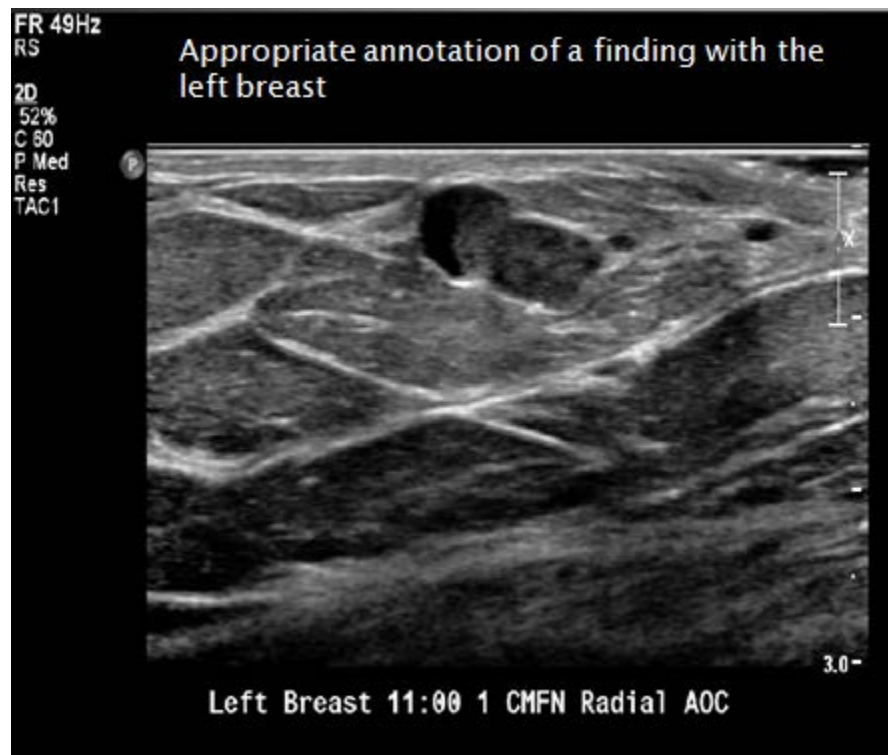
**TECHNICAL CONSIDERATIONS:**

- Optimal patient positioning is essential, with the patient’s arm relaxed and flexed behind the head. Medial lesions should generally be scanned in the supine position, and lateral lesions, including the axilla, should usually be scanned with the patient in the oblique position. This allows for elimination of artifact secondary to inadequate compression of breast tissue.
- The breast sonogram should be performed of the area of concern and should be correlated with clinical signs and/or symptoms.
- During the initial ultrasound of the region of interest in the breast, the depth should be set so that the pectoralis muscle is visualized along the posterior margin of the field of view (visualize the chest wall to ensure the entire depth of the breast tissue has been imaged).
- For evaluating superficial lesions, scanning through a thin stand-off pad or thick layer of gel may be helpful in offsetting the transducer face from the uppermost layer of skin, to bring it into the focal zone of the transducer.
- A lesion or any area of the breast being studied should be viewed in 2 perpendicular projections.
- The size of a lesion should be determined by recording its maximal dimensions in at least 2 planes; orthogonal planes are recommended. At least 1 set of images of a lesion should be obtained without calipers. Lesion size should be measured in three dimensions.
- The images should be labeled as to right or left breast, location of lesions with respect to the breast quadrant or clock position, distance to nipple, and the orientation of the transducer with respect to the breast (e.g., transverse or longitudinal, radial or antiradial).



**DOCUMENTATION:**

- Facility name and location.
- Examination date.
- Patient's first and last name.
- Identifying number and/or date of birth.
- Designation of right or left breast.
- Anatomic location using clock face notation or a labeled diagram of the breast.  
 Transducer orientation and distance from the nipple to the abnormality, if present, are required. Measurements should not be made from the edge of the areola, as areolar width is widely variable.
- Sonographer's and/or physician's identification number or initials.
- A lesion or any area of the breast being studied should be viewed in 2 perpendicular projections.
- The size of a lesion should be determined by recording its maximal dimensions in at least 2 planes; orthogonal planes are recommended. At least 1 set of images of a lesion should be obtained without calipers. Lesion size should be measured in three dimensions.
- Data page(s)

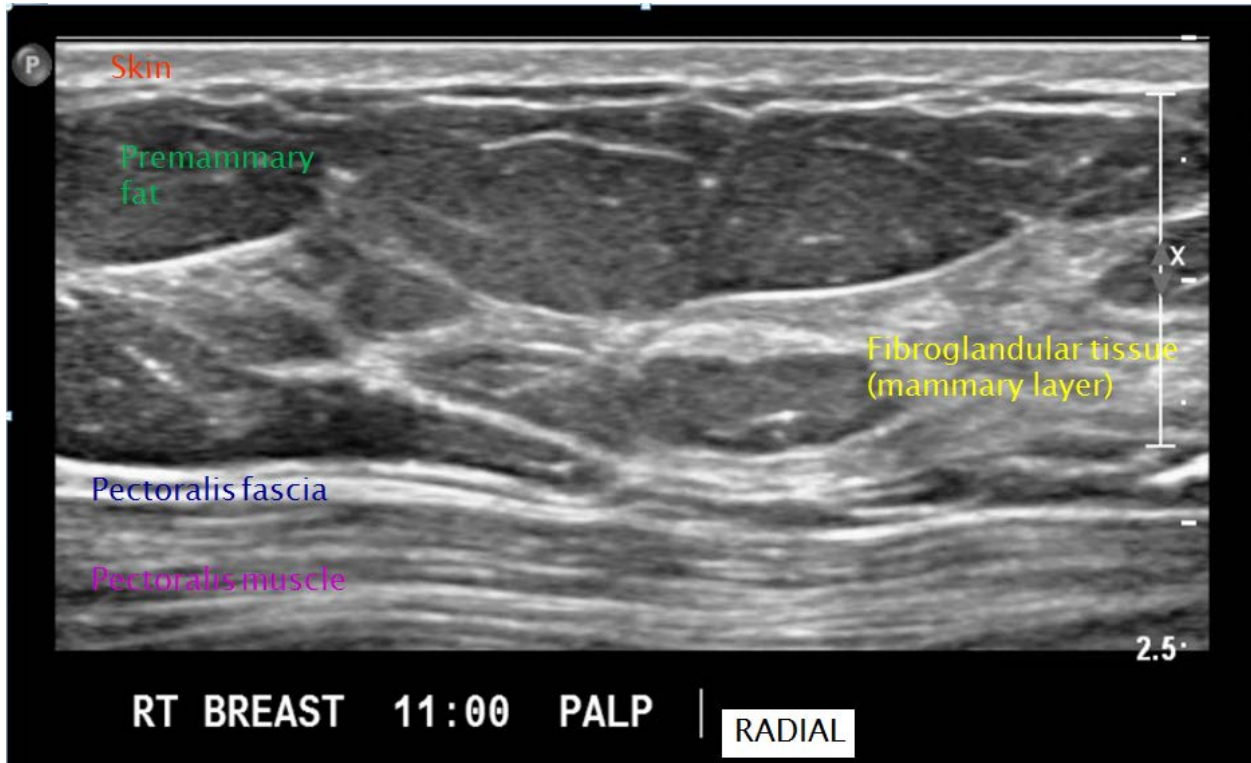

**PROCESSING:**

- Review examination data
- Export all images to PACS
- Note any study limitations

**REFERENCES:**

- ACR

**APPENDIX:**



**CHANGE HISTORY:**

STATUS	NAME & TITLE	DATE	BRIEF SUMMARY
Submission	Pooja Sharma, MD	11/16/2016	Submitted
Approval	David T Fetzer, Director	11/17/2016	Approved
Review			Reviewed
Revisions			