MEDFORD RADIOLOGY GROUP

General Ultrasound Breast Exam

PURPOSE:

1. To determine the presence or absence of disease.
2. To identify and quantitate pathology, which may be present by evaluating characteristics, organs and vessels for focal or diffuse abnormalities.
3. To improve patient outcomes by identifying abnormalities and disease, categorizing severity, and planning for intervention and/or medical correction.

PROCEDURE**:**

1. The complete study may/may not include Real Time, Doppler or Color interrogation.
    a) A breast study should be correlated with clinical evaluation in conjunction with previous imaging studies that may include diagnostic Mammography, CT, MRI, and/or prior Ultrasound images.
    b) A percutaneous breast interventional procedure should follow a clinical evaluation in conjunction with appropriate imaging studies that may include diagnostic mammography, and/or breast ultrasound. The ultrasound guided percutaneous breast procedure is an interventional, physician directed, focused exam to guide needle biopsy and presurgical localization.
2. No patient preparation is required for these tests.
3. Test results with patient history information will be kept in a file as part of the hospital PACS system with the referring physician receiving an interpretation report.
4. At conclusion of test sonographer will complete:
    a) appropriate technologist worksheet with findings
    b) complete appropriate charges/billing information
5. Call preliminary report as indicated.

STATEMENT OF INDICATIONS: One or more of the following indications must be present

1. Breast ultrasound:
    a) To differentiate cysts from solid lesions, subsequent to a mammographic finding.
    b) As an addition to a dense mammogram finding without question of certain area
    c) Following a clinical or patient find of a palpable mass
    d) A palpable mass in a patient that is younger than 35 years of age
    e) To identify breast silicone implant rupture:
        i) Change in appearance or consistency of breast
        ii) Tenderness or burning sensation in the area of the implants
        iii) Breast lump
2. Percutaneous breast interventional procedures:
    a) Suspicious masses (to determine cystic or solid)
    b) Guide needle aspiration and drainage of cysts
    c) Presurgical localizations
3. Additional indications maybe used depending upon ICD guidelines.

EQUIPMENT:

1. Real-time scanner using:
    a) Linear (straight or curved) transducers (at least 7-10 MHz)- wide near field

General Ultrasound Breast Exam

2. Doppler
3. Color Doppler
4. Ultrasound acoustic gel
5. Appropriate patient drape
6. Towels
7. Appropriate cleaning solution for transducer

PROCEDURE FOR BREAST ULTRASOUND:

1. Obtain complete patient history.
   a) Current and past symptoms
   b) Recent laboratory and other test results (mammogram etc.)
   c) Relevant risk factors
   d) Past surgeries
2. Enter patient data into real-time scanner.
3. Select breast set up or other appropriate machine setting selection.
4. The patient should be positioned supine, with ipsilateral shoulder and upper torso mildly elevated by pillow or foam wedge. The patient's ipsilateral arm should be positioned over the head, or on the hip with the elbow pointed back. (Depending on the size of the breast, multiple scanning positions may be required).
5. Apply ultrasound gel to the breast area.
6. Read requisition to see whether the lesion was seen on mammography or found by palpation.
7. Check prior breast imaging films - both mammogram and ultrasound.
8. Perform a general scan of breast tissue to relate normal tissue with any area that may be different sonographically.
9. Place transducer at the area of question.
10. Each image must be labeled according to the mammagraphic "clock", along with which breast is being imaged, and distance from the areola margin.
11. If a focal lesion is seen, document the images for the permanent record.
    a) In transverse, scan the region of concern. If a lesion is identified, measure in two or more orthogonal imaging planes (AP and transverse).
    b) In sagittal, scan the region of concern. If a lesion is identified, measure orthogonally (AP and transverse).
12. If no focal lesion is seen, document images of the area in sagittal and transverse.
13. If focal lesion is noted, a scan of patient's axillary region should be completed.
14. Apply Doppler as needed
    a) Doppler signals obtained in a questionable area should be compared to those obtained in the contralateral area.

PROCEDURE FOR PERCUTANEOUS BREAST INTERVENTIONAL ULTRASOUND:

1. An ultrasound examination of the mass or area of the breast, in which the procedure is planned, should be completed and correlated with prior examinations and diagnostic imaging.
2. Use standards of sterility or cleanliness in the preparation of the breast, probe housing, and transducer face.

3. The ultrasound professional should follow the needle path with a high frequency transducer. The physician performing the procedure determines the route of the needle entry.

SPECIAL STATEMENT REGARDING PROTOCOL: This document is meant to be a statement of standard. It is not meant to deter the professional sonographer from interrogating any disease or suspected pathology with whatever means they deem appropriate and necessary. It is understood that other views, additional Doppler sampling sites, color settings, velocity ratios and measurements etc., will be used in evaluating any pathologic or suspected pathologic condition.

EVALUATION AND DIAGNOSTIC CRITERIA:

1. Real-time evaluation and documentation should include but not be limited to:
    a) Echogenicity
    b) Echo-texture
    c) Lesion (Cystic or Solid):
        i) Margins
        ii) Shape
        iii) Size
        iv) Location
        v) Lobulations (>or<3)
        vi) Finger-like extensions
        vii) Enhanced through transmission (posterior enhancement)
        viii) Posterior attenuation
    d) Fluid collection
2. Doppler/Color Doppler should include but not be limited to:
    a) The presence or absence of blood flow:
        i) Internal in mass
        ii) External to mass
        iii) Laminar flow patterns
        iv) Normal vascularity
        v) Turbulence and Mosaics

SPECIAL STATEMENT REGARDING DIAGNOSTIC CRITERIA: It is recognized that individual patients and disease presentations will differ. For this reason, this document is meant to be a statement of standard. This document is not meant to supersede the qualified interpreting physician's prerogative to add or adjust the interpretation according to his/her best judgment.

GUIDELINES FOR CALLING PRELIMINARY REPORTS:

1. Reporting preliminary or technical findings is both desirable and necessary in clinical practice.
2. Qualified technical personnel may/may not initiate a preliminary report
3. The sonographer may/may not make the preliminary nature of the report known to the referring or interpreting physician.

General Ultrasound Breast Exam

4. When to call the physician with a preliminary report:
   a) Suspected Carcinomas

REFERENCES:

1. ACR Standard for the Performance of Ultrasound-Guided Percutaneous Breast Interventional Procedures.1996
2. AIUM Standards and Guidelines for the Accreditation of Ultrasound Practices.
3. Ultrasound Procedure Protocol-The Jefferson Ultrasound Research and Education Institute. Second edition. June 1995
4. SDMS GUIDELINES FOR ABDOMEN REVIEW. Revised 1994.
5. Lee, S. et al. Sonographic Detection of Silicone Breast Implant Rupture. JDMS 11:3-8, 1995.

DeBruhl ND, Gorczyca DP, Ahn CY, Shaw WW, Bassett LW. Silicone Breast Implants: US Evaluation. Radiology 1993;189:95-98