BREAST IMAGING

H. Lee Moffitt Cancer Center and Research Institute

Rotation Director: Margaret Szabunio, M.D.

General Goals: On this rotation, the resident will learn to interpret screening mammograms and to perform diagnostic mammography and ultrasound examinations of the breast. The resident will learn to formulate appropriate differential diagnoses and recommendations for various breast pathologies. The resident will also learn mammographic, ultrasound and MR breast biopsy techniques.

Daily Work: The resident rotation begins after morning conference has concluded. In this rotation the resident shall learn BIRADS nomenclature and become proficient in using the PENRAD system for reporting. The resident will also learn the difference between screening and diagnostic mammography and how to perform a diagnostic work-up. (S)he will become familiarized with mammographic positioning and technique and quality assurance including MQSA and ACR requirements. The resident will learn to interpret mammographic images and the use of additional mammographic views for problem solving. (S)he will learn when and how to employ sonography in patient evaluation.

The resident is REQUIRED to attend Thursday morning breast interdisciplinary conference. Preparing and reviewing cases for this conference is highly recommended.

The resident will assist with and perform needle localizations, breast biopsy and cyst aspiration procedures using mammographic, stereotactic and sonographic techniques for each. The resident is expected to identify proper indications and contraindications for each procedure and how to identify and manage complications. The resident is expected to understand and complete informed consent for image guided breast procedures. On occasion, the resident may observe or assist with ductography procedures. Opportunity to observe and assist with MR guided breast procedures may also be available.
The indications and use of radionuclide imaging and magnetic resonance imaging will be discussed.

It should be stressed that all diagnostic mammography examinations will be reviewed before the patient leaves the department. If additional views are deemed necessary, they should be performed at the time of the patient's visit. It is also imperative that all breast sonograms be viewed real-time.

The resident will be required to know and use BIRADS terminology in reporting. No study shall be reported until it has been checked by the attending radiologist.

Suggested Reading:

Breast Imaging Companion (Imaging Companion Series). Cardenosa, G. Lippincott Williams & Wilkins; 3 edition (November 1, 2007).

Breast Imaging. Kopans, D.B., Lippincott Williams & Wilkins; 3rd ed. (2006).

Teaching Atlas of Mammography. Tabar, L, et al. Thieme Medical Publishers; 3 Rev Sub edition (January 15, 2001).

Diagnostic Imaging: Breast (Diagnostic Imaging). Berg, W. and Birdwell, R. AMIRSIS; 1st ed. 2006.

Educational Goals and Objectives:

Second Year

Patient care:

- Be able to differentiate solid from cystic masses on breast ultrasound
- Be able to describe the features of malignant and benign lesions on mammography and ultrasound
- Be able to critique the technical quality of a mammogram
- Observe breast ultrasound and interventional procedures
- Understand the indications for interventional breast procedures
- Understand the indications for breast MR

Medical Knowledge:

- Proper patient positioning for mammography
- Basic mammographic physics
- Manifestations of the most common benign and malignant breast diseases such as invasive ductal carcinoma, ductal carcinoma in-situ, fibroadenoma and fibrocystic changes.
- Sensitivity and specificity of mammography in the detection of breast cancer

Interpersonal and Communication Skills:

- Call the referring physician for positive results
- Learn BIRADS terminology for mammography reporting
- Communicate effectively with all members of the health care team

Practice-based Learning and Improvement:

- Identify, rectify and learn from personal errors
- Incorporate feedback into improved performance
- Efficiently use electronic and print resources to access information

Professionalism:

- Demonstrate respect for patients and all members of the health care team
- Respect patient confidentiality
- Present oneself as a professional in appearance and communication.

- Demonstrate a responsible work ethic with regard to work assignments

Systems-based Practice:

- Attend breast tumor board and demonstrate understanding of how breast imaging is integrated with the clinical care of the patient
- Demonstrate knowledge of ACR standards for diagnostic mammography
- Demonstrate knowledge of ACR recommendations for screening mammography

Third Year

Patient Care:

- Perform breast ultrasound
- Perform ultrasound-guided cyst aspiration
- Perform needle localization
- Monitor diagnostic mammograms, selecting the appropriate next study
- Understand the management of the symptomatic patient, including evaluation of palpable mass, discharge, redness, and pain
- Appropriately select screening patients for recall
- Understand indications for breast MR

Medical Knowledge:

- Staging of breast cancer
- Surgical management of breast cancer
- Manifestations and clinical management of less common breast pathology such as Paget's disease, inflammatory breast cancer, phylloides tumor, invasive lobular carcinoma, and lobular carcinoma-in-situ

Interpersonal and Communication Skills:

- Appropriately obtain informed consent
- Produce radiologic reports with BIRADS terminology
- Communicate effectively with all members of the health care team

Practice-based Learning and Improvement:

- Identify, rectify and learn from personal errors
- Incorporate feedback into improved performance
- Efficiently use electronic and print resources to access information

Professionalism:

- Demonstrate respect for patients and all members of the health care team
- Respect patient confidentiality
- Present oneself as a professional in appearance and communication.
- Demonstrate a responsible work ethic with regard to work assignments

Systems-based Practice:

- Attend breast tumor board and demonstrate understanding of how breast imaging is integrated with the clinical care of the patient
- Have familiarity with MQSA and its requirements

Fourth Year

Patient Care:

- Supervise screening and diagnostic mammography
- Supervise and perform breast ultrasound
- Perform ultrasound-guided biopsies
- Be able to perform stereotactic breast biopsy
- Understand the indications and technique of ductography
- Understand indications and technique for breast MR

Medical Knowledge:

- Imaging findings of breast reconstruction
- Evaluation of the patient with breast implants

Interpersonal and Communication Skills:

- Appropriately communicate results to patients and clinicians
- Produce radiologic reports with BIRADS terminology
- Communicate effectively with all members of the health care team

Practice-based Learning and Improvement:

- Identify, rectify and learn from personal errors
- Incorporate feedback into improved performance
- Efficiently use electronic and print resources to access information

Professionalism:

- Demonstrate respect for patients and all members of the health care team
- Respect patient confidentiality
- Present oneself as a professional in appearance and communication.
- Demonstrate a responsible work ethic with regard to work assignments

Systems-based Practice:

- Attend breast tumor board and demonstrate understanding of how breast imaging is integrated with the clinical care of the patient
- Understand MQSA requirements

Mechanism of Evaluation:
Residents will be evaluated on the above goals and objectives by means of a monthly global evaluation form filled out by the breast imaging faculty. In addition, interpersonal and communication skills and professionalism will be evaluated by the mammography technologists. Medical knowledge in breast imaging will be further evaluated by the ACR in-service examination and mock oral board examination.