ULTRASOUND

H. Lee Moffitt Cancer Center and Research Institute

Rotation Director: Margaret Szabunio, M.D.

General Goals and Overview: On this rotation, the resident will learn to interpret ultrasound examinations and perform procedures used in the diagnostic work-up of cancer patients. Ultrasound is one of the primary imaging modalities for rapid noninvasive evaluation of many regions of the human body and can provide real time multiplanar assessment that requires that the radiologist play an active role during the examination. Therefore, to become an expert in ultrasound, a radiologist must be able to scan a patient while understanding the complex anatomy and pathology.

Daily Work: The resident is expected to arrive immediately following morning conference. On Thursday mornings and mornings without conference the resident will arrive at 8:00 am. The usual workday will end at *approximately* 5:00 pm, but the resident should not leave until all cases have been reviewed and dictated. The resident will assist/perform procedures after appropriate pre-procedural evaluation. The resident will review diagnostic ultrasound examinations and will perform real time scanning of patients as needed. *The resident will be required to submit two brief ultrasound cases to departmental case file for each rotation.*

Suggested Reading:

Ultrasound: The Requisites (Requisites in Radiology). 2nd ed. Middleton, W.D and Kurtz, A.B. Mosby (St. Louis) 2003.
Diagnostic Imaging: Ultrasound (Diagnostic Imaging). 1st ed. Ahuja, A.T., et. al. AMIRSIS 2007.
Diagnostic Ultrasound. 3rd ed. Rumack, C., Wilson, S., Charboneau, J.W., and Johnson, J. Mosby (St. Louis) 2004.

Educational Goals and Objectives:

Resident Years 1 and 2:

Patient Care

- Identify normal ultrasound anatomy and state the indications for examination of abdomen, female and male pelvis, neck (e.g. carotid, thyroid), scrotum, lower extremity deep venous system, RLQ
- Perform an ultrasound-guided thoracentesis and paracentesis

- Perform an ultrasound of the RUQ including assessment of the liver, biliary tree, GB and pancreas
- Perform an ultrasound of the lower extremity deep venous system from the groin to the popliteal vein.
- Be able to critique the technical quality of an ultrasound examination

Medical Knowledge

- Discuss the ultrasound features of the most common diseases involving the: liver, RLQ, gall bladder, uterus, spleen, ovaries, pancreas, prostate, kidneys, bladder, thyroid, testicles/scrotal contents

Interpersonal and Communication Skills

- Respond to clinical service requests for interventional ultrasound, portable ultrasound, and routine departmental studies in a logical, professional and organized fashion (e.g. insure appropriateness and obtain necessary information for interventional study).
- Assist sonography technologists with scanning and medical questions in a timely and professional manner.
- Interpret and dictate all the ultrasound studies in which the resident was directly involved with before the end of the working day.

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

- Demonstrate knowledge of ACR standards for diagnostic ultrasonography
- Demonstrate knowledge of ACR appropriateness criteria when applicable to ultrasound examinations

Resident Years 3 and 4:

Patient Care

- Diagnose and discuss the sonographic findings of diseases related to the following organ systems:
    - liver and biliary including pancreas
    - adrenal, renal, bladder
    - spleen
    - female GU system including uterus, adnexae, and fallopian tubes
    - male GU system including prostate, penis, seminal vesicles, scrotum
    - pleural space

    - upper and lower extremity deep venous systems
    - thyroid
    - arterial tree including carotid and intra-abdominal arteries
- Demonstrate proficiency at thoracentesis, paracentesis, complete abdominal, pelvic (including transvaginal), vascular and small parts ultrasound.
- Perform ultrasound-guided solid organ biopsy and abscess draining using either free hand or transducer guided approaches.

Medical Knowledge

- Demonstrate ability to supervise the appropriate imaging evaluation of a specific disease or patient using the ACR appropriateness criteria when appropriate.
- Demonstrate a working familiarity with all ultrasound machines in the section.

Interpersonal and Communication Skills

- Demonstrate interest and ability in teaching first and second year residents.
- Call the referring physician for positive results
- Communicate effectively with all members of the health care team

Practice-Based Learning and Improvement

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- 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.
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Systems-Based Practice

- Demonstrate knowledge of ACR standards for diagnostic ultrasonography
- Demonstrate knowledge of ACR appropriateness criteria when applicable to ultrasound examinations

<u>Evaluation</u>:

- Monthly evaluations submitted by all participating staff in US
- Technical staff feedback to Director of Ultrasound regarding resident performance
- regarding:
    - Interaction with support staff
    - Technical expertise regarding equipment utilization

All evaluations are based on the specific objectives stated in this manual.

- Daily work habits and performance assessed
- Interactive skills with clinicians and section members assessed
- Individual feedback given at end of rotation unless requested earlier by staff or resident