UCSD Radiology Resident Musculoskeletal Rotations

Goals and Objectives

KOP Bone

Rotation 2, 2nd or 3rd year residents

Guidelines and Goals

After completing the second four-week rotation in musculoskeletal radiology:

- Show up to service on-time (8 AM) and leave when excused from service. Demonstrate a responsible work ethic. Maintain a professional demeanor with patients, staff, and colleagues.

- Attend and participate in all MSK conferences listed on the RadRes conference schedule. Present cases when requested by faculty.

- Demonstrate learning of knowledge-based objectives and mastery of technical objectives for the first rotation. We will use the Radprimer Basic Musculoskeletal: Trauma and Basic Musculoskeletal: Non-Traumatic Diseases deltas as a benchmark of progress.

- Generate accurate and concise radiographic reports. Obtain essential patient information pertinent to the radiologic examination.

- Communicate effectively with patients, referring clinicians, technologists and supervisory staff. When confident they may give curb side consults, to be later reviewed by faculty

- Understand standard radiographic positioning and anatomy. Demonstrate knowledge of clinical indications for radiography and indications for urgent CT and MR imaging examinations. Become more familiar with MSK MR and US examinations.

- Participate in quality improvement/quality assurance activities.

- Participate in the education of junior residents, students and interns.

Patient Care. Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.	Understand the indications for use of contrast in CT and MR imaging. Understand the contraindications for use of contrast. Consent patients for injection, biopsy, arthrography. Know how to treat contrast reacions. Communicate all unexpected or significant findings to the ordering provider and document whom was called and the date and time of the discussion in the report, ensuring closure of the loop in all cases. Obtain relevant patient history from electronic records, dictated reports, the patient, or by communication with referring provider. Have this available at the time of the readout. Recognize when it is appropriate to obtain help from fellows or faculty when assisting referring clinicians.
Medical Knowledge. Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social behavioral sciences, as well as the application of this knowledge to patient care.	Have a comprehensive MSK anatomy knowledge in all imaging modalities of both the axial and appendicular skeleton. Recognize and accurately describe all fractures and dislocations of the appendicular skeleton. Describe fractures in a systematic and comprehensive manner. Succinct and precise report dictation of radiographic findings in reports. All reports reviewed by radiology attending, critiqued where appropriate, and corrected by the resident. Recognize and describe fractures and dislocations of the cervical, thoracic and lumbar spine. Understand trauma mechanisms of injury and distinguish stable from unstable injuries. Demonstrate further learning of pathophysiology and radiology of fracture healing and complications of healing such as delayed union, malunion and nonunion. Demonstrate a full understanding of radiographic presentation and evaluation of osteomyelitis and septic arthritis. Recognize and describe complications of orthopedic devices including fracture fixation and spine and arthroplasty hardware. Know which ones require additional communication with clinicians.

	Know the positioning and anatomy of standard radiographic examinations of the musculoskeletal system and be able to critique technique. Be fully familiar with benign bone lesions such as infarcts, osteochondromas, cysts and fibrous dysplasia. Digitized teaching file review of lesions with attending. Recognize the common imaging findings of malignant bone tumors. Recognize the radiographic signs of osteomyelitis/septic arthritis and be able to competently discuss the appropriate algorithm for workup of osteomyelitis/septic arthritis. Extemporaneous discussions at the view-box will highlight advantages and disadvantages of imaging modalities. Be prepared to present at the weekly case conference.
Practice-based Learning and Improvement. Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning.	Dictate clear, detailed, and accurate reports that include all pertinent information as established in the American College of Radiology (ACR) Guidelines for Communication. Be prepared to present cases at the weekly case conference and answer questions that may arise.
Interpersonal and Communication Skills. Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.	Dictate clear, detailed, and accurate reports that include all pertinent information as established in the American College of Radiology (ACR) Guidelines for Communication. Use appropriate nomenclature when reporting radiographic, CT, MR or ultrasound (US) findings of musculoskeletal disease. Communicate all unexpected or significant findings to the ordering provider and document whom was called and the date and time of the discussion in the report, using the CTRM:2000 system. Effectively provide feedback to radiology technologists regarding quality of exposure and patient positioning. Understand the need to close the loop on all final report changes to the initial read.

Professionalism. Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.	Develop a professional rapport with consulting services. Do reading assignments assigned by the attending and locate appropriate references for case discussions. Short review of subject matter on next working morning. Attendance at all didactic lectures, and timely arrival each day on the rotation is expected. Communicate all unexpected or significant findings to the ordering provider and document whom was called and the date and time of the discussion in the report. Recognize when it is appropriate to obtain help from fellows or faculty when assisting referring clinicians. Demonstrate responsible, ethical behavior; positive work habits; and professional appearance; and adhere to principles of patient confidentiality.
Systems-based Practice. Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.	Effectively provide feedback to radiology technologists regarding quality of exposure and patient positioning. Learn the required views for all the musculoskeletal system radiographic studies (Standard operating procedure) and be able to determine if the study was done correctly. Understand MRI sequence selection. Understand all the radiation dose reduction techniques available and apply these appropriately. Participate in discussions with faculty and staff regarding operational challenges and potential system solutions regarding all aspects of radiologic services and patient care. Present cases at the weekly MSK conference.

Required reading includes “Fundamentals of Skeletal Radiology” by Clyde Helms, WB Saunders, “Bone and Joint Imaging” by Donald Resnick , Mark Kransdorf, WB Saunders, Orthopedic Radiology by B Weissman and C Sledge, WB Saunders

References

1. Accreditation Council for Graduate Medical Education. Competencies Definitions and Practice Performance Measurements for Diagnostic Radiology. Available online at http://www.acgme.org/acWebsite/RRC_420/420_compDefsPerfMeas.pdf.

2. Accreditation Council for Graduate Medical Education. Program Requirements for Graduate Medical Education in Diagnostic Radiology. Available online at http://www.acgme.org/acWebsite/downloads/RRC_progReq/420pr701_u705.pdf.

3. Collins J, Abbott GF, Holbert JM, et al. Revised Curriculum on Cardiothoracic Radiology for Diagnostic Radiology Residency With Goals and Objectives Related to General Competencies. Acad Radiol 2005; 12:210-223.

4. American College of Radiology. ACR Practice Guideline for Communication of Diagnostic Imaging Findings. Available online at http://www.acr.org/s_acr/bin.asp?CID=541&DID=12196&DOC=FILE.PDF.

5. American College of Radiology. ACR Appropriateness Criteria: Expert Panel on Musculoskeletal Imaging. Available online at http://www.acr.org/s_acr/sec.asp?CID=1206&DID=15047.

6. American College of Radiology. ACR Practice Guidelines and Technical Standards. Available online at http://www.acr.org/s_acr/bin.asp?CID=1848&DID=14800&DOC=FILE.PDF.

7. Radiographics Top 10 Reading List (2nd and 3rd year): https://pubs.rsna.org/page/radiographics/rgteam/top10_musculoskeletal#resyear2 https://pubs.rsna.org/page/radiographics/rgteam/top10_musculoskeletal#resyear3