

University of Massachusetts Medical School

Anesthesiology Residency Program

Clinical Base Year Rotation in Chest Radiology

The Chest Radiology rotation will be two weeks in duration the first two weeks of the assigned block and will occur at the University campus. As anesthesiologists, interpretation of chest radiographic images is one of the skills necessary to deliver quality care. During this rotation, residents will have the opportunity to spend focused time learning the fundamental basics of chest radiographic imaging. There will be no designated call duties during this rotation, and the resident work hours will comply with ACGME requirements. No vacation will be allowed during this rotation.

Goals

- to provide the PGY-1 resident with a structured clinical experience in the fundamentals of adult and pediatric chest radiology, including the clinical indications for such studies, as well as interpretation of such studies.

Objectives

Following this rotation, anesthesiology resident will be able to:

Patient Care

- Approach the evaluation of adult and pediatric chest film imaging in a logical and organized fashion
- Correlate clinical manifestations and the presence of physical findings of the patient with radiographic findings on plain chest films
- Recognize the common radiographic findings (see Medical Knowledge)

Medical Knowledge

- Develop a basic knowledge about general radiographic chest imaging.
 - a. Describe patient positioning and indications for posteroanterior (PA), anteroposterior (A), lateral decubitus, and lordotic chest radiographs (PC).
 - b. Identify normal anatomy of the chest as it is seen on the chest radiograph, identifying the following structures:
 - Fissures – major, minor, accessory, azygous
 - Mediastinal lines – anterior junction line, posterior junction line, right paratracheal stripe, paraspinal lines, azygoesophageal recess, aortopulmonary window, retrosternal line
 - c. Demonstrate a basic knowledge of radiological interpretation of common pathology in the chest, particularly as it applies to cardiac abnormalities.

- Describe the characteristics of common abnormal cardiac shadows.
 - Recognize cardiac enlargement.
 - Identify right heart failure and left heart failure on CXR.
 - Define, identify and understand significance of Kerley B lines.
- Recognize and identify the following pathologic anatomy in the lungs:
 - a. Air space processes
 - b. Lobular processes
 - c. Interstitial processes: reticular, nodular, honeycombing
 - d. Air bronchogram
 - e. Silhouette
 - f. Fat pad sign
 - g. Atelectasis and obstructive lung disease
 - h. Emphysematous changes
 - i. Mediastinal masses and mediastinal and hilar adenopathy
 - j. Know anatomic boundaries of the anterior, middle, posterior and superior mediastinum.
 - Name the four most common causes of anterior mediastinal mass.
 - Name three most common causes of a middle mediastinal mass.
 - Name the most common cause of posterior mediastinal mass.
 - Identify widened mediastinum on trauma patient and state the differential diagnosis, including traumatic and nontraumatic etiology.
 - k. Solitary and multiple pulmonary nodules
 - State definition of solitary pulmonary nodule and pulmonary mass.
 - Name major causes of cavitory pulmonary nodules.
 - l. Pneumothorax and pneumomediastinum on supine radiographs.
 - Recognize tension pneumothorax and understand acute clinical significance.
 - Identify pneumothorax on supine and erect films.
 - m. Possible diaphragmatic rupture.
 - n. Pleural effusions
 - Recognize four causes of a large unilateral pleural effusion.
 - Recognize pleural effusions on erect, supine, and decubitus films.
 - o. Bronchopneumonia and lobar pneumonia
 - p. Enlarged pulmonary arteries on CXR; distinguish from adenopathy.
 - q. Radiographic signs of a pericardial effusion.
 - State five causes of a pericardial effusion.
 - Recognize and identify:
 - Monitoring and support devices on a plain film CXR i.e. “lines and tubes”
 - Be able to identify, state the preferred placement, list the complications associated with malposition, of each of the following on CXR: Endotracheal tube, central venous catheter, pulmonary artery (i.e. Swan-Ganz) catheter, feeding tube, nasogastric tube, chest tube, intra-aortic balloon pump, pacemaker leads, automatic implantable cardiac defibrillator

Interpersonal Skills and Communication

- Communicate effectively with all members of the radiology team
- Discuss radiographic findings utilizing appropriate terminology
- Communicate effectively with patients and families when appropriate

Professionalism

- Interact professionally toward patients, families, colleagues, and all members of the health care team
- Understand effective utilization of radiologic consultants
- Demonstrate excellence: perform responsibilities at the highest level 8. Demonstrate honesty with patients and staff
- Demonstrate positive work habits, including punctuality and professional appearance
- Demonstrate principles of confidentiality with all information transmitted during a patient encounter

Practice-Based Learning

- Identify and acknowledge gaps in personal knowledge and skills in the area of radiologic imaging, particularly as it pertains to plain chest radiology.
- Develop real-time strategies for filling knowledge gaps as it pertains to radiologic imaging that will benefit patients requiring interpretation of chest imaging in either the critical care units or operating room
- Commitment to professional scholarship, including systematic and critical perusal of relevant print and electronic literature, with emphases on integration of basic science with radiologic imaging
- Share good learning cases and missed diagnosis with others in the department

Systems-based Practice

- Effective collaboration with other members of the health care team, including residents at all levels, fellows, attendings, and medical students, in the choice of most cost effective, evidence-based radiologic imaging studies for evaluation of chest pathology
- Know when to ask for help and advice from senior residents and attending physicians on the effective use and interpretation of appropriate radiologic studies
- Learning by participation in ward rounds, teaching conferences and other educational activities
- Demonstrate knowledge of the regulatory environment

Didactics

- Radiology case conferences
- Didactic conference covering general radiology topics

Evaluations

- Global ratings by faculty/360 degree assessment
- Attendance at departmentally scheduled conferences
- Fulfillment of rotation duties as outlines