Reading Hospital School of Health Sciences
Medical Imaging Program
MI 123: Clinical Seminar I
2021-2022

Chest - Routine

Routine: PA and Lateral

Position/Projection: **Erect PA**

Patient Prep: Remove everything from waist up (including bra and jewelry)

Technique: 120 kVp  Erect IR (1.4 mAs if not AEC)

SID: 72 inches

Collimation: 14 x 17 Lengthwise (Portrait) or Crosswise (Landscape) depending on patient habitus

Patient Position: Have the patient stand straight, facing the IR, with weight equally distributed on feet. Raise chin, place hands on hips palms out, elbows flexed. Rotate their shoulders forward. Midsagittal line is center of IR.

Central Ray: Central ray should enter at T-7. (Top of IR about 1.5" above the relaxed shoulders if portrait and about 1" above for landscape.)

Marker Placement: L (in upper left corner of IR). Annotate 'erect' if not using a bubble marker

Shielding: RH does not require gonadal shielding. If patient requests a shield, educate them on why we do not shield. If shield is still requested, place below chest (posteriorly)

Breathing Instructions: Double inspiration

Purpose/Structures: Demonstrates the air-filled trachea, the lungs, the diaphragmatic domes, the heart and aortic arch.

Evaluation Criteria:

- Evidence of proper collimation and presence of side marker placed clear of anatomy of interest
- Entire lung fields from the apices to the costophrenic angles
- No rotation
    - Sternal ends of the clavicles equidistant from the vertebral column
    - Trachea visible in the middle
    - Equal distance from the vertebral column to the lateral border of the ribs on each side
- Proper anterior shoulder rotation demonstrated by scapulae projected outside the lung fields
- Proper inspiration demonstrated by ten posterior ribs visible above the diaphragm
- Sharp outlines of heart and diaphragm
- Faint shadows of the ribs and superior thoracic vertebrae visible through the heart shadow
- Pulmonary vascular markings from the hilar regions to the periphery of the lungs

***With inspiration and expiration chest images, diaphragm demonstrated on expiration at a higher level so that at least one fewer rib is seen within the lung field.

Routine: PA and Lateral

Position/Projection: **Erect Left Lateral**

Patient Prep: Remove everything from waist up (including bra and jewelry)

Technique: 120 kVp  Erect IR (3.6 mAs if not AEC)

SID: 72 inches

Collimation: 14 x 17 (Lengthwise) Portrait

Patient Position: Patient standing erect, left side against the IR with weight evenly distributed on both feet (make sure feet are straight). Patient looks straight ahead and chin raised. Raise both their arms and can either cross their arms over their head and grasp elbows or hold onto immobilizer bar. Mid-sagittal plane centered and parallel to the IR and the mid-coronal plane is perpendicular to the IR

Central Ray: Central ray should enter at T- 7 (top of IR about 1.5-2" above the shoulders).

Marker Placement: L (in upper left corner or can place in upper right corner). Annotate 'erect' if not using a bubble marker

Shielding: RH does not require gonadal shielding. If patient requests a shield, educate them on why we do not shield. If shield is still requested, place below chest (posteriorly)

Breathing Instructions: Double inspiration

Purpose/Structures: Demonstrates the heart, aorta and pulmonary lesions. Demonstrates interlobular fissures.

Evaluation Criteria:

- Evidence of proper collimation and presence of side marker placed clear of anatomy of interest
- Arm or its soft tissues not overlapping the superior lung field
- Costophrenic angles and the portions of the pulmonary apices not obscured by the arms and shoulders
- No rotation
    - Hilum in the approximate center of the radiograph
    - Superimposition of the ribs posterior to the vertebral column
    - Sternum in profile
    - Trachea visible in the midline
- Long axis of the lung fields demonstrated in vertical position, without forward or backward leaning
- Open thoracic intervertebral spaces and intervertebral foramina, except in patients with scoliosis
- Sharp outlines of heart and diaphragm
- Pulmonary vascular markings from the hilar region to the periphery of the lungs.

Notes

- If patient has had a pacemaker implanted in the previous 6 weeks, ***do not*** raise arm above heart level.
- If obtaining chest images on a KNOWN or POSSIBLY pregnant patient, only perform the PA view. There is no need to contact a Radiologist prior to imaging. Add an image check to the procedure. The Radiologist can request a lateral, if needed, without the patient having to return.
- If you are performing a chest with nipple markers (per ordering physician or Radiologist), only do the PA view. ***Do not*** take a lateral image with nipple markers. In addition, if Radiologist recommends an image with nipple markers, the image is taken after a new order is received from the ordering physician.
- PA chest considerations:
    - If evaluating for pneumothorax or foreign body, inspiration and expiration views may be ordered.
    - Inferior lobes of both lungs should be carefully checked for adequate penetration in women with large pendulous breasts
- Cardiac studies with barium: PA chest and left lateral may be obtained while swallowing thick barium during the exposures to outline posterior heart and aorta. (Merrill's)