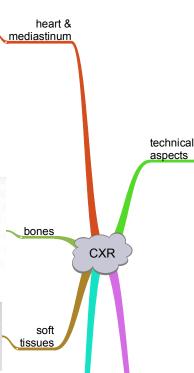
- 1. Cardiothoracic ratio
  - On the PA film, the transverse diameter of the cardiac outline is compared to the widest transverse dimension of the chest
  - A ratio greater than 50% is suggestive of cardiac enlargement
- 2. Normal mediastinal contours
  - Right side
    - · Trachea, paratracheal soft tissue stripe and right upper lobe
    - Superior vena cava
    - Right lung hilum—normally 2 cm higher than the left hilum
    - Right atrium
    - · Right cardiophrenic angle
  - · Left side
    - · Trachea, paratracheal soft tissue stripe and left upper lobe
    - Aortic knuckle
    - Left lung hilum
    - · Left atrial appendage
    - Left ventricle
    - · Left cardiophrenic angle
      - 1. Fractures and lytic lesions should always be sought
      - 2. The following bones should be inspected:
        - lower cervical, thoracic and upper lumbar vertebrae
        - ribs
        - clavicles
        - scapulae
        - upper humeri
  - 1. Diaphragmatic outlines—right side normally higher than left side
  - 2. Normal stomach bubble under left hemidiaphragm
  - 3. Skin folds
  - 4. Calcifications—heart valves, costal cartilages, airways, pleura (e.g. asbestosis)
- All tubes, lines and devices should be identified and their position commented upon. Examples include:
  - endotracheal or tracheostomy tubes—the tip should be at least 2 cm above the carina or located between the clavicular heads
  - central venous lines—the tip should be just above the right atrium; note in a left-sided superior vena cava the catheter lies along the left upper mediastinal border
  - pulmonary artery catheter—the tip should not extend lateral to the medial and middle thirds of the diameter of the ipsilateral hemithorax
- intra-aortic balloon pump—this should be located distal to the left subclavian
  artery but above the renal arteries; the position of the tip corresponds to just
  above the left main bronchus or in the third anterior left intercostal space; if an
  inflated intra-aortic balloon can be seen this is indicative of diastole in the
  cardiac cycle



indwelling

devices

- 1. Correct patient, time, date
- 2. Direction of X-ray beam:
  - PA (posteroanterior; film placed in front of patient), AP (anteroposterior; film behind patient) or lateral film
  - · Usually designated by a film marker
  - On a PA film the scapulae are laterally located in comparison to the supine AP film, where they are found medially
- 3. Patient position-erect, supine, lateral decubitus
  - This is usually designated by a film marker; a marker also designates the right or left side of the body on the film
  - The supine AP film is most commonly obtained in ventilated critically ill patients who are unable to sit up and support a board in front of them. Interpretation differs significantly from that of the erect PA film by virtue of the differing effects of gravity:
    - Pneumothorax presents as anterior free air with abnormal anterior diaphragmatic lucency and, classically, the 'deep sulcus sign'
    - Upper lobe prominence or diversion of the pulmonary vasculature may be normal
    - Pleural effusion settles posteriorly, producing a 'veiling' opacity of the hemithorax rather than a classic meniscus sign
    - The significance of the ratio of the cardiac silhouette to thoracic diameter is limited
- 4. Rotation—heads of clavicles should be symmetrically positioned in relation to the sternal notch and spinous process of the adjacent thoracic vertebrae
- 5. Positioning of patient on film-all areas of interest should be visualised
- 6. Adequate inspiration—at least five anterior ribs should be fully visible
- Exposure—the lower half of the thoracic vertebral bodies should be just visible behind the heart
- Knowledge of the location of the fissures is the key to localising the lung lobes (Figs 11.1-11.3);
  - Horizontal fissure—on the right side runs from the hilum to the sixth anterior rib laterally
  - Oblique fissure—runs from the level of the fourth thoracic vertebral body to the sixth anterior rib anteriorly
  - The azygous lobe is a normal variant on the right adjacent to the mediastinum.
     The azygous fissure subdivides the upper lobe in approximately 1% of individuals (Fig 11.3)
- 2. Lungs should be examined for asymmetry between sides:
  - · opacification and mass lesions
  - hyperlucency

lungs &

pleural

cavity