Departmentof
Radiology
Techniques
The Second Stage

The Chest
Lecture14

Assist. Lecturers

Fadhil Aad Leftah Al-Zurfi

Ali Hani Kareem

Salman Mohammed

- **Minimum SID—72 inches (183 cm).**
- **IR size—35×43cm(14× 17 inches), portrait or land-scape.**

1- Postero-anterior – erect

Position of patient and image receptor

• The patient is positioned facing the receptor with the chin extended and centred to the middle of the top of the receptor.

• The feet are paced slightly apart so that the patient is able to remain steady.

• The median sagittal plane is adjusted at right-angles to the middle of the receptor; the shoulders are rotated forward and pressed downward in contact with the receptor or vertical stand.

• This is achieved by placing the dorsal aspect of the hands behind and below the hips with the elbows brought forward, or by allowing the arms to encircle the vertica

• The collimated horizontal beam is directed at right-angles to the receptor and centred at the level of the 8th thoracic vertebrae (i.e. spinous process of T7) which is coincident with the lung midpoint.

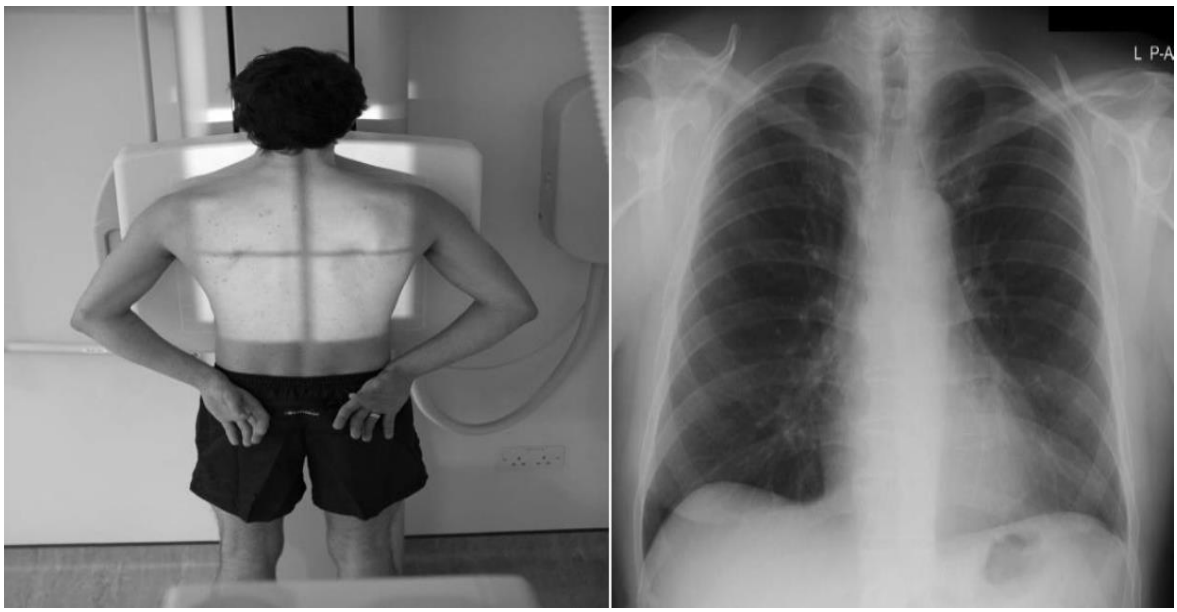


Figure (1): PA radiograph of chest taken using high kV technique.

2- Antero-posterior – erect

Position of patient and image receptor

• The patient may be standing or sitting with their back against the image receptor, which is supported vertically with the upper edge of the receptor above the lung apices.

• The median sagittal plane is adjusted at right-angles to the middle of the receptor.

• The shoulders are brought downward and forward, with the backs of the hands below the hips and the elbows well forward, which has the effect of projecting the scapulae clear of the lung fields.

• The collimated horizontal beam is angled caudally until it is at right-angles to the sternum and centred midway between the sternal notch and the xiphisternum.

Figure (2): Normal Antero-posterior radiograph of the thorax

3- Antero-posterior – supine

Position of patient and image receptor

• The detector is carefully positioned under the patient's chest with the upper edge of the detector above the lung apices (C7 prominence). The detector is orientated to ensure that the lung fields are included on the image.

• The median sagittal plane is adjusted at right-angles to the middle of the detector, and the patient's pelvis is checked to ensure that it is not rotated.

• The arms are rotated laterally and supported by the side of the trunk. The head is supported on a pillow, with the chin slightly raised.

The collimated vertical beam is angled caudally until it is at right angles to the sternum and centred midway between the sternal notch and the xiphisternum

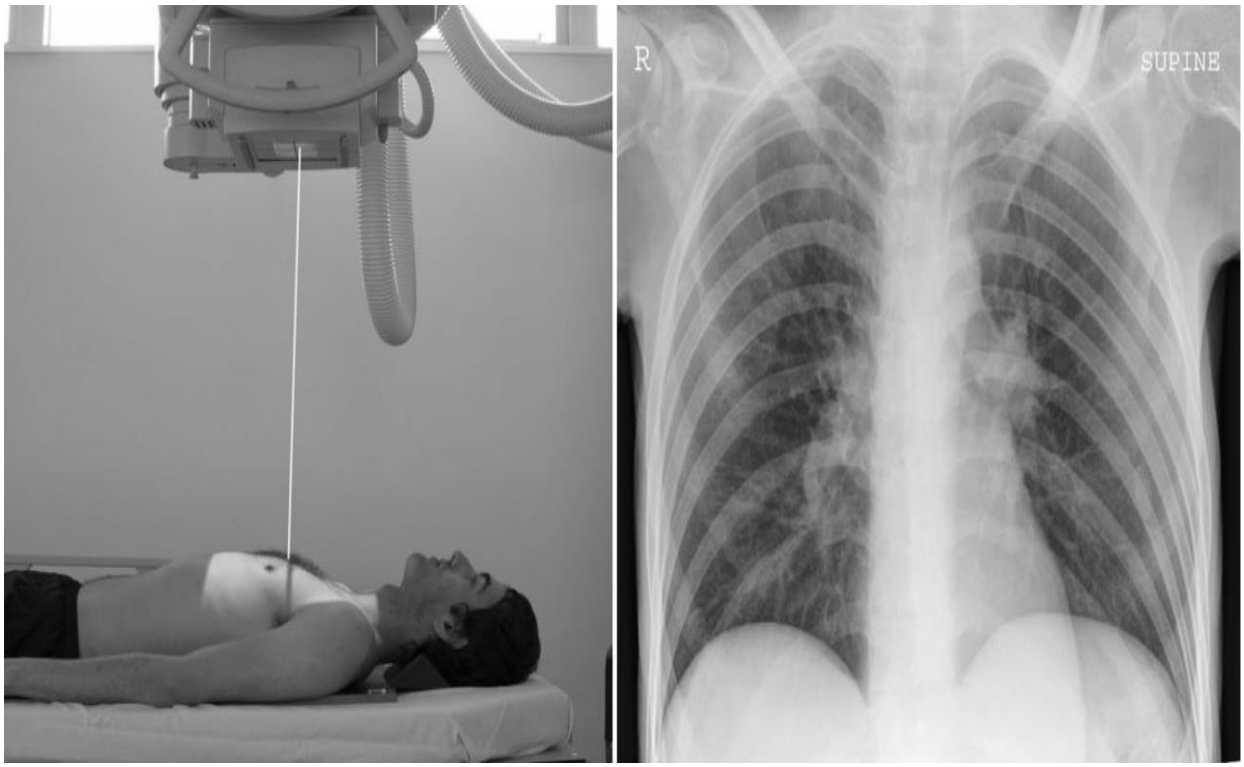


Figure (3): Normal supine radiograph of thorax.

4- Antero-posterior – semi-erect

Position of patient and image receptor

• The patient is supported in a semi-recumbent position facing the X-ray tube. The degree to which they can sit erect will be dependent on their medical condition.

• The image receptor is supported against the back, using pillows or a large 45° foam pad, with its upper edge above the lung fields.

The collimated horizontal beam is first directed at rightangles to the image receptor and then angled caudally until it is at right-angles to the sternum and centred midway between the sternal notch and the xiphisternum.

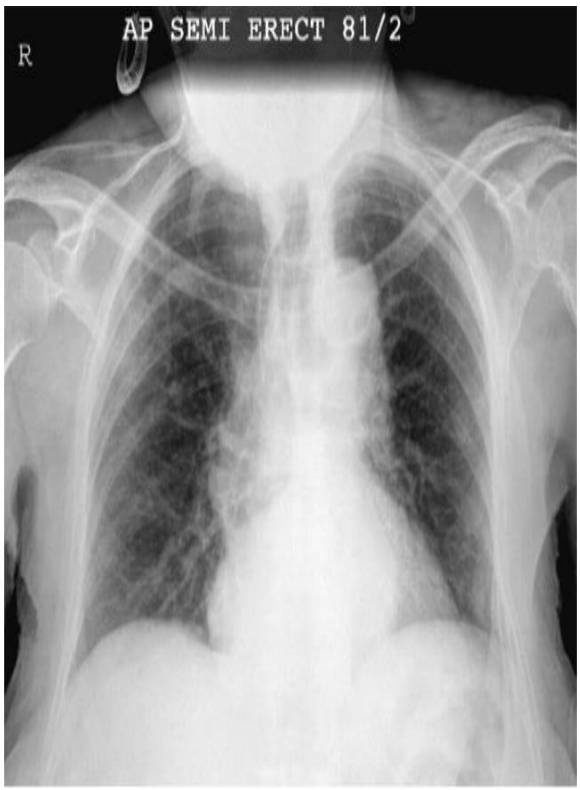


Figure (4): Normal semi-erect radiograph of thorax. The chin is just superimposed on the upper thorax.

5- Lateral

Position of patient and image receptor

- The patient is turned to bring the side effect in contact with the cassette.
- The arms are folded over the head.
- center to the middle of the cassette at the mid-axillary line.

Figure (5): Lateral radiograph of same patient showing a tumour in the right lower lobe.

6-Lordotic View

This technique may be used to demonstrate right middle lobe collapse or an interlobar pleural effusion. The patient is positioned to bring the middle lobe fissure horizontal.

Position of patient and image receptor

• The patient is placed for the PA projection. Then clasping the sides of the vertical Bucky, the patient bends backwards at the waist.

• The degree of dorsiflexion varies for each subject, but in general is about 30–40°.

• The collimated horizontal beam is directed at right-angles to the middle of the image receptor.

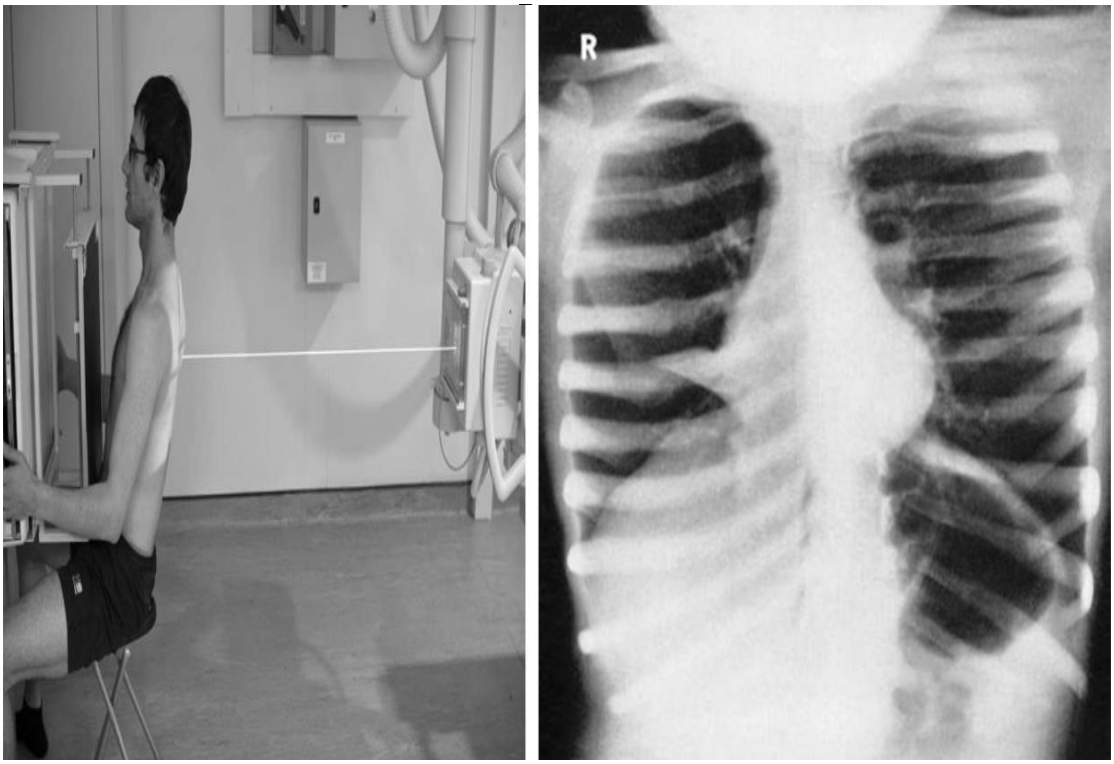
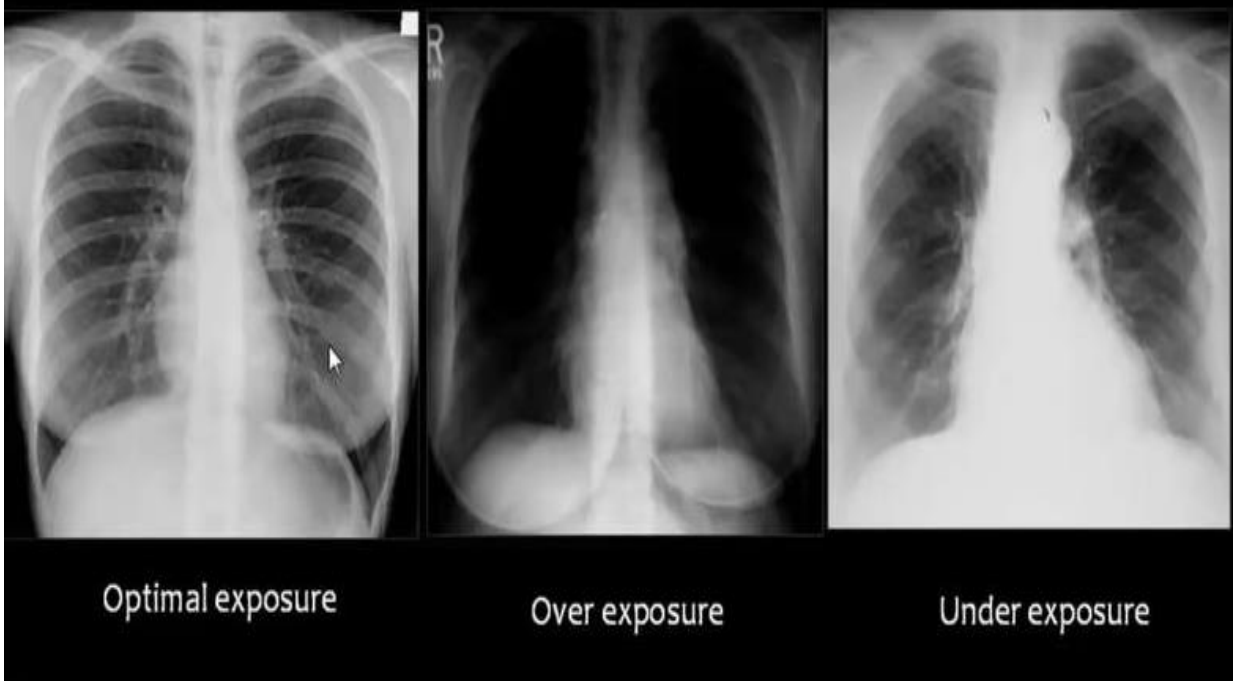
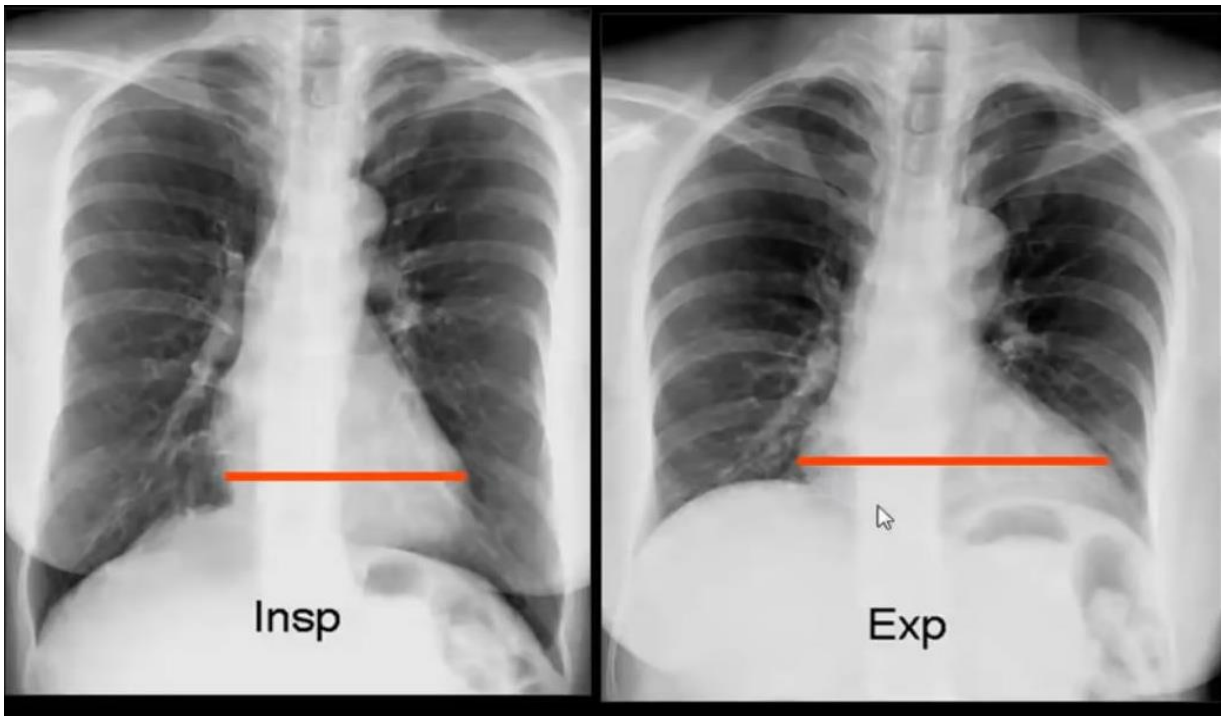
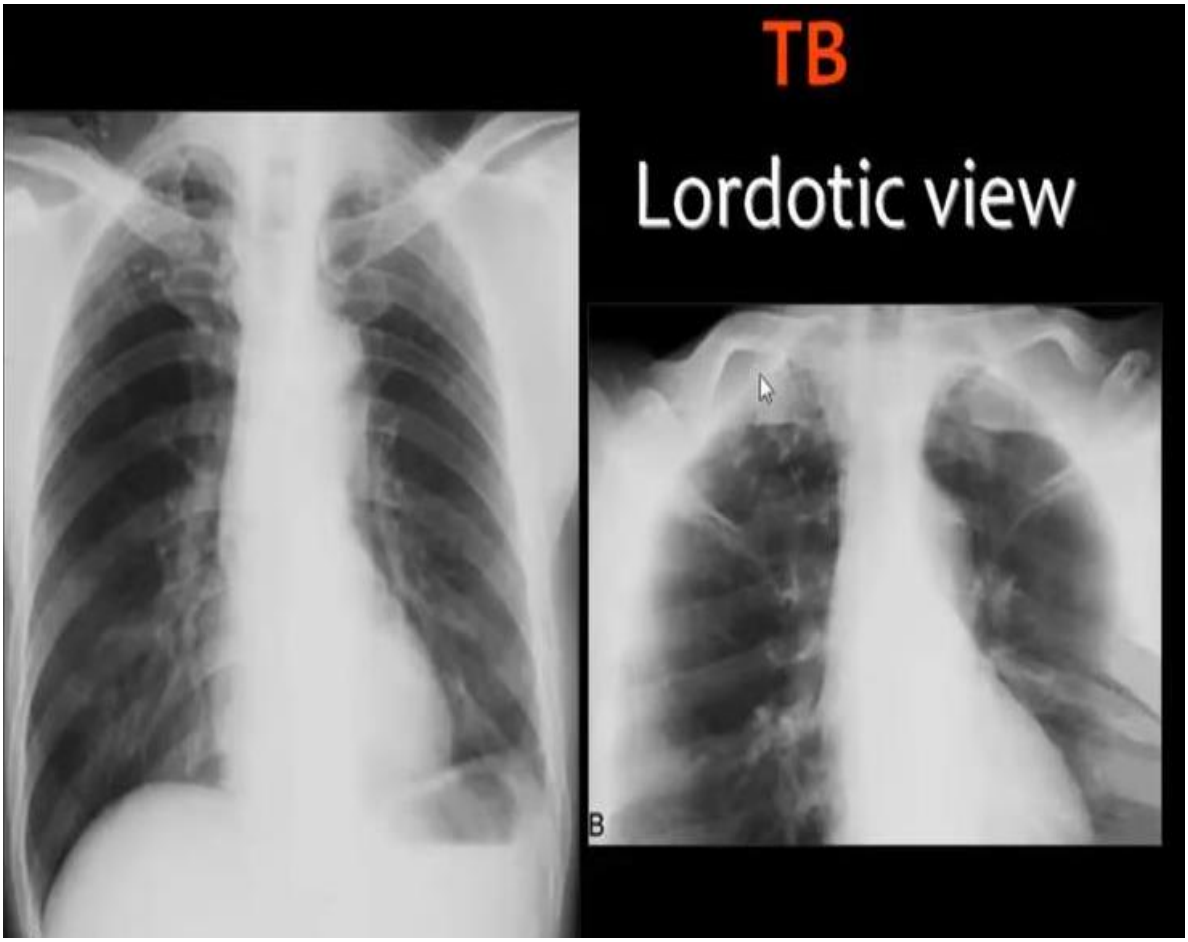


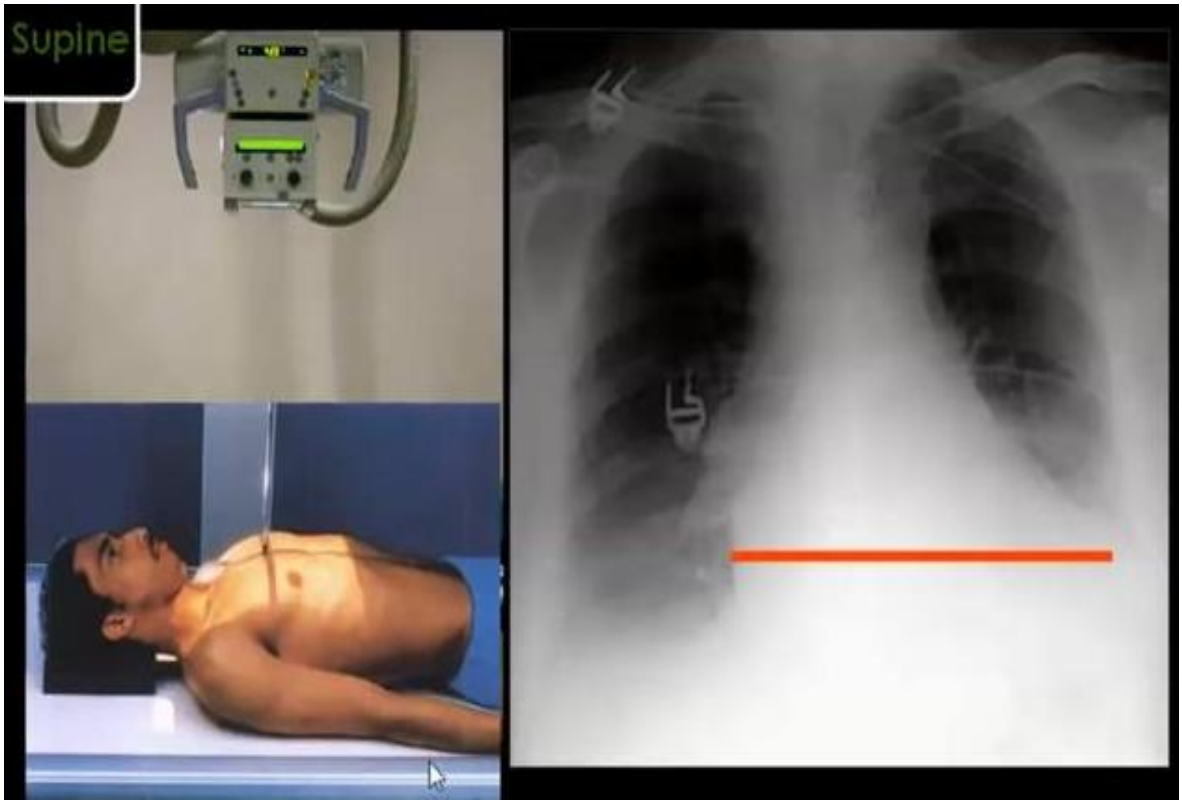
Figure (6): Lordotic posterior-anterior radiograph showing middle lobe collapse

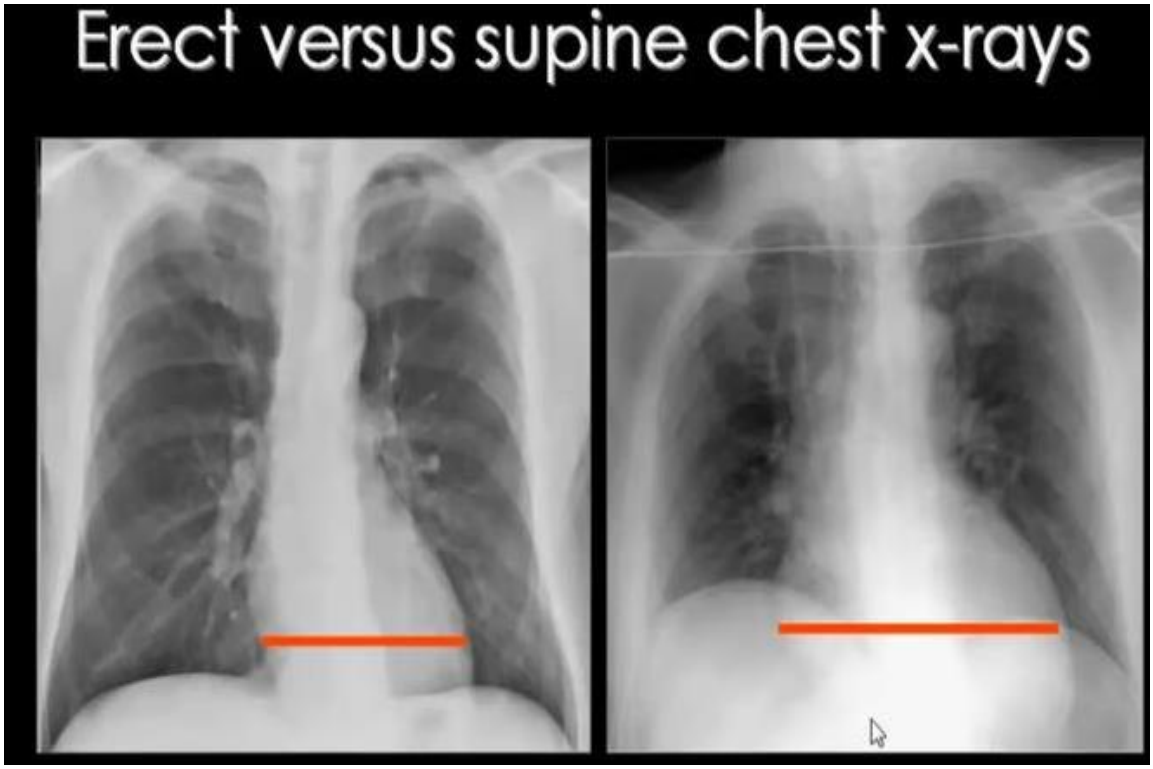
Adequate penetration

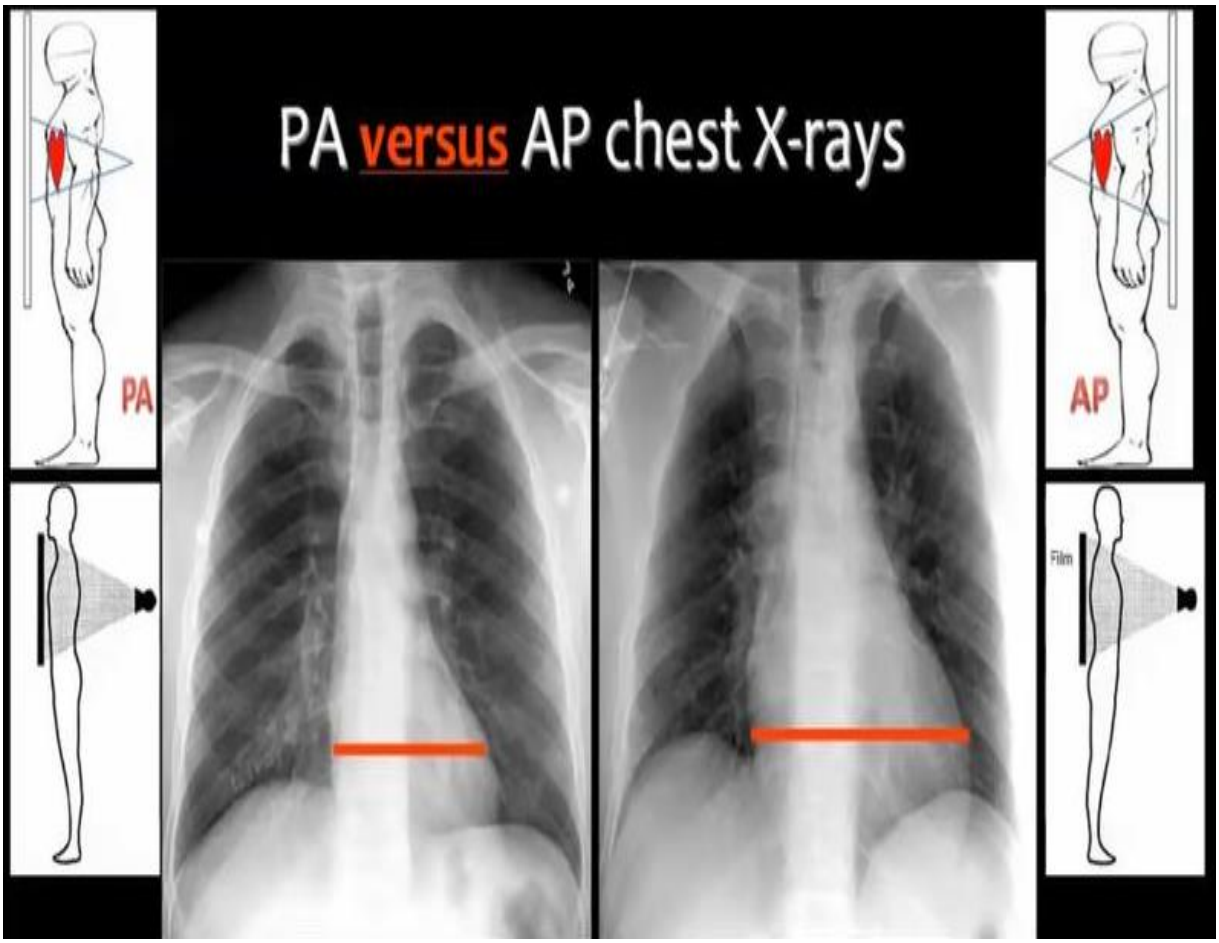





TB
Lordotic view
B


Supine


Erect versus supine chest x-rays


PA versus AP chest X-rays
PA
AP
Film


Thanks