



SNS COLLEGE OF ALLIED HEALTH SCIENCES
SNS Kalvi Nagar, Coimbatore - 35
Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT OF RADIOGRAPHY AND IMAGING TECHNOLOGY

II YEAR

TOPIC – RADIOGRAPHIC PROJECTIONS OF HUMERUS



RADIOGRAPHIC PROJECTIONS OF HUMERUS



- **HUMERUS – SUPRACONDYLAR FRACTURE - LATERAL**
- ANTERO-POSTERIOR
- **HUMERUS SHAFT - ANTERO-POSTERIOR(SUPINE)**
- LATERAL-SUPINE
- ANTERO-POSTERIOR(ERECT)
- LATERAL(ERECT)
- **HUMERUS – INTERTUBEROUS SULCUS (BICIPITAL GROOVE) - AXIAL**
- ALTERNATIVE AXIAL PROJECTION
- **HUMERUS NECK –ANTERO POSTERIOR**
- AXIAL PROJECTION(LATERAL – SUPERO INFERIOR)
- LATERAL – (INFERO-SUPERIOR)
- LATERAL OBLIQUE



HUMERUS – SUPRACONDYLAR FRACTURE



LATERAL

METHOD 1 :

- The patient sits or stands facing the X-ray tube.
- A cassette is supported between the patient trunk and elbow, with the medial aspect of the elbow in contact with the cassette.

CENTRING:

The x-ray tube is angled so that the central ray is directed perpendicular to the shaft of the humerus and centred to the lateral epicondyle.



METHOD 2:

- A Cassette is supported vertically in a cassette holder.
- The patient stands sideways, with the elbow flexed and the lateral aspect of the injured elbow in contact with the cassette.
- The arm is gently extended backwards from the shoulder.
- The patient is rotated forwards until the elbow is clear of the rib cage but still in contact with the cassette, with the line joining the epicondyles of the humerus at right-angles to the cassette.

CENTRING:

- The horizontal central ray is directed to the medial epicondyle and the beam collimated to the elbow.



HUMERUS – SUPRACONDYLAR FRACTURE





HUMERUS – SUPRACONDYLAR FRACTURE



ANTERO-POSTERIOR

POSITION OF PATIENT:

- From the lateral position, the patient upper body is rotated towards the affected side.
- The cassette is placed in an erect cassette holder, and the patient position is adjusted so that the posterior aspect of the upper arm is in contact with the cassette.

CENTRING:

- Central ray is directed at right angles to the humerus to pass through the forearm to a point midway between the epicondyles of the humerus.



HUMERUS SHAFT



ANTERO-POSTERIOR-SUPINE

POSITION:

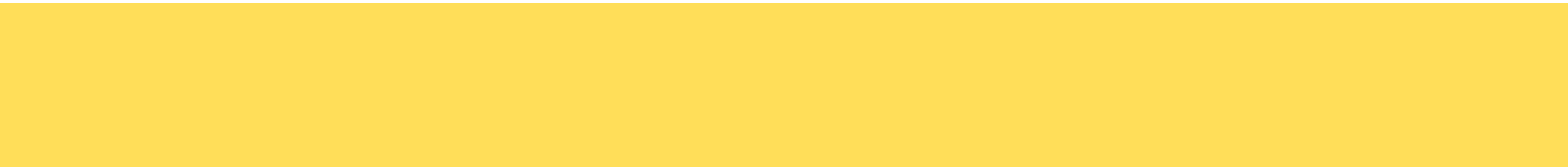
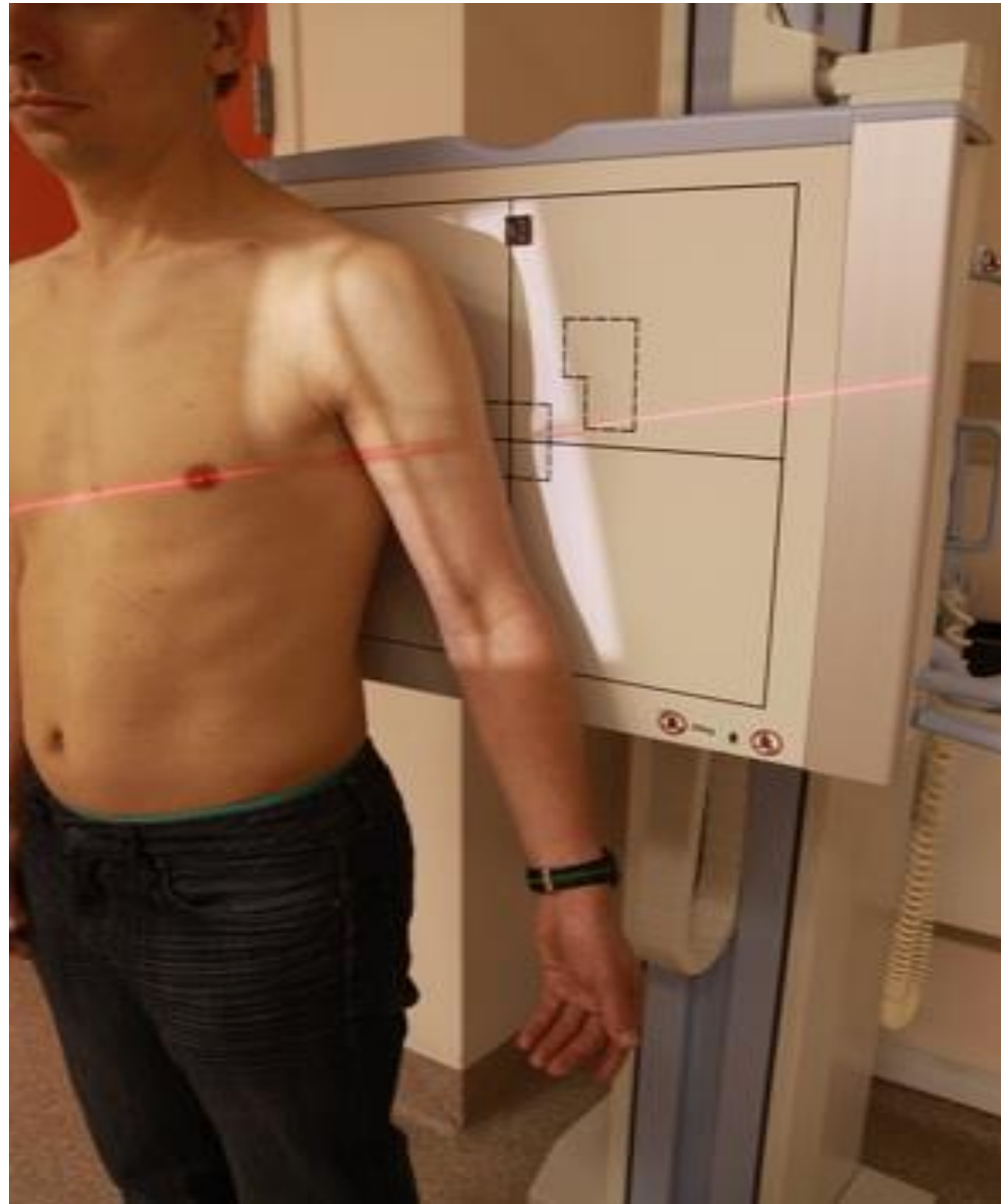
- The patient lies supine on the xray table, with the unaffected side raised and supported on pads.
- The cassette is positioned under the affected limb and adjusted to include the shoulder and elbow joint.
- The arm is slightly adducted and the elbow joint is fully extended, so that the posterior aspect of the upper arm is in contact with the cassette.
- The arm is adjusted to ensure that the medial and lateral epicondyles are equidistant from the cassette.

CENTRING:

- Midway between the shoulder and elbow joint.



HUMERUS SHAFT





HUMERUS SHAFT



LATERAL – SUPINE

POSITION:

- From the antero-posterior, the elbow joint is flexed to 90 degree.
- The arm is abducted and then medially rotated through 90 degree to bring the medial aspect of the arm, elbow and forearm in contact with the table.
- The cassette is placed under the arm and adjusted to include both the shoulder and elbow joints.
- The humerus is adjusted to ensure that the medial and lateral epicondyles of the humerus are superimposed.

CENTRING:

- Midway between the shoulder and elbow joints.



HUMERUS SHAFT



ANTERO-POSTERIOR-ERECT POSITION:

- The cassette is placed in an erect cassette holder.
- The patient sits or stands with their back in contact with the cassette.
- The patient is rotated towards the affected side to bring the posterior aspect of the shoulder, upper arm and elbow into contact with the cassette.

CENTRING:

- The central ray is directed at right angles to the shaft of the humerus and centred between the shoulder and elbow joints.



HUMERUS SHAFT



LATERAL ERECT

POSITION:

- The cassette is placed in an erect cassette holder.
- From the anterior position, the patient is rotated through 90 degree until the lateral aspect of the injured arm is in contact with the cassette.
- The patient is now rotated further until the arm is just clear of the ribcage but still in contact with the cassette.

CENTRING:

- The horizontal central ray is directed at right angles to the shaft of the humerus and centred midway between the shoulder and elbow joint.



HUMERUS – INTERTUBEROUS SULCUS (BICIPITAL GROOVE)



AXIAL

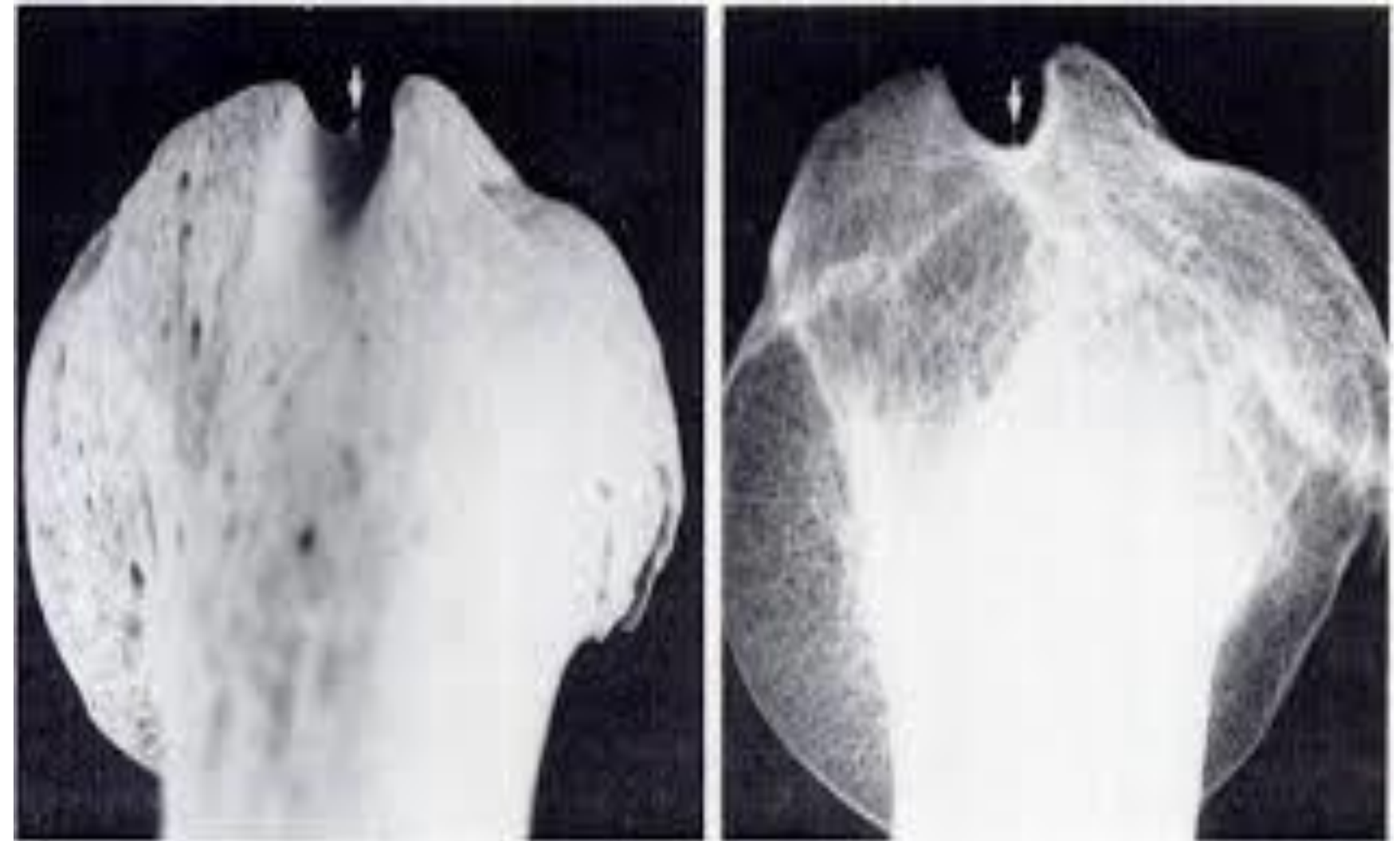
POSITION:

- The patient lies supine on the x-ray table.
- The cassette is supported vertically above the shoulder.
- The arm is rested on the tabletop with the palm of the hand facing the patients side and the line joining the epicondyles of the humerus at 45 degrees to the table.

CENTRING:

- Anterior part of the head of the humerus.

BICIPITAL GROOVE





ALTERNATIVE AXIAL PROJECTION



POSITION

- The patient sits with their shoulder joint against the vertical bucky.
- The holder should be angled 15 degrees forwards, but if this facility not available the cassette can be supported above the shoulder.
- The arm is abducted anteriorly and supported to bring the long axis of the shaft of the humerus perpendicular to the cassette.
- The hand is rotated 45 degrees laterally from the prone position to bring the bicipital groove in profile with the central beam.

CENTRING:

- The central ray is directed cranially along the long axis of the humerus and centered to the anterior part of the head of the humerus. The beam is collimated to the humeral head.



HUMERUS NECK



ANTERO – POSTERIOR



HUMERUS NECK

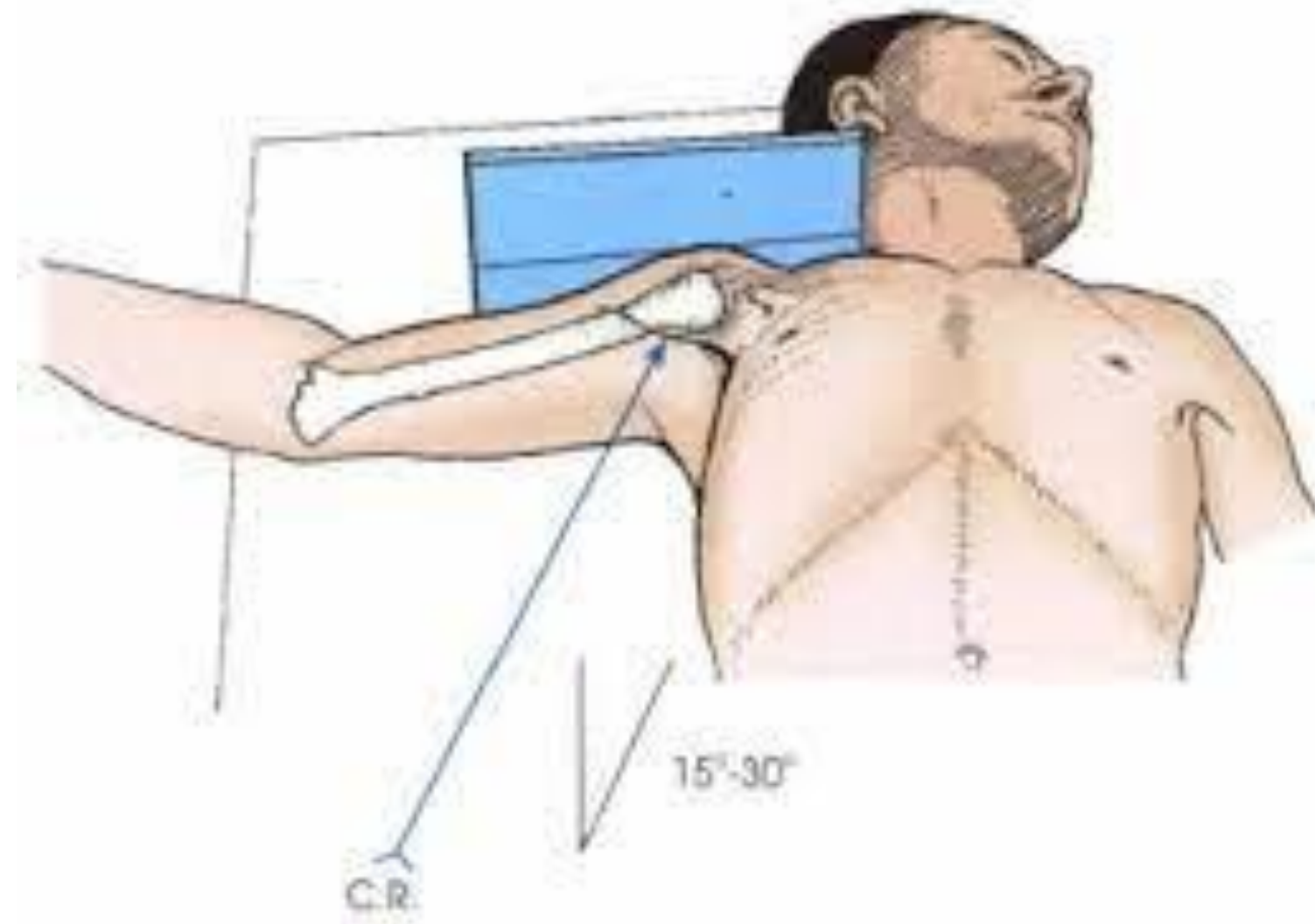
AXIAL PROJECTION – LATERAL SUPERO INFERIOR



Normal supero-inferior image of the shoulder

HUMERUS NECK

LATERAL - INFERO SUPERIOR



HUMERUS NECK

LATERAL OBLIQUE





ASSESSMENT



- 1) Name the projections to demonstrate humerus supracondylar fracture.
- 2) Projections for humerus shaft.
- 3) Projections to demonstrate humerus neck.
- 4) Projections to demonstrate bicipital groove.



