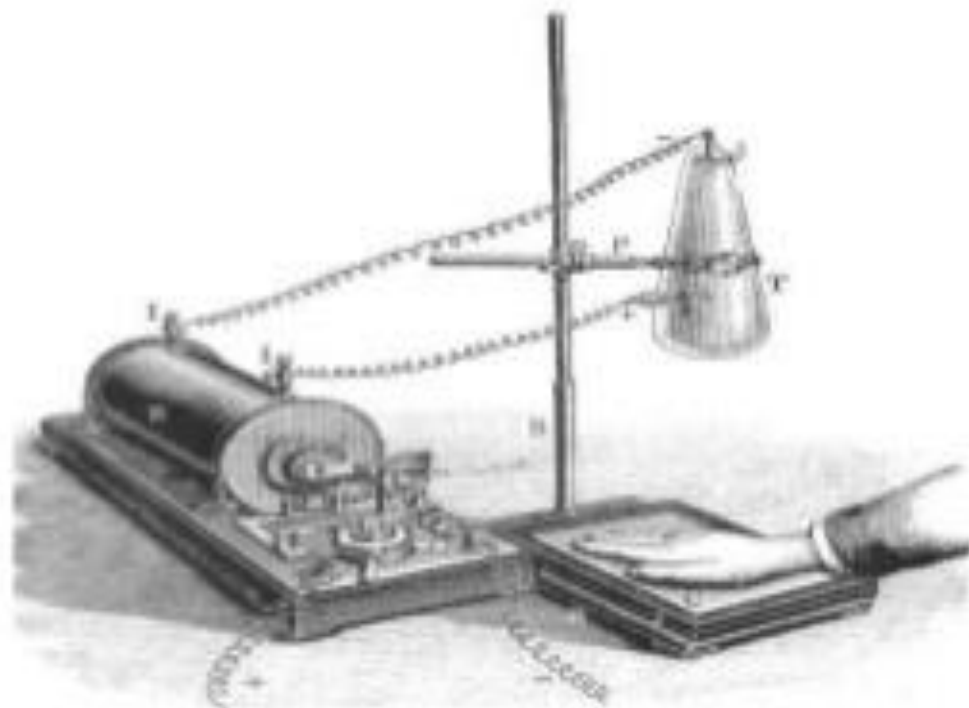


RADIOLOGY OF UPPER LIMB

DR NAJMA ATTAULLAH
LECTURER ANATOMY DEPTT

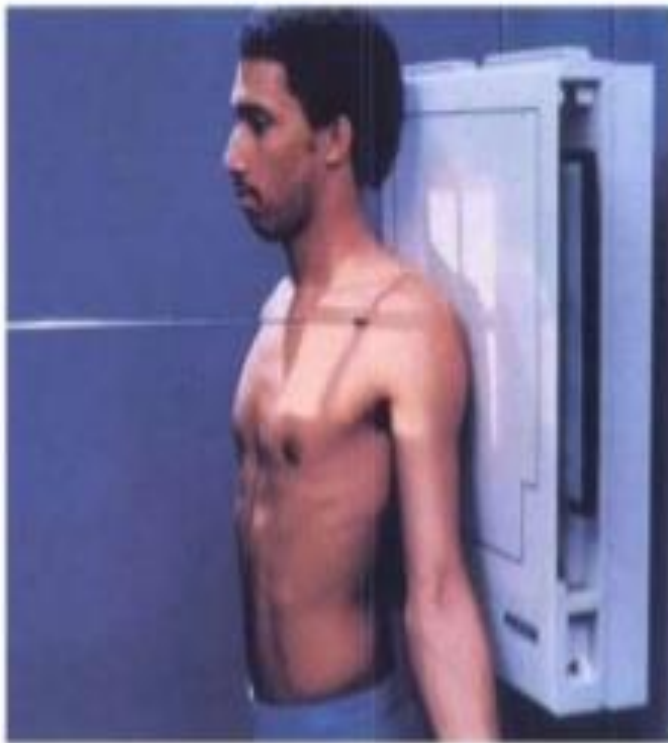
INTRODUCTION

- The study of anatomy using radiographic films is called radiological anatomy.
- Radiographs are an essential element in clinical diagnosis
- X-rays were discovered by Wilhelm Konrad Rontgen, a German physicist, in 1895.

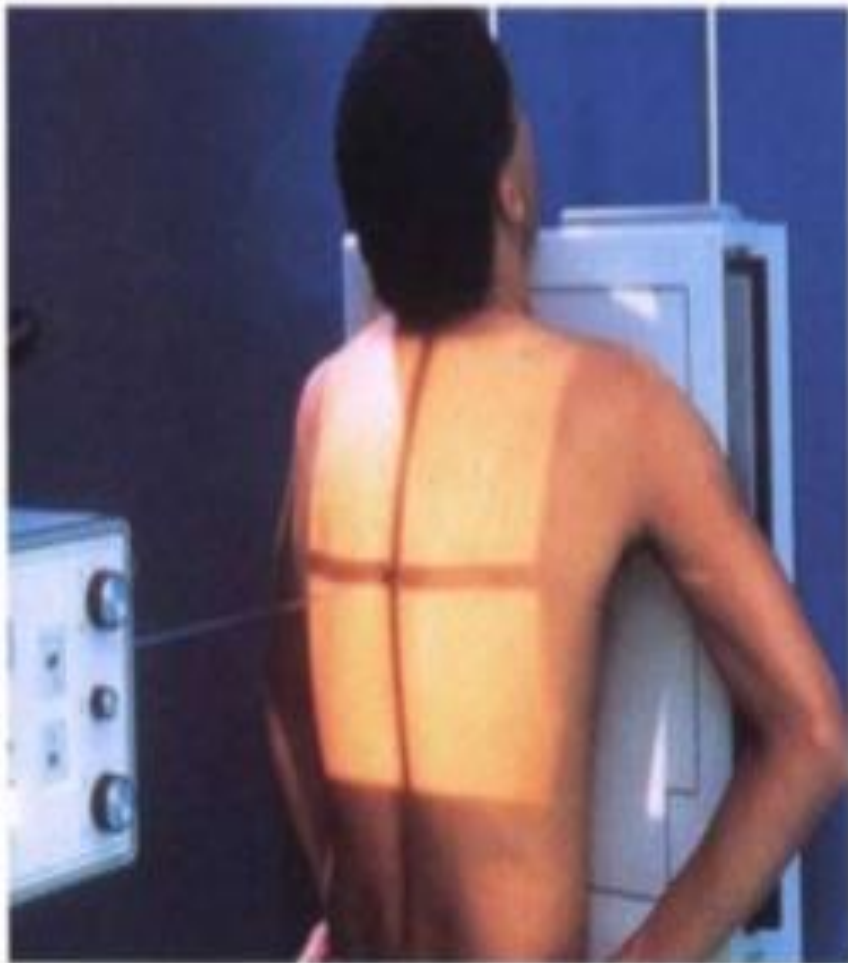


STANDARD VIEWS OF A RADIOGRAPH

- Antero posterior view



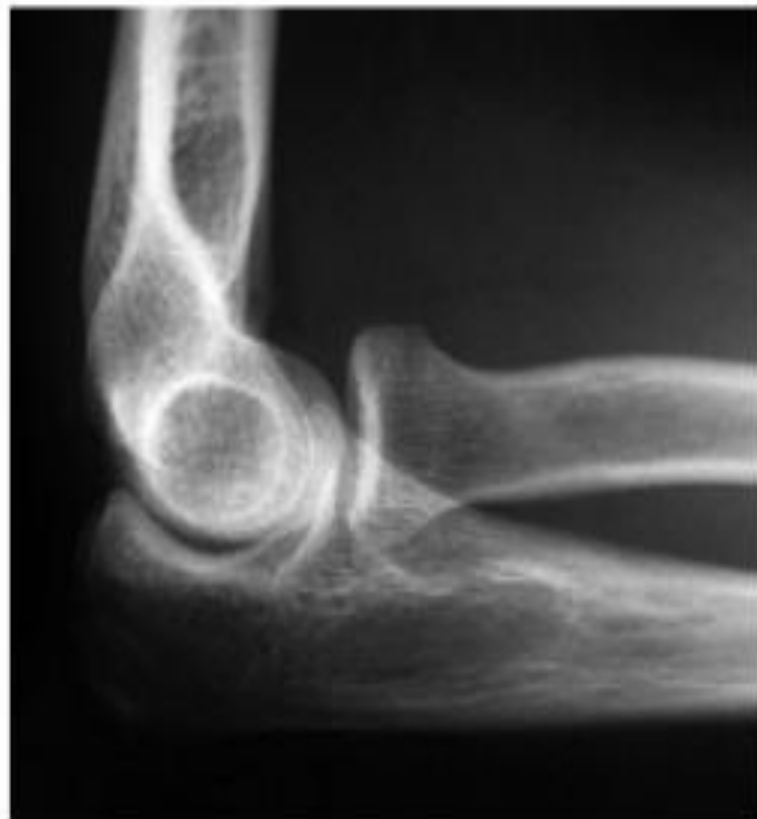
- Postero anterior view



- Oblique view



- Lateral view

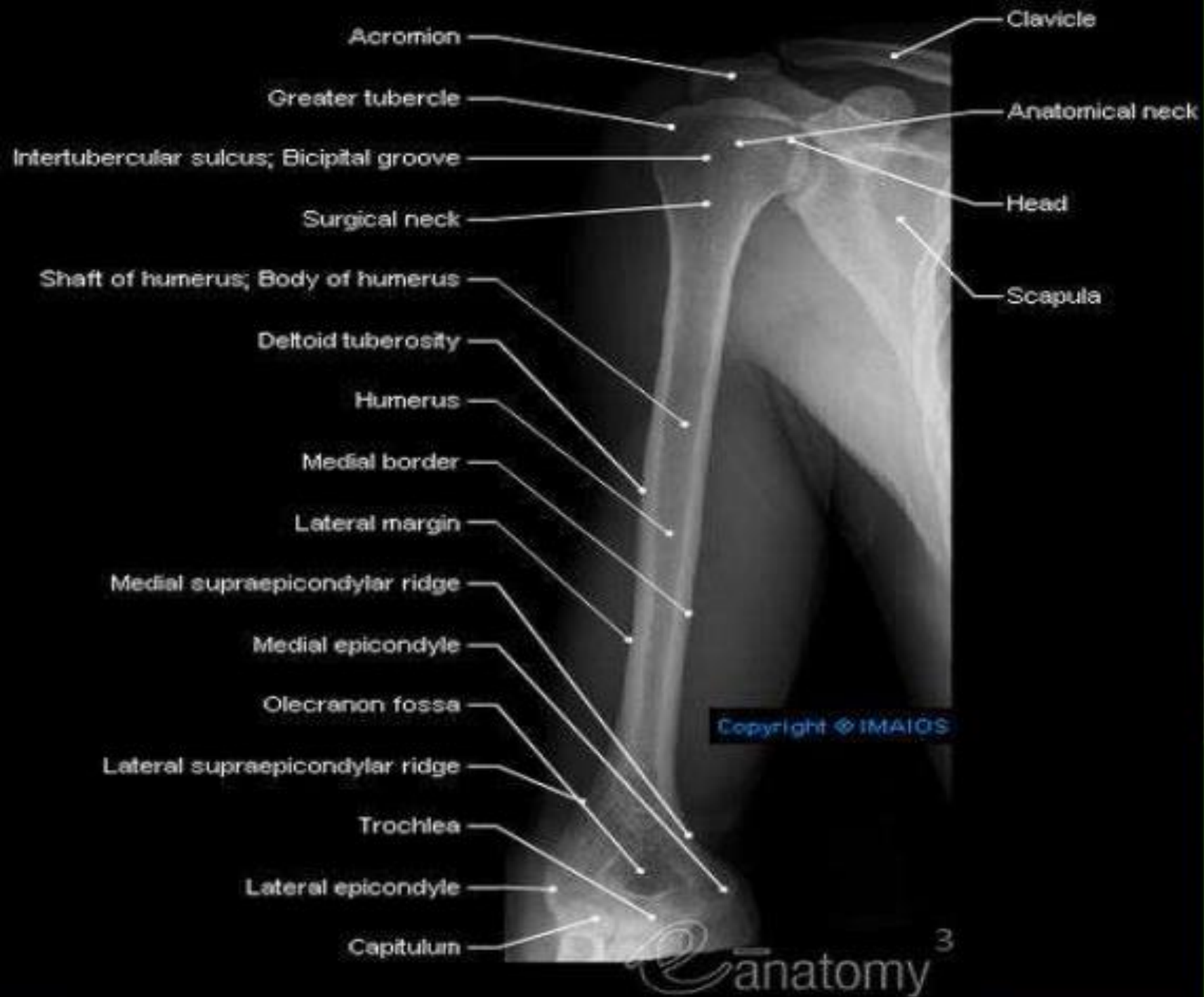


SHOULDER REGION









• ELBOW





Wrist AND HAND

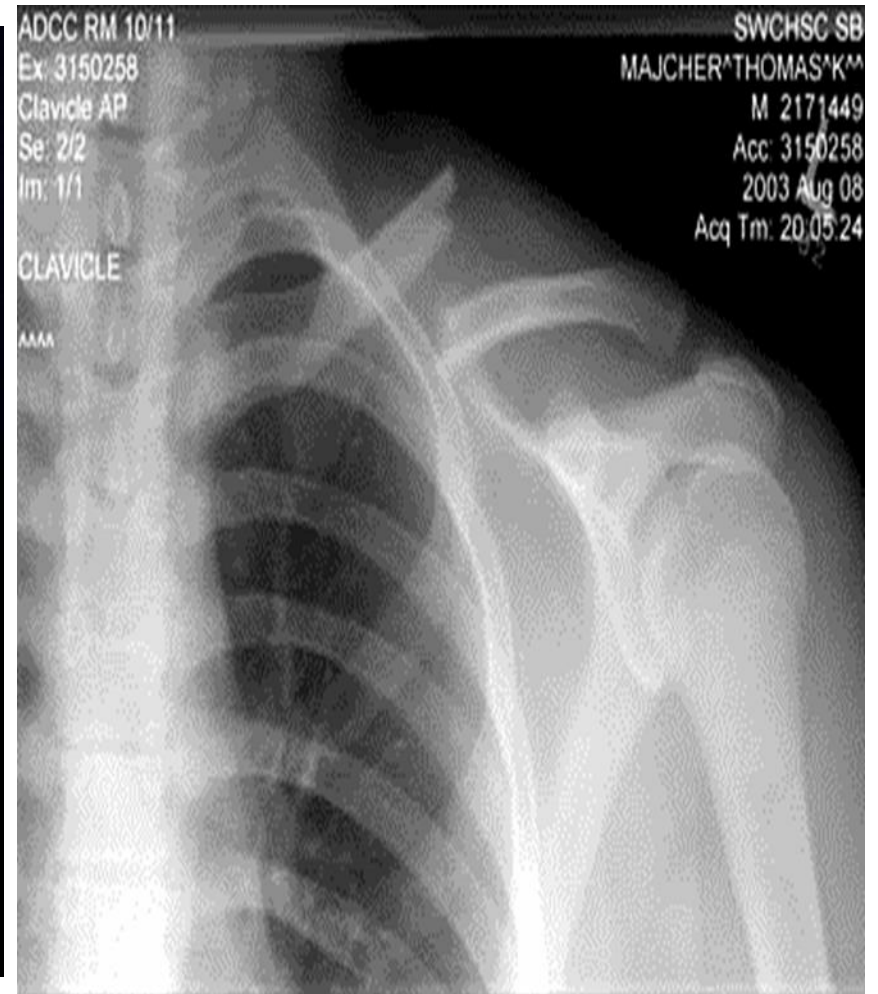


Mechanism of Injuries of the Upper Limb

- Mostly **Indirect**
- Commonly described as “ a fall on outstretched hand “
- **Type** of injury depends on **position** of the upper limb at the time of impact : **Flexed, Extended, adducted, abducted, pronated or supinated**

Fracture of the clavicle in Adults

- Common especially in children and elderly
- Commonest site is the middle one third
- Mainly due to indirect injury
- Direct injury leads to comminuted fracture



Treatment

- Conservative by an arm sling or figure of eight bandage
- Operative fixation is indicated if there is an open fracture, neurovascular injury or nonunion

Figure of eight Bandage



Dislocation of the Shoulder

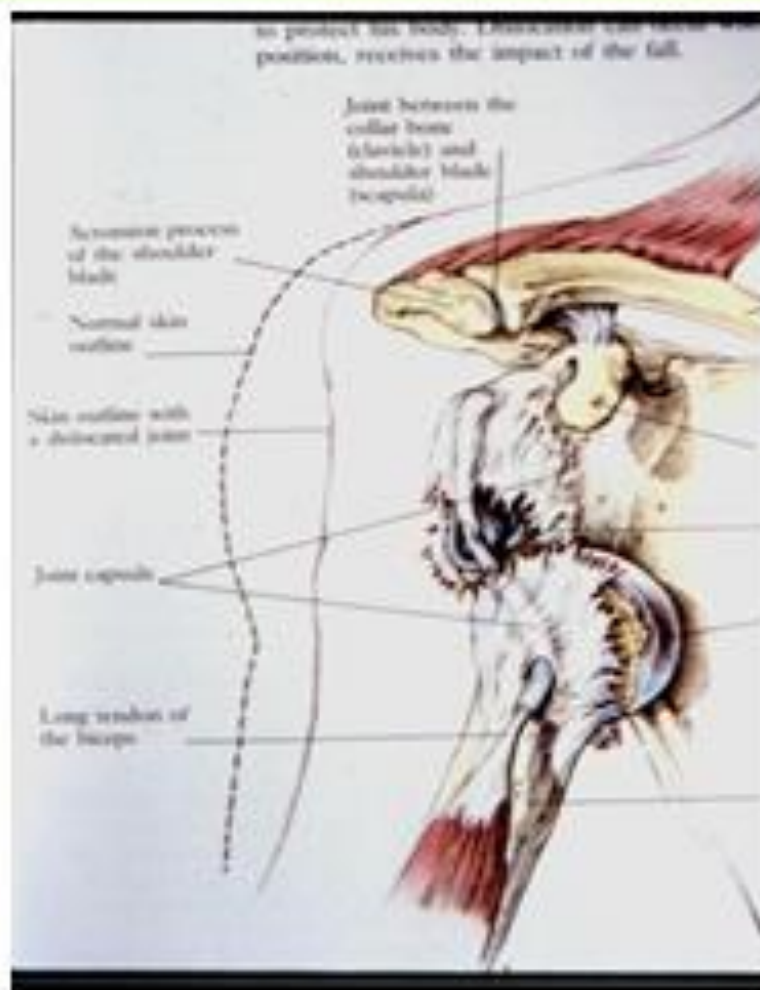
- Mostly **Anterior** $> 95\%$ of dislocations
- **Posterior** Dislocation occurs $< 5\%$
- True **Inferior** dislocation (luxatio erecta) occurs $< 1\%$
- **Habitual** Non traumatic dislocation may present as Multi directional dislocation due to generalized ligamentous laxity and is **Painless**

Mechanism of anterior shoulder dislocation

- Usually **Indirect** fall on **Abducted** and **extended** shoulder
- May be **direct** when there is a **blow** on the **shoulder** from **behind**

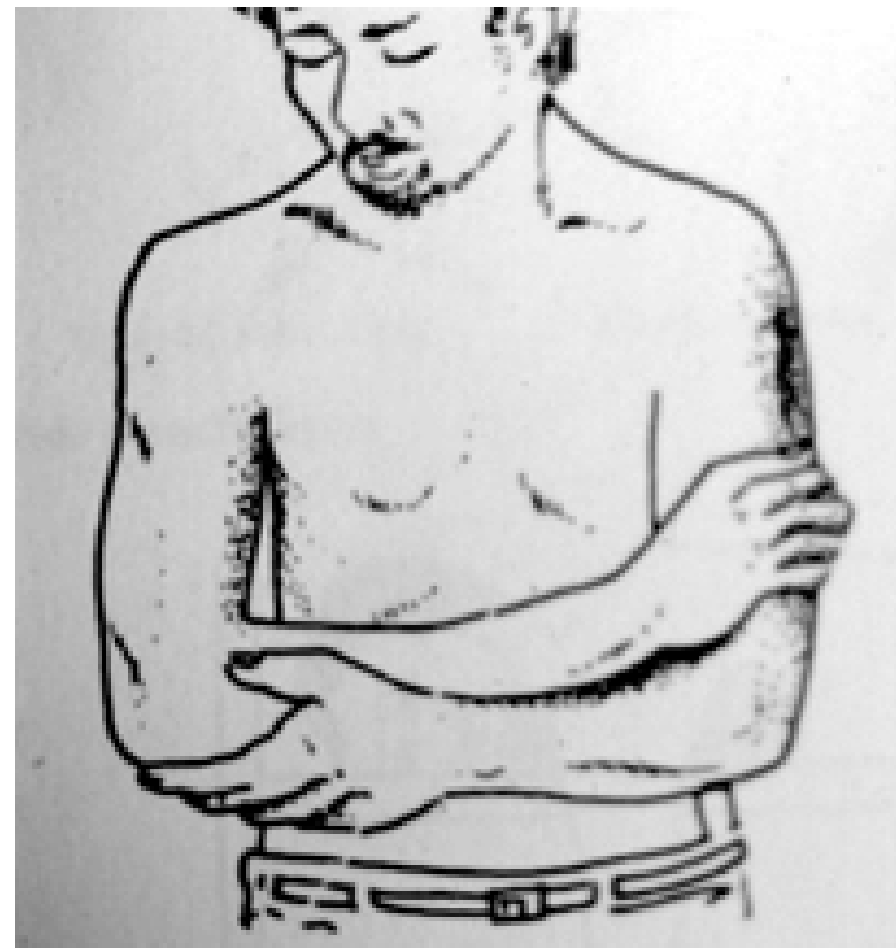
Anterior Shoulder dislocation

- Usually also inferior
- **Bankart's Lesion**



Clinical Picture

- Patient is in pain
- Holds the injured limb with other hand close to the trunk
- The shoulder is abducted and the elbow is kept flexed
- There is loss of the normal contour of the shoulder



Clinical Picture

- Loss of the contour of the shoulder may appear as a step
- Anterior bulge of head of humerus may be visible or palpable
- A gap can be palpated above the dislocated head of the humerus



X Ray anterior Dislocation of Shoulder

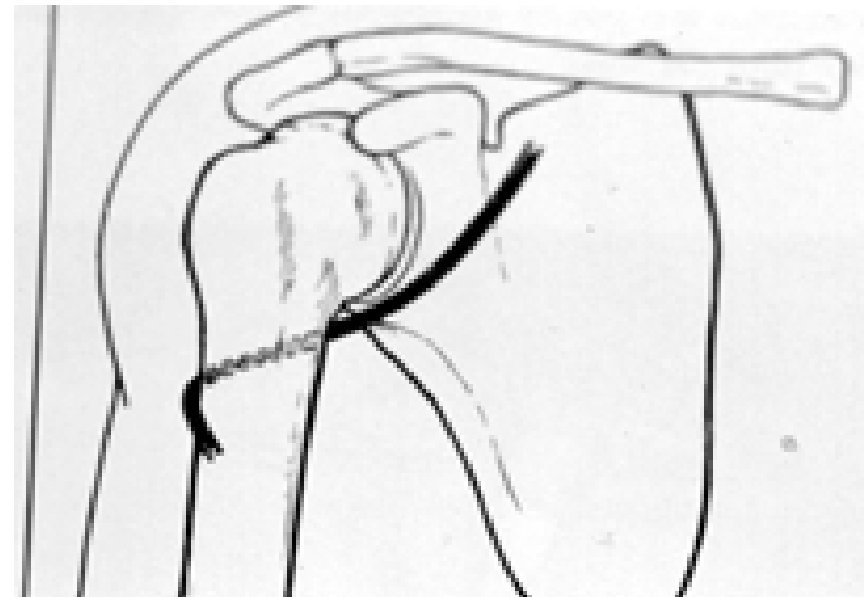


Associated injuries of anterior Shoulder Dislocation

- Injury to the neuro vascular bundle in axilla (**rare**)
- Injury of the **Axillary or Circumflex Nerve** (Usually stretching leading to temporary neuropraxia)
- Associated **fracture**

Axillary Nerve Injury

- Also called circumflex nerve
- It is a branch from posterior cord of Brachial plexus
- It hooks close round neck of humerus from posterior to anterior
- It pierces the deep surface of deltoid and supply it and the part of skin over it



Management of Anterior Shoulder Dislocation

- Is an **Emergency**
- It should be reduced in less than 24 hours or there may be Avascular Necrosis of head of humerus
- Following reduction the shoulder should be immobilised strapped to the trunk for 3-4 weeks and rested in a collar and cuff

Complications of anterior Shoulder Dislocation : Early

- Neuro vascular injury (rare)
- Axillary nerve injury
- Associated Fracture of neck of humerus or greater or lesser tuberosities

Complications of anterior shoulder Dislocation : Late

- **Avascular necrosis** of the head of the Humerus
(high risk with delayed reduction)
- **Heterotopic calcification** (used to be called
Myositis Ossificans)

- **Recurrent dislocation**

Fractures of The Humerus



- **Proximal** Humerus (includes surgical and anatomical neck)
- **Shaft** of Humerus
- **Distal** humerus (includes **Supra Condylar** fracture in children)

Fracture Proximal Humerus



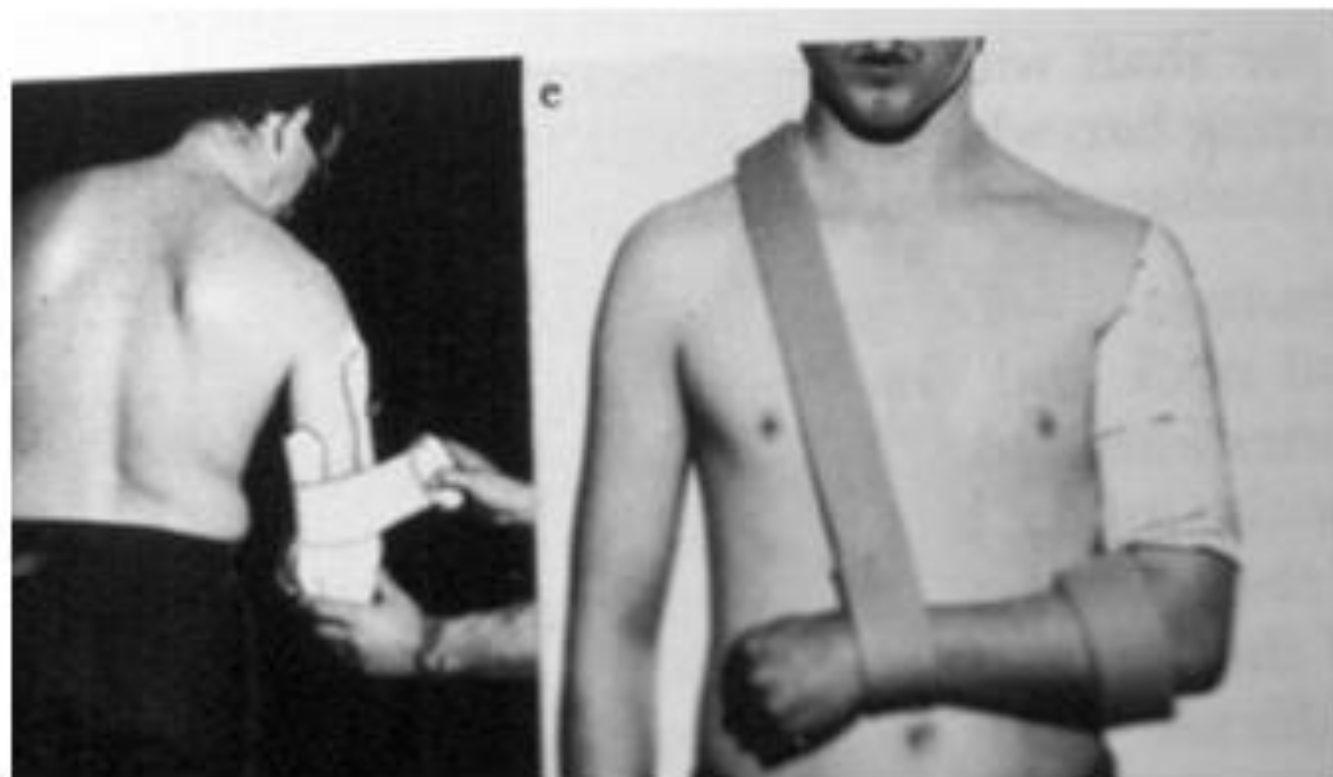
Fracture shaft of the Humerus



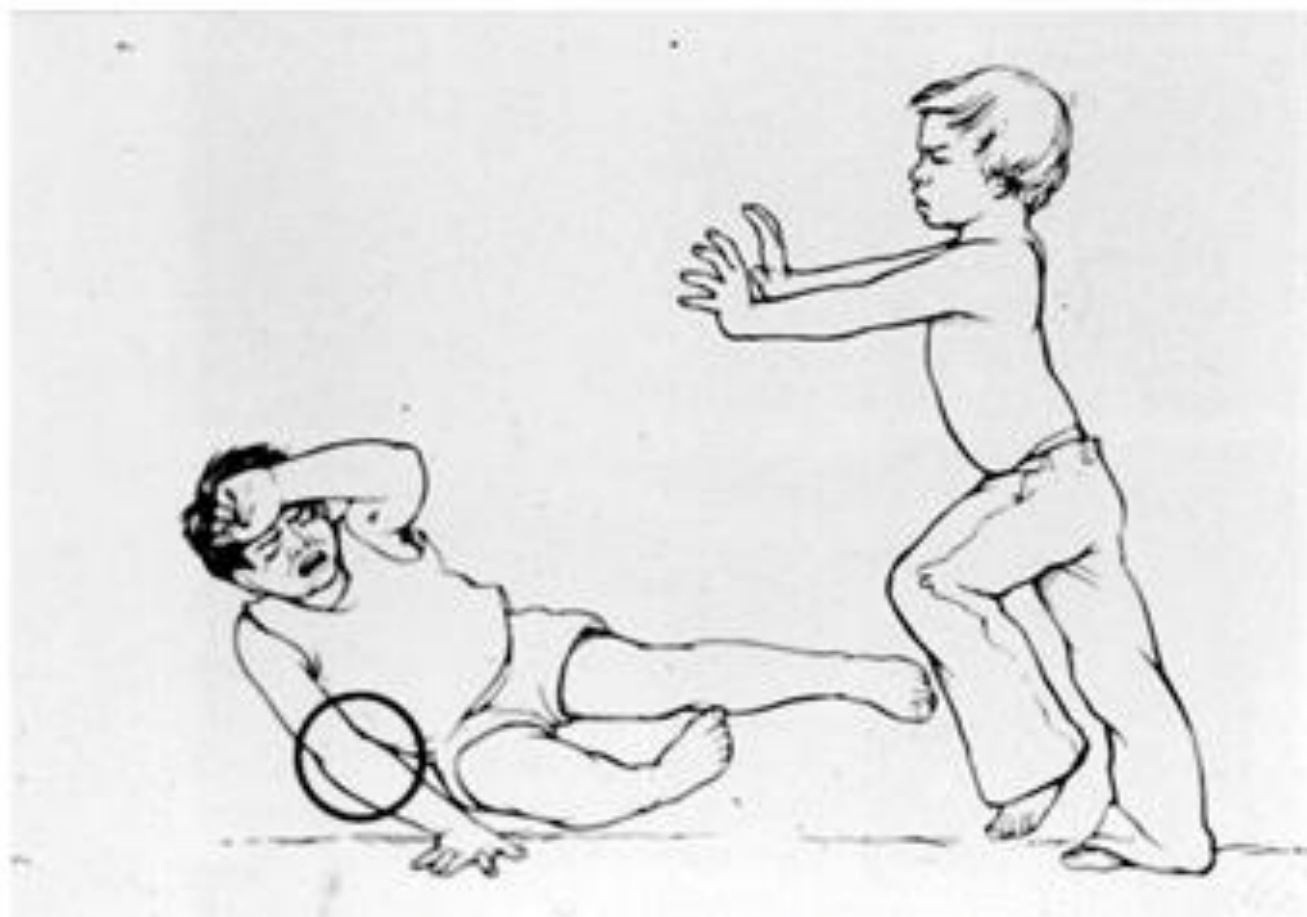
Management of Fracture Shaft of the Humerus

- Most of the time is **Conservative**
- **Closed Reduction** in upright position followed by application of **U shaped Slab of POP** or Cylinder cast
- Few weeks later or initially in stable fractures **Functional Brace** may be used

U Shaped slab of POP



Supra-condylar Fracture of Humerus



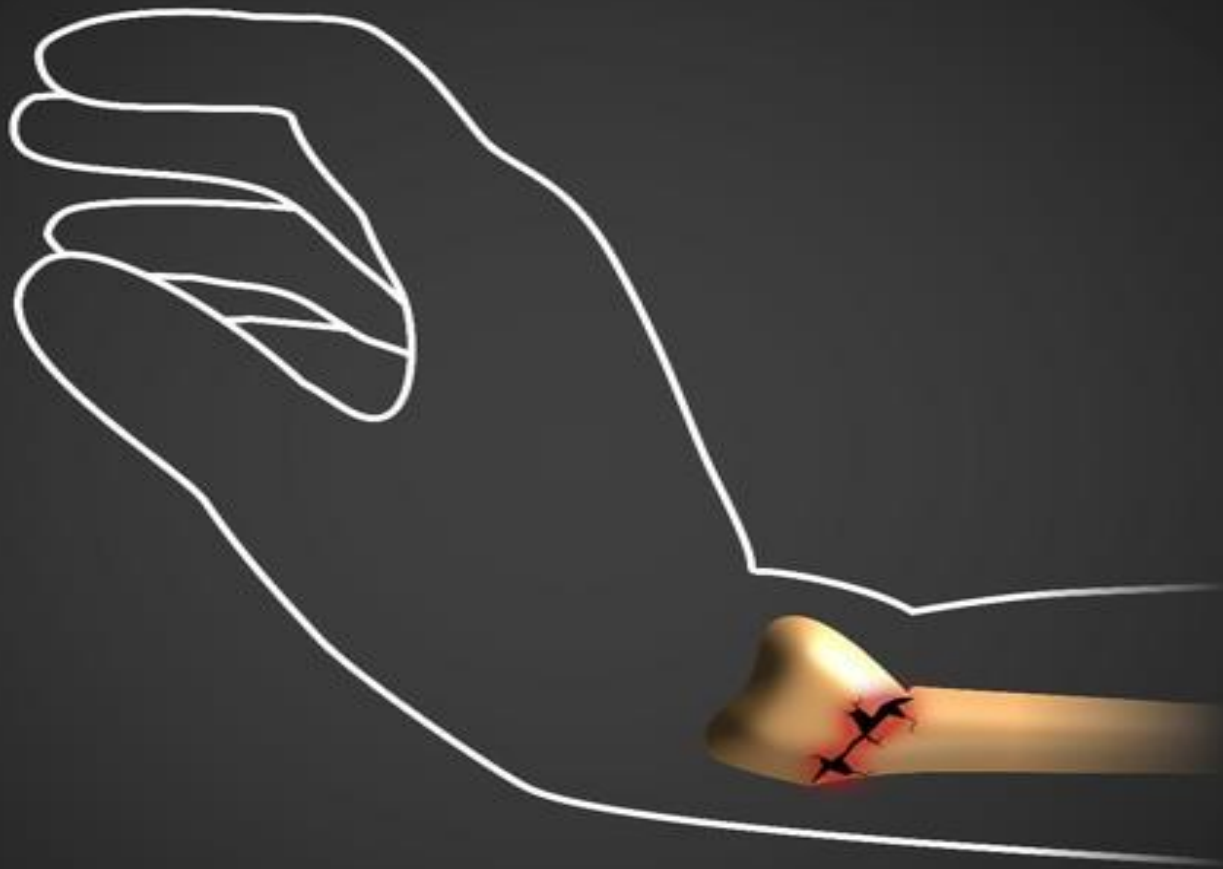
http://ptjournal.apta.org/cgi/collection/injuries_and_conditions_upper_extremity

Clinical Anatomy

- Colles' fracture= radius gets fractured about 2cm above its lower end due to fall on outstretched hand.
- Smith's fracture= if distal fragments gets displaced anteriorly.



Colles fracture



Extra-articular

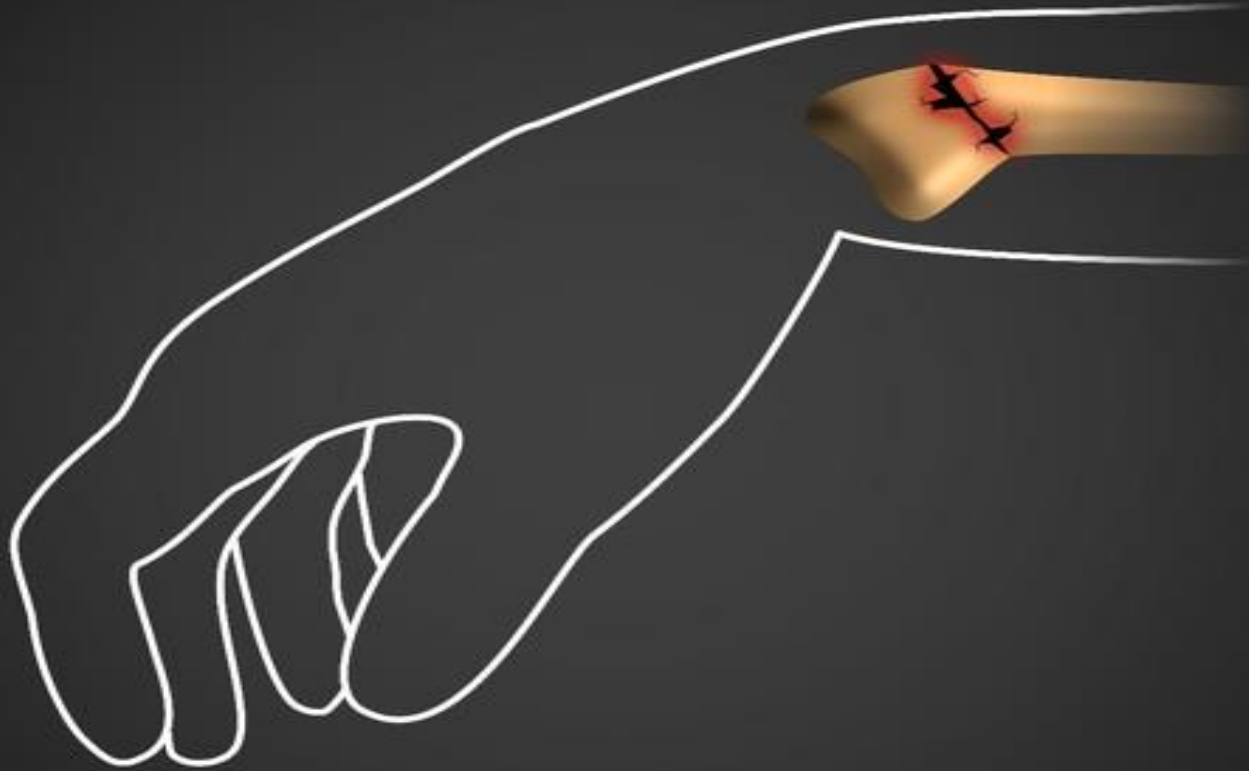
Dorsal angulation

M. Debowski



Radiopaedia

Smith fracture



Extra-articular

Volar angulation

M. Debowski



Radiopaedia

Wrist & Hand Injuries

- Carpal fractures
 - compressive loads to hyperextended wrist
 - hyper flexion
 - rotation loading against a fixed wrist
 - Scaphoid
 - 60-70%
 - Lunate

