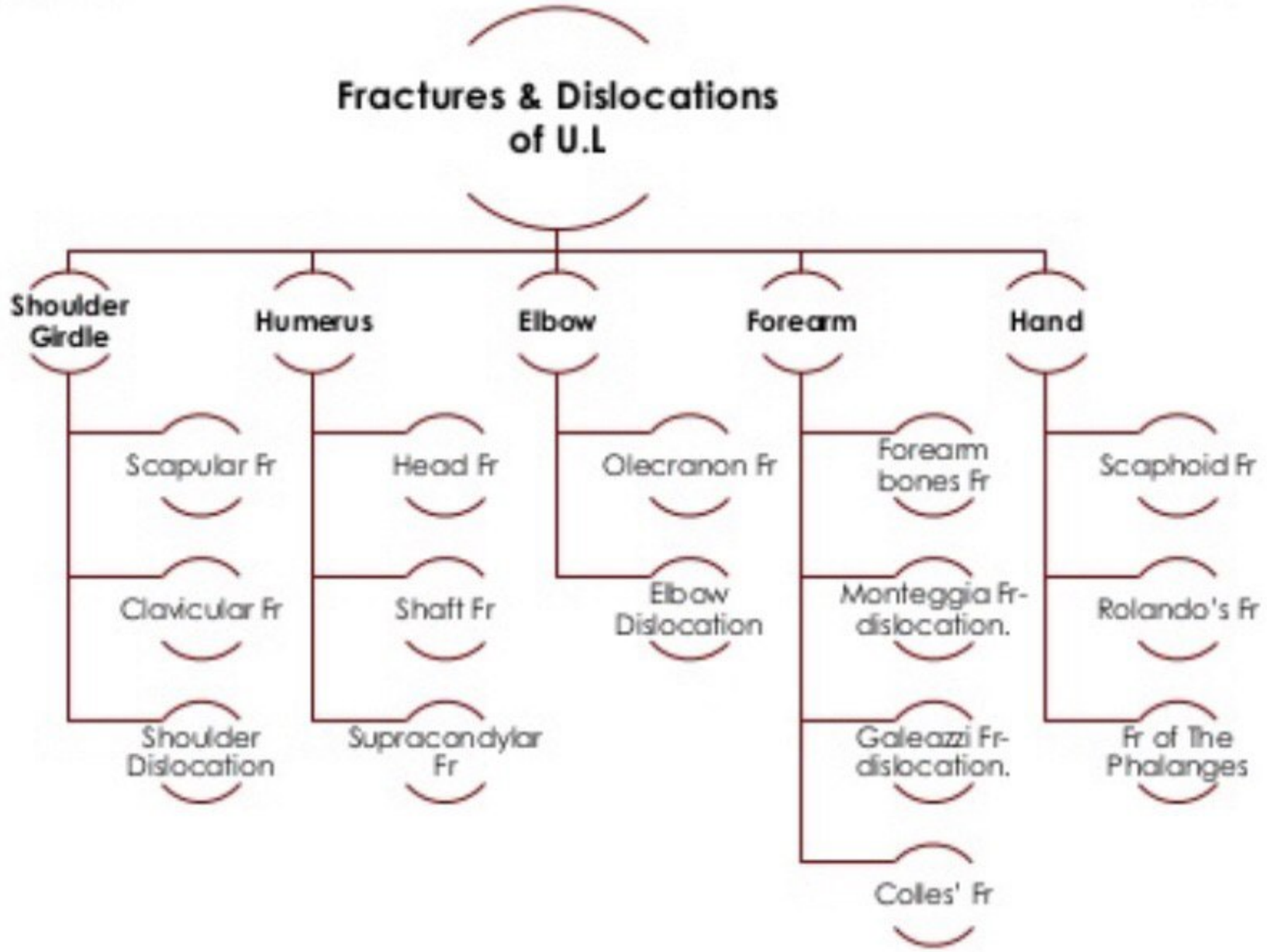
Syllabus


Fractures & Dislocations of U.L
Shoulder Girdle
Humerus
Elbow
Forearm
Hand
Scapular Fr
Clavicular Fr
Shoulder Dislocation
Head Fr
Shaft Fr
Supracondylar Fr
Olecranon Fr
Elbow Dislocation
Forearm bones Fr
Monteggia Fr-dislocation.
Galeazzi Fr-dislocation.
Colles' Fr
Scaphoid Fr
Rolando's Fr
Fr of The Phalanges

Outcomes

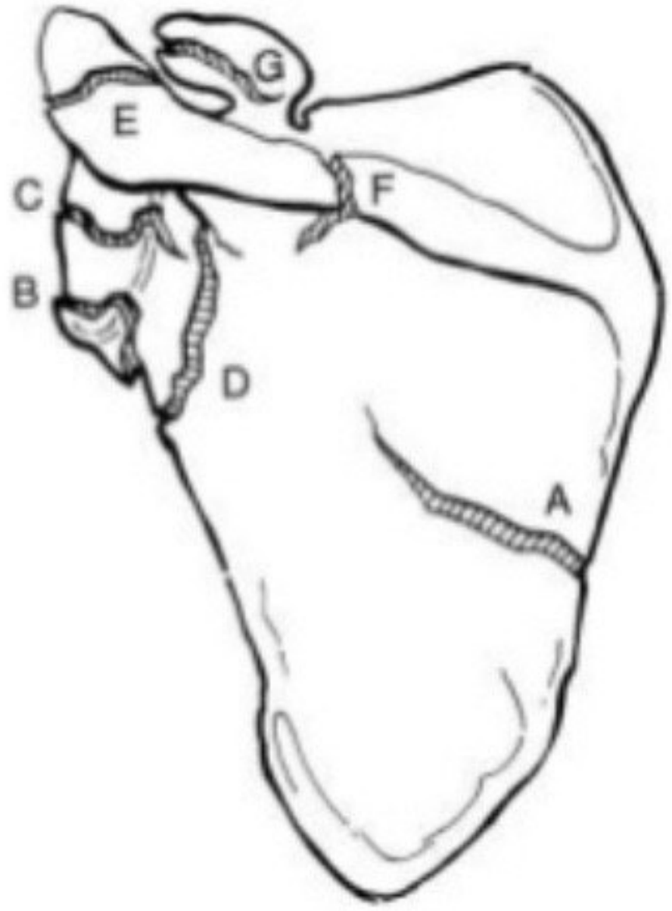
- Definition.
- Types or Classifications.
- Mechanisms of Injury.
- Clinical Features.
- Imaging Studies.
- Management.
- Complications.

Shoulder Girdles

1. Scapular Fractures.
2. Clavicular Fractures.
3. Shoulder Dislocations.

1. Scapular Fractures

- **Definition:** Is a fracture of shoulder blade, represent an uncommon injury.



- **Types:**
  - Body (A).
  - Neck (D).
    - Type I - nonangulated, nondisplaced
    - Type IIa - shortened / displaced > 1 cm.
    - Type IIb - Angulated > 40 degree.
  - Glenoid (B C).
  - Acromian (E).
  - Coracoid (G).

1. Scapular Fractures

- **Mechanisms of Injury:**
  - Direct Forces are usually caused by high-energy trauma.
- **Associated Injuries:**
  - Pulmonary contusion and pneumothorax (23%).
  - Clavicle fracture (23%).
  - Shoulder dislocation.
  - Rib fracture.

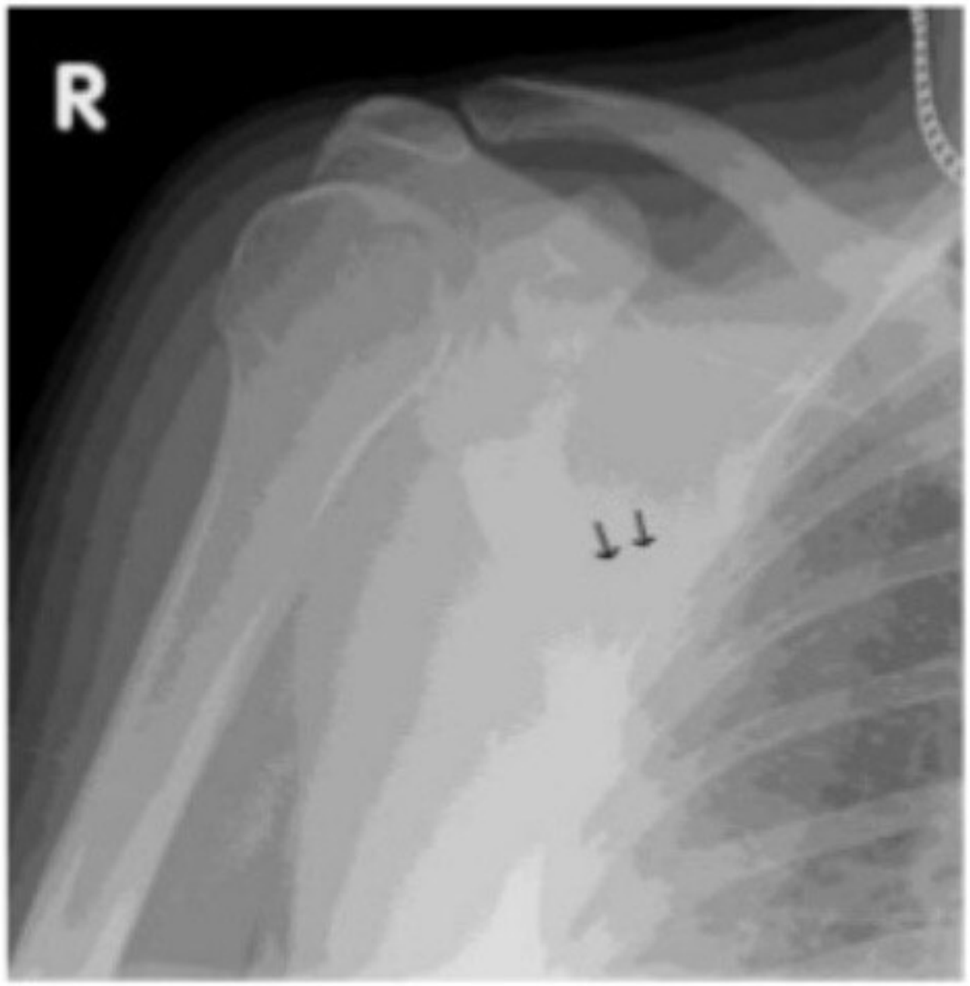
1. Scapular Fractures

- **Clinical Features:**
  - Arm is held immobile.
  - Severe bruising over the scapula or the chest.

- **Imaging Studies:**
  - True AP view.
  - True lateral view.

1. Scapular Fractures

- **Imaging Studies:**



1. Scapular Fractures

- **Managements:**
  - Conservative:
    - Body, Neck(Type1), and Acromion.
    - a simple immobilization in a sling is sufficient.
    - Pendulum exercises.
    - Heal without any problem in about 6 weeks.

1. Scapular Fractures.

- **Managements:**
  - Operative:
    - Neck (Type IIa and IIb), and Glenoid.

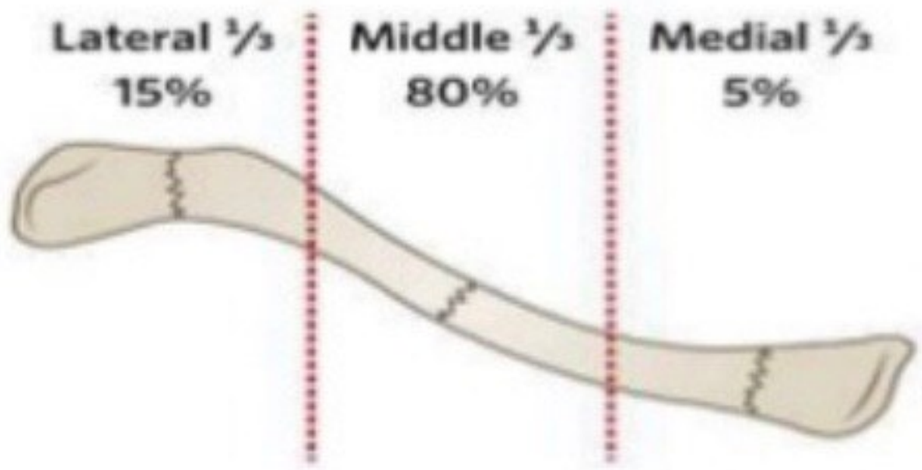
1. Scapular Fractures.

- **Complications:**
  - Early:
    - Neurovascular Injuries.
  - Late:
    - Osteoarthritis (posttraumatic arthritis).
    - Bursitis.

2. Clavicular Fractures

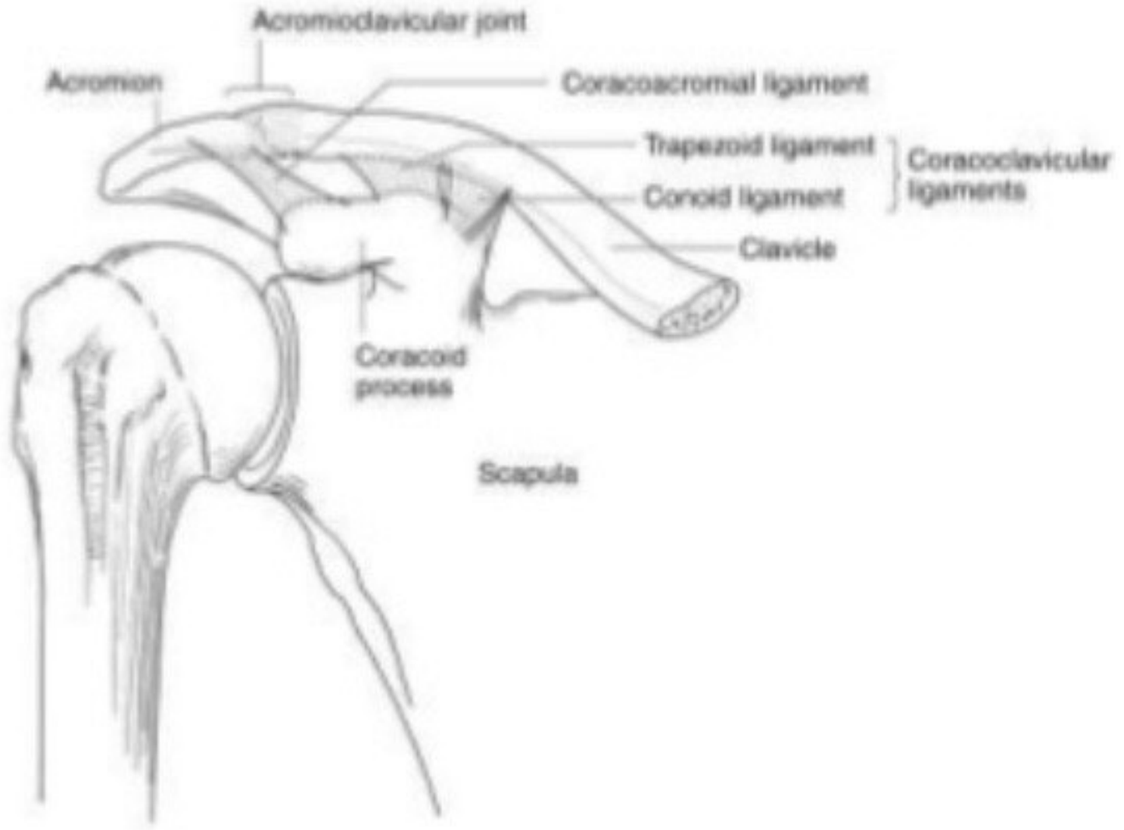
- **Definition:** common fracture at all age groups.

- **Classification:**
  - 80% occur in the middle 1/3 (Class A).
  - 15% occur in the lateral or distal 1/3 (Class B).
  - 5% occur in the medial or proximal 1/3 (Class C).



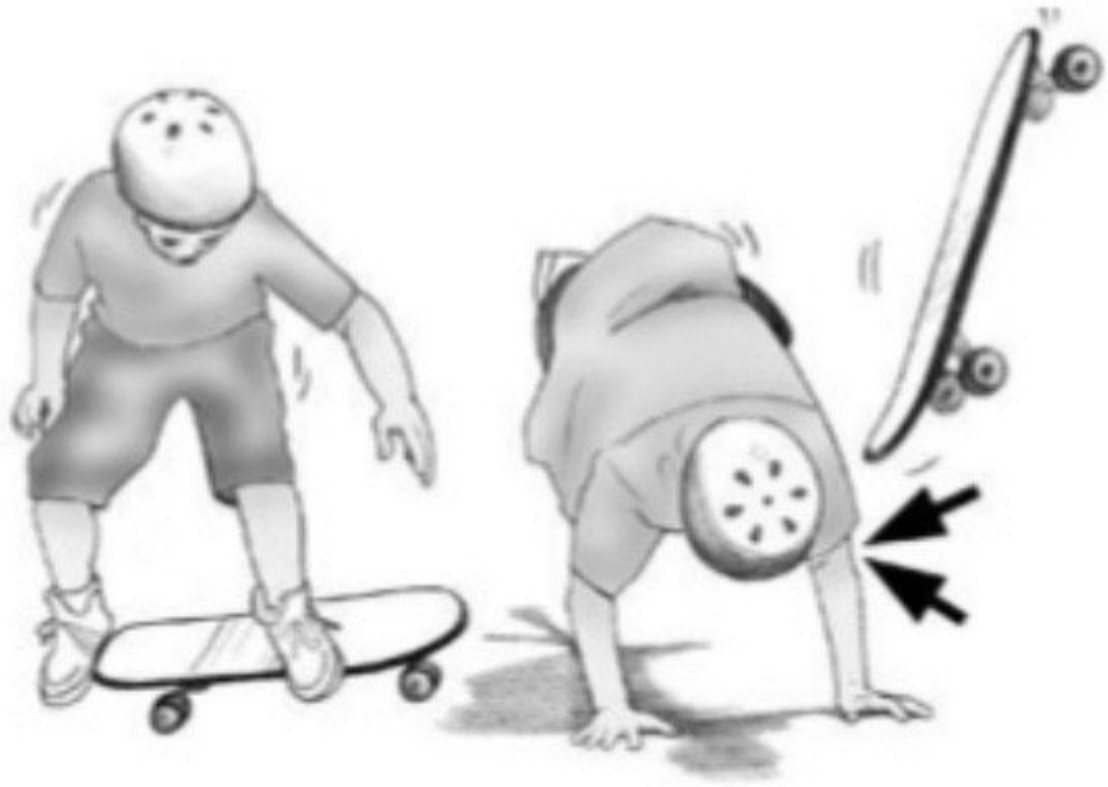
2. Clavicular Fractures

- **Classification:** Class B is further subdivided into two subgroups:
  - Type I: Coracoclavicular ligament intact.
  - Type II: Coracoclavicular ligament ruptured.



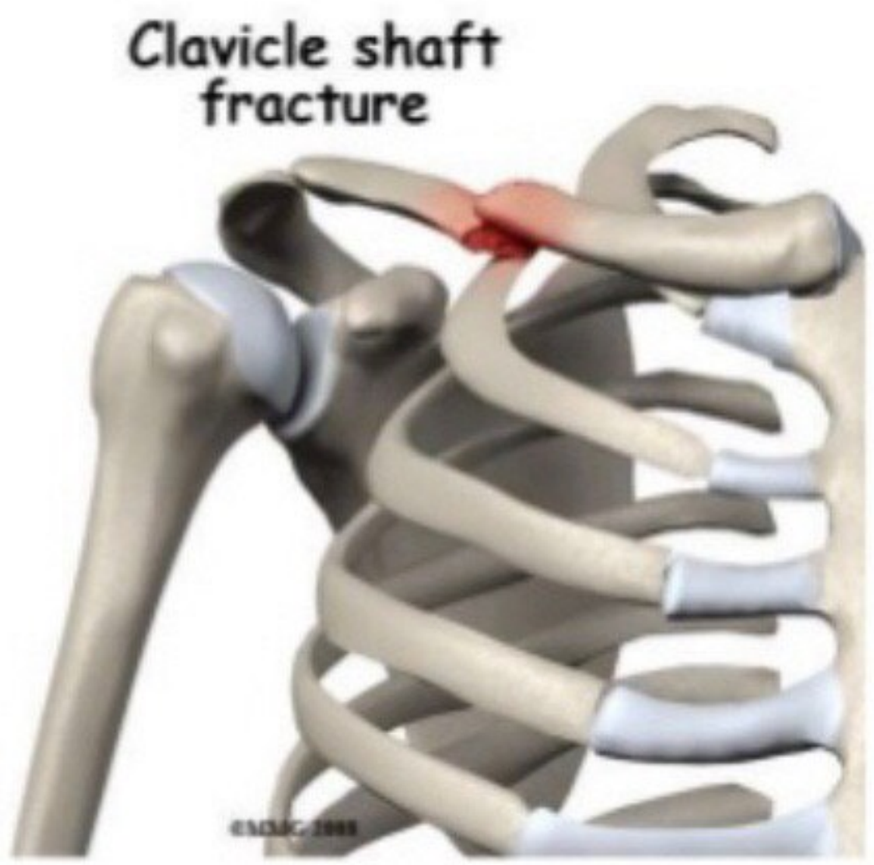
2. Clavicular Fractures

- **Mechanisms of Injury:**
  - Fall on an outstretched hand.
  - Fall on the point of a shoulder.
  - Blow on the clavicle.
  - Birth trauma.



2. Clavicular Fractures

- **Clinical Features:**
  - History of trauma followed by pain, swelling, and crepitus.
  - Inability to raise the shoulder.
  - The outer fragment displaces medially and downwards.
  - The inner fragment displaces upwards.



2. Clavicular Fractures

- **Imaging Studies:**
  - Routine AP view of the clavicle.
  - Lordotic view if the fracture is doubtful.

2. Clavicular Fractures

- **Management:**
  - Conservative:
    - Accurate reduction is neither possible nor essential.
    - Need to support the arm in a sling.
    - Fig of '8': this is popularly used.
    - Encourage shoulder exercise after severe pain subsides.

2. Clavicular Fractures

- **Management:**
  - Operative:
    - Class B II due to rupture of coracoclavicular ligament.
    - Neurovascular deficit.
    - Nonunion.
    - Cosmetic.

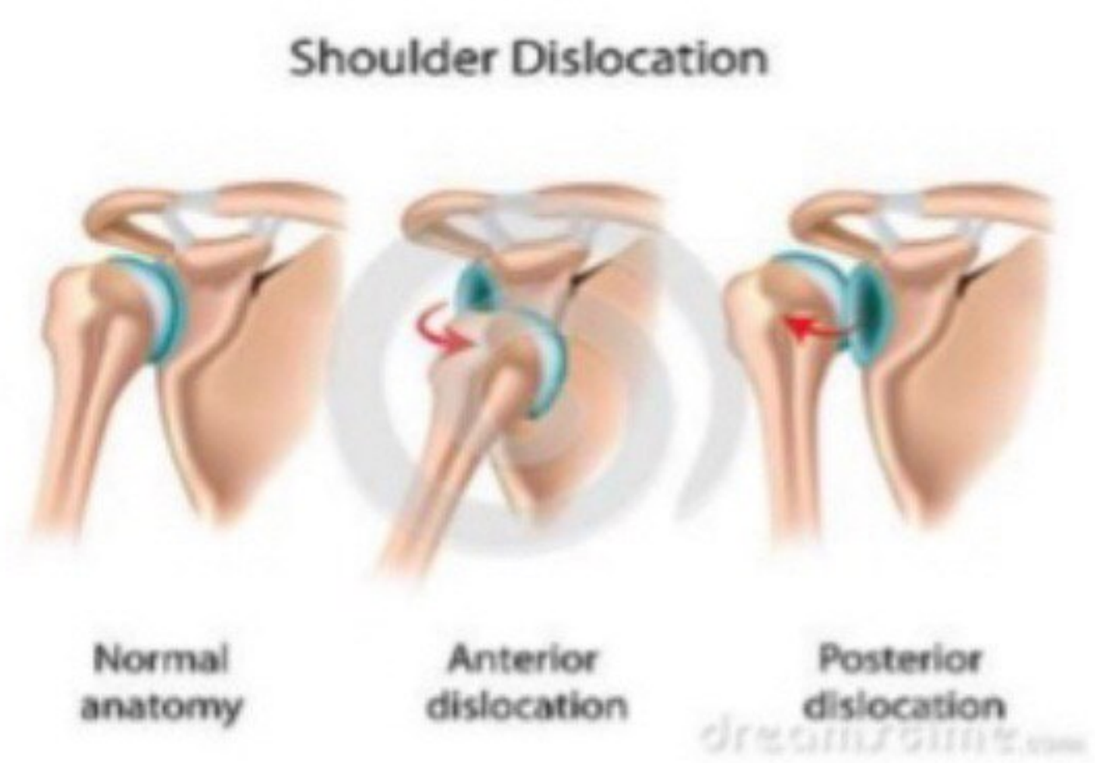
2. Clavicular Fractures

- **Complications:**
  - Early:
    - Life threatening: hemothorax, or pneumothorax
    - limb threatening: injury to subclavian vessels, and injury to brachial plexus.
  - Late:
    - Delayed union and nonunion.
    - Malunion generally left done.

3. Shoulder Dislocations

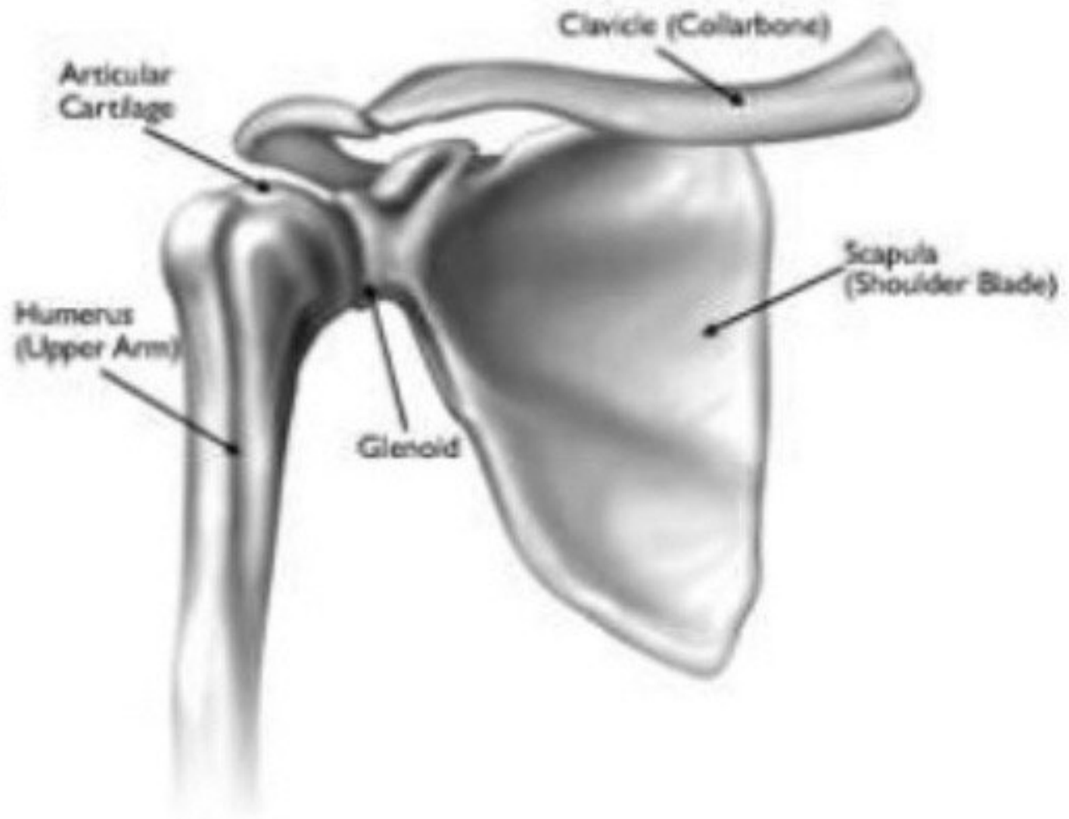
- **Definition:** head of humerus loses its articulation with the glenoid cavity of the scapula.

- **Classification:**
  - Anterior dislocation (98%)
  - Posterior dislocation (2%)
  - Inferior dislocation *(Luxatio erecta)* (very rare)



3. Shoulder Dislocations

- **Mechanisms of Injury:**
  - Anterior dislocation:
    - Direct blow from the posterior aspect of the shoulder.
    - Abduction + External rotation + Extension injury.
  - Posterior dislocation:
    - Direct blow from the anterior aspect of the shoulder.
    - Internal rotation + Adduction + Flexion injury.



3. Shoulder Dislocations

- **Mechanisms of Injury:**

3. Shoulder Dislocations

- **Clinical Features:**

	Anterior Dislocation	Posterior Dislocation
Pain	+++	+++
Arm Position	Abducted and external rotation.	Abducted and internal rotation.
Range of Motion	Adduction is restricted	Abduction is restricted
Normal Shoulder Contour	Lost	Lost
Test	Dugas' test: Inability to touch the opposite shoulder.	

3. Shoulder Dislocations

- **Clinical Features:**

3. Shoulder Dislocations

- **Imaging Studies:**
  - X-ray AP view of the shoulder to know the types of dislocation.
  - Checking the presence or absence of fracture.

3. Shoulder Dislocations

- **Imaging Studies:**

3. Shoulder Dislocations

- **Management:**
  - Conservative:

	Anterior Dislocation	Posterior Dislocation
Technique of reduction	Kochers method: I. Traction with the elbow flexed. II. External rotation. III. Adduction. IV. Internal rotation.	• Distal traction on the injured limb with External rotation on the upper arm.

3. Shoulder Dislocations

- **Management:**
  - Operative:
    - Failed closed reduction.
    - Soft tissue interposition.
    - Greater tuberosity fracture displaced > 1 cm.

3. Shoulder Dislocations

- **Complications:**

	Anterior Dislocation	Posterior Dislocation
Early	Axillary nerve damage	
		Unreduced dislocation
Late		Recurrent dislocation. Traumatic osteoarthritis. Shoulder stiffness

Humerus

1. Humeral Head Fracture.
2. Humeral Shaft Fracture.
3. Supracondylar Fracture.

1. Humeral Head Fracture

- **Definition:** common in elderly patients and it accounts for 4 to 5 cent of all fractures.

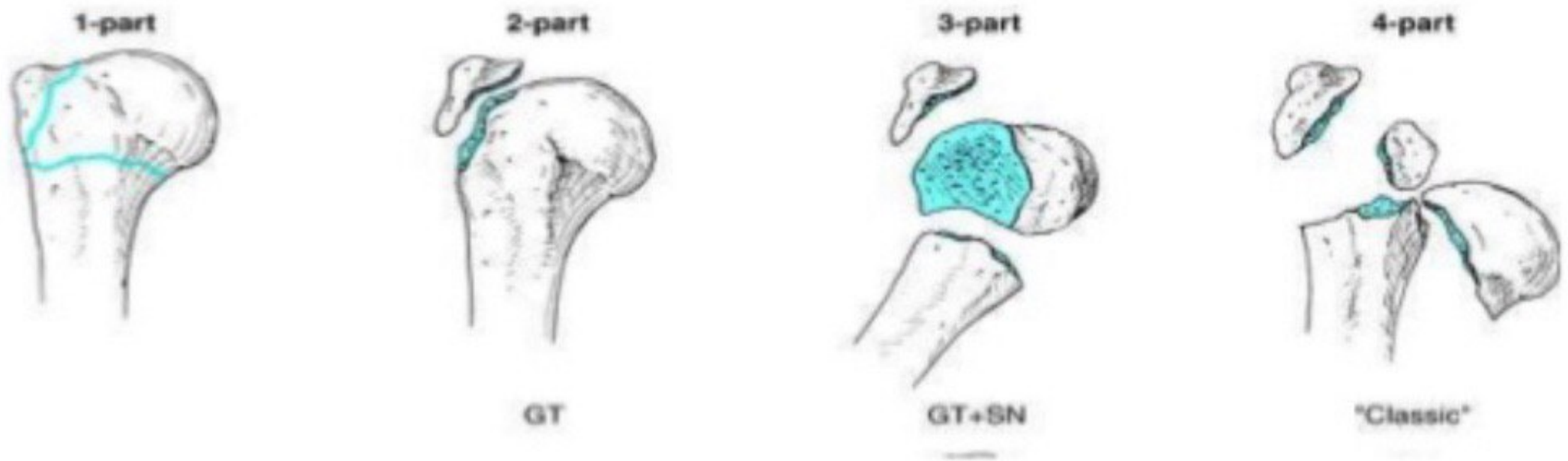
- **Classification:** *According to Neer's classification*
  - This system of classification includes four segments
    - The head of the humerus.
    - The greater tuberosity.
    - The lesser tuberosity.
    - The shaft of the humerus.

1. Humeral Head Fracture

- **Classification:**
  - Distinguishes between the number of displaced fragments.
  - Displacement defined as greater than 45° of angulation or 1 cm of separation.

1. Humeral Head Fracture

- **Classification**
  - Undisplaced fragments : one-part fracture.
  - Displaced one segment : two-part fracture.
  - Displaced two fragments : three-part fracture.
  - Displaced all the major parts : four-part fracture.



1. Humeral Head Fracture

- **Classification:**
  - Muscle forces action:
    - The supraspinatus and the infraspinatus pull the greater tuberosity superiorly.
    - The subscapularis pulls the lesser tuberosity medially.
    - The pectoralis major adduct the shaft medially.

1. Humeral Head Fracture

- **Mechanisms of Injury:**
  - Fall on an outstretched hand (FOSH)

1. Humeral Head Fracture

- **Clinical Features:**
  - Pain and loss of function following trauma.
  - Swelling are the most common symptoms on initial presentation.
  - paresthesias or weakness (*Axillary or brachial plexus injury*)

1. Humeral Head Fracture

- **Imaging Studies:**
  - AP and lateral view of shoulder joint in scapular plane
  - The axillary view can be obtained with the use of the Velpeau view.

1. Humeral Head Fracture

- **Imaging Studies:**

1. Humeral Head Fracture

- **Imaging Studies:**

1. Humeral Head Fracture

- **Management:**
  - Conservative:
    - Undisplaced fracture.
    - Immobilized in plaster slab.
    - Encourage active exercise after 1 - 2 weeks.
    - Healing usually after 6 weeks.

1. Humeral Head Fracture

- **Management:**
  - Operative:
    - Displaced fractures.
    - Open reduction and internal fixation (ORIF).
    - Prosthetic replacement of the proximal humerus. (*4 part fractures especially in middle aged and elderly*)

1. Humeral Head Fracture

- **Complications:**
  - Early:
    - Neurovascular injury: axillary nerve is at particular risk both from the injury and from the surgery.
  - Late:
    - Malunion.
    - Stiffness.
    - Avascular necrosis (AVN): 10% of three-part fractures and 20% of four-part fractures

2. Humeral Shaft Fracture

- **Definition:** known as diaphyseal fracture of the humerus, and common at any age.

- **Types:**
  - Transverse.
  - Oblique.
  - Spiral.
  - Comminuted.
  - Segmental.

2. Humeral Shaft Fracture

- **Mechanisms of Injury:**
  - Indirect mechanism: fall on an outstretched hand (FOSH).
  - Direct mechanism: a blow on to the arm.
  - Birth injuries: second most common birth fracture after clavicle.

2. Humeral Shaft Fracture

- **Clinical Features:**
  - The arm is painful, bruised, and swollen.
  - Radial nerve injury could be present.
  - Important to test for radial nerve function.

2. Humeral Shaft Fracture

- **Pathological Anatomy:**
  - Fractures above the deltoid insertion, the proximal fragment is adducted by pectoralis major.
  - Fractures below the deltoid insertion, the proximal fragment is abducted by deltoid.

2. Humeral Shaft Fracture

- **Imaging Studies:**
  - X-ray of the entire upper arm including both the shoulder joint above and the elbow joint below.

2. Humeral Shaft Fracture

- **Management:**
  - Conservative:
    - Closed reduction and maintenance in a 'U' slab or cast.
    - Or maintaining the fracture reduction in a 'Hanging Cast'.
    - The wrist and fingers are exercised from the start.

2. Humeral Shaft Fracture

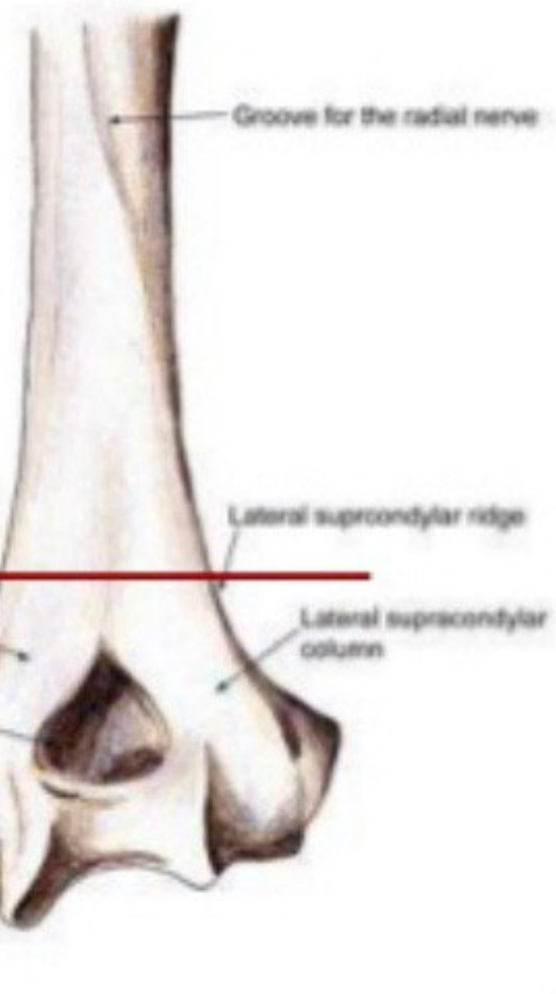
- **Management:**
  - Operative: Indications
    - Noncompliance.
    - Failure of closed reduction.
    - Displaced, comminuted, or segmental fracture.
    - Open fracture.
    - Fracture associated with neurovascular injury.
    - Fracture with intra-articular extension.
  - Implants:
    - Plates and screws.
    - Intramedullary nails
    - External fixators are used in open fractures.

2. Humeral Shaft Fracture

- **Complications:**
  - Early:
    - Brachial artery damage.
    - Radial nerve palsy.
  - Late:
    - Delayed union and non-union.
    - Joint stiffness.
    - Malunion.

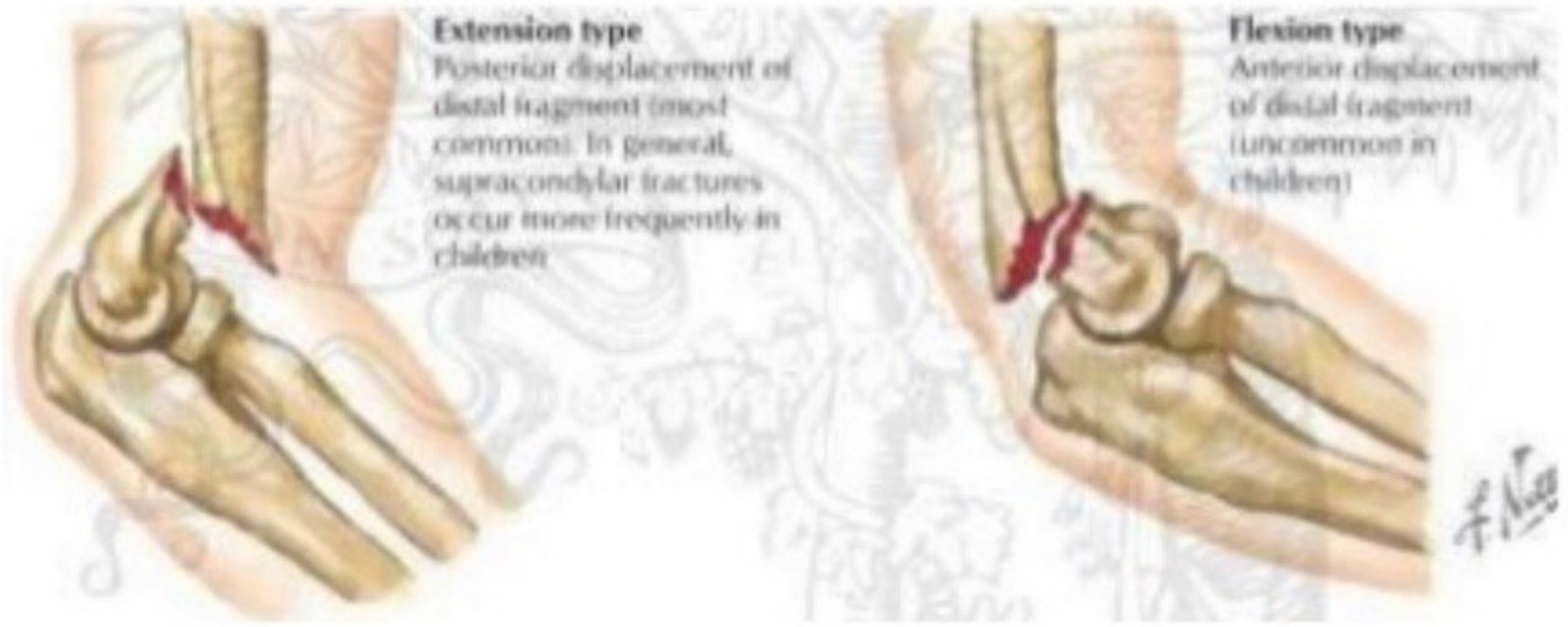
3. Supracondylar Fracture

- **Definition:**
  - occurs just above the two condyles of the lower humerus, commonly seen in children between the age of 5-10 years.



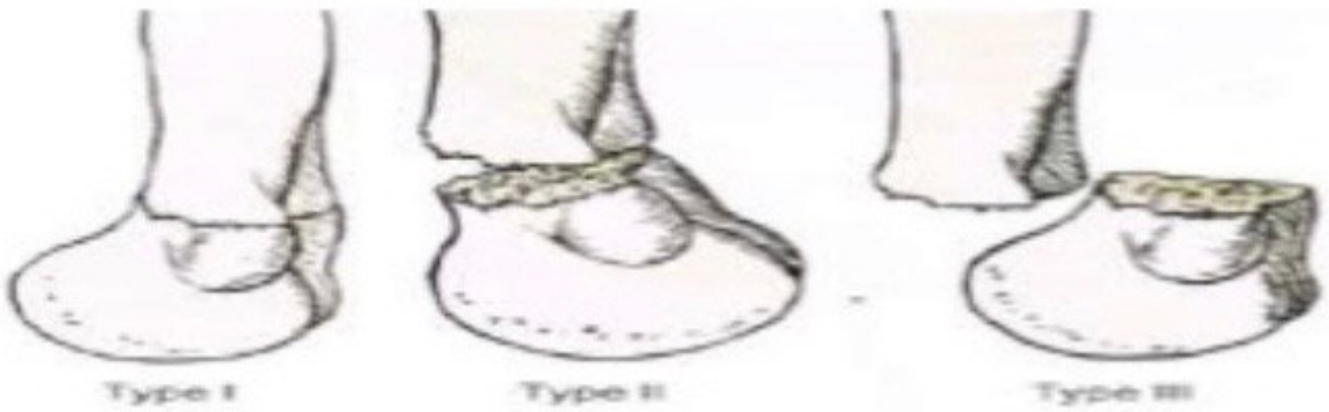
3. Supracondylar Fracture

- **Types:**
  - Posterior angulation or displacement (Extension Type) 95%.
  - Anterior angulation or displacement (Flexion Type). 5%



3. Supracondylar Fracture

- **Classification:** *Gartland's*
  - Type I: Undisplaced fracture.
  - Type II: Angulated fracture with the posterior cortex still in continuity.
  - Type III: Completely displaced fracture.



3. Supracondylar Fracture

- **Mechanisms of Injury:**
  - Posterior Type:
    - Fall on an outstretched hand with hyperextension injury.
  - Anterior Type:
    - Due to direct violence with the elbow in flexion.

3. Supracondylar Fracture

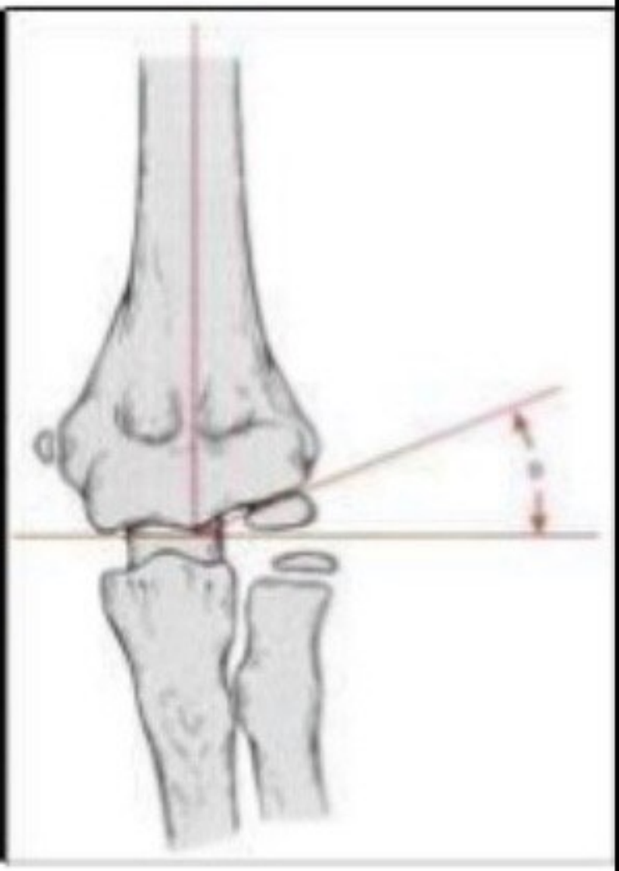
- **Clinical Features:**
  - Pain and swollen elbow.
  - S – deformity of the elbow is usually obvious and the bony landmarks are abnormal.
  - Dimple sign due to one of the spikes of proximal fragment penetrating the muscle and tethering the skin.
  - Arm is short.

3. Supracondylar Fracture

- **Imaging Studies:**
  - AP and lateral view of the elbow.
  - Extremely important not only to diagnose the fracture but also to check for adequacy of reduction.
  - AP view measurements:
    - *Baumann's angle.*
  - Lateral view measurements and signs:
    - *Tear drop sign (Fad Pad Sign).*
    - *Anterior humeral line.*

3. Supracondylar Fracture

- **Imaging Studies:**
  - *Baumann's angle:*
    - Benefit:
      - to assess the accuracy of distal fragment reduction.
    - How to measure it ??
      - Line on the longitudinal axis of humeral shaft and a line through the coronal axis of the capitellar physis.
    - Interpretation:
      - Normally 90°.
      - < 90° suggests cubitus valgus.
      - > 90° suggests cubitus varus.



3. Supracondylar Fracture

- **Imaging Studies:**
  - *Tear drop sign (Fat Pad Sign):*
    - *Fat pad being pushed forward by a hematoma.*

3. Supracondylar Fracture

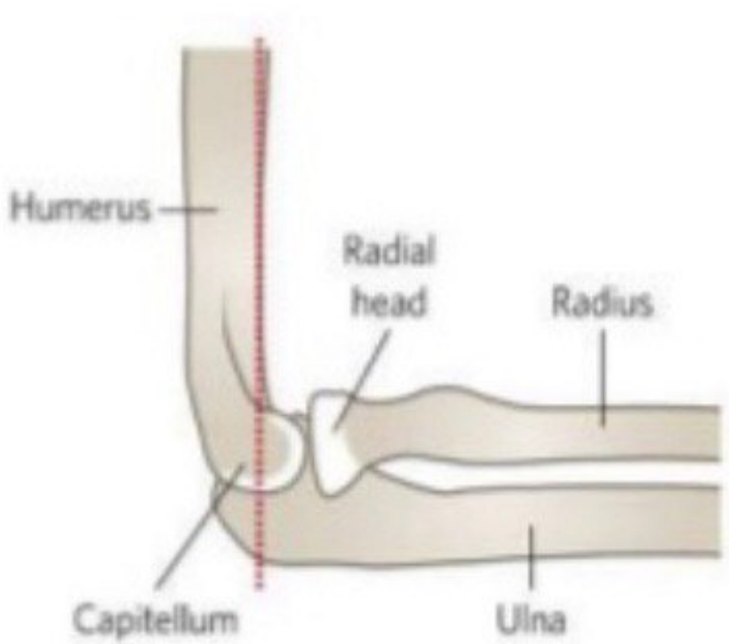
- **Imaging Studies:**
  - *Tear drop sign (Fat Pad Sign):*

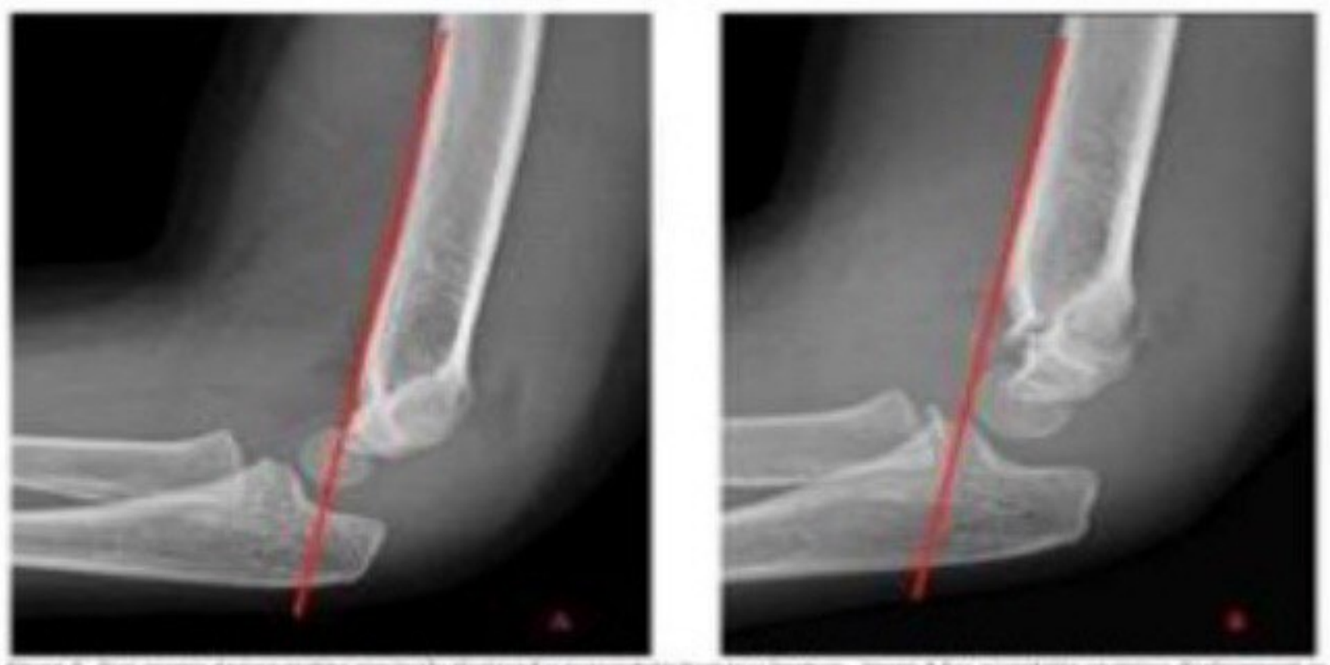
3. Supracondylar Fracture

- **Imaging Studies:**
  - Anterior humeral line:
    - Benefit:
      - To assess the displacement of distal fragment.
  - How to measure it ??
    - A line drawn along the anterior border of the distal humeral shaft.
  - Interpretation:
    - Normally, passing through the middle 1/3 of capitulum.
    - Passing through anterior 1/3 it indicates posterior displacement of distal fragment.

3. Supracondylar Fracture

- **Imaging Studies:**
  - Anterior humeral line:





3. Supracondylar Fracture

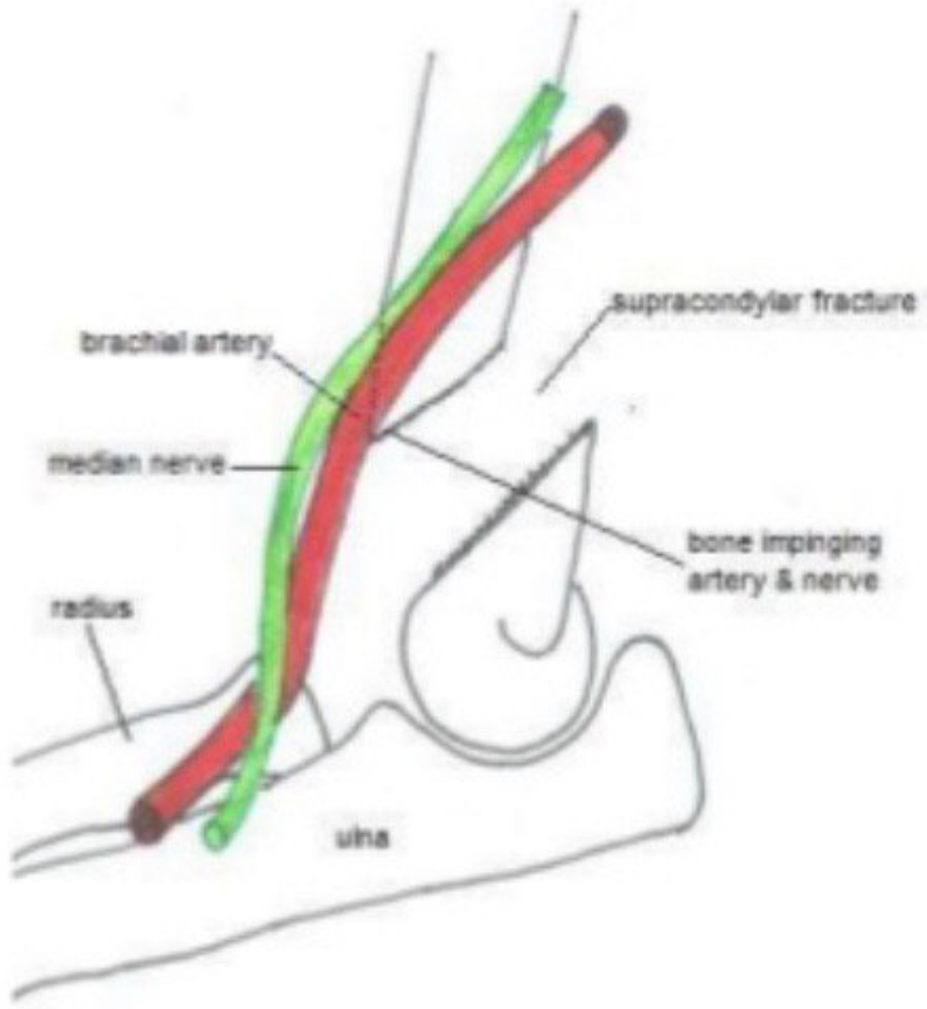
- **Management:**
  - Conservative:
    - Closed reduction under general anesthesia by traction and counter traction methods.
    - The medial and lateral tilt is corrected first and posterior displacement next.
    - The elbow is immobilized in hyperflexion.
    - The forearm is pronated.
    - Check radiograph is taken and all the angels.

3. Supracondylar Fracture

- **Management:**
  - Operative:
    - Open reduction and internal fixation (ORIF).
    - Closed reduction failed.
    - Complicated fracture.
    - Comminuted fracture.

3. Supracondylar Fracture

- **Complications:**
  - Early:
    - Neurovascular injuries:
      - Median nerve 32%.
      - Ulnar nerve 23%.
      - Brachial artery <1%.
  - Late:
    - Malunion.
      - Varus > valgus.
    - Elbow stiffness.

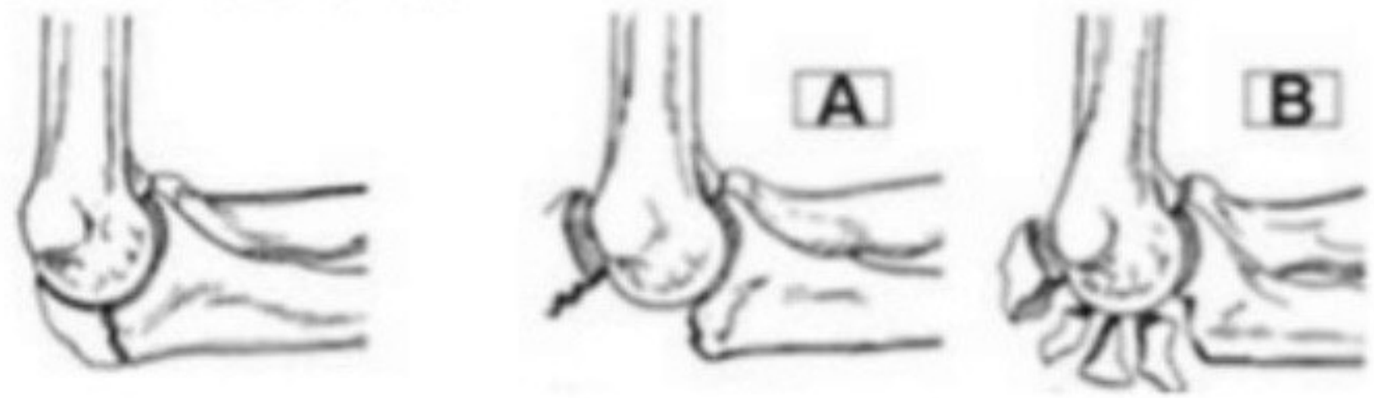


Elbow

1. Olecranon Fracture.
2. Elbow Dislocation.

1. Olecranon Fracture

- **Definition:** This is usually seen in adults.
- **Types:**
  - Clean transverse fracture.
    - Undisplaced.
    - Displaced.
  - Comminuted fracture.



1. Olecranon Fracture

- **Mechanisms of Injury:**
  - Direct:
    - Trauma due to fall on the point of elbow.
  - Indirect:
    - Due to fall on a semiflexed elbow with forcible triceps contraction (Avulsion Fracture).

1. Olecranon Fracture

- **Clinical Features:**
  - Pain, swelling, and bruising over the elbow.
  - With transverse fracture there may be a palpable gap and the patient unable to extend the elbow.

1. Olecranon Fracture

- **Imaging Studies:**
  - Routine AP and lateral views of the elbow.
  - The position of radial head should be checked; it may be dislocated.

1. Olecranon Fracture

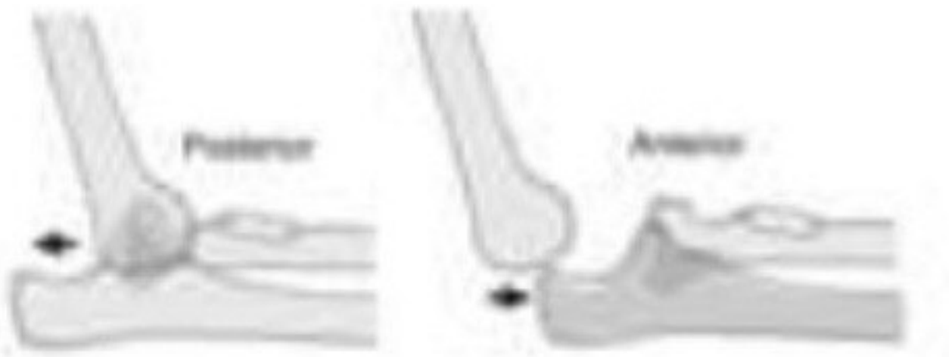
- **Management:**
  - Conservative:
    - Undisplaced transverse that doesn't separate when the elbow is x-rayed in flexion.
  - Operative:
    - Displaced transverse fracture:
      - Open reduction and internal fixation using the technique of tension bandwiring.
    - Comminuted fracture:
      - Fixation using plates and screws.

1. Olecranon Fracture

- **Complications:**
  - Early:
    - Nonunion: occurs after inadequate reduction and fixation.
  - Late:
    - Stiffness: used to be common.
    - Osteoarthritis: especially if reduction is less than perfect.

2. Elbow Dislocation

- **Definition:** Is fairly common in adults than in children, rare in children below 10 years of age.
- **Types:** According to the direction.
  - Posteriorly (90%)
  - Anteriorly (10%)



2. Elbow Dislocation

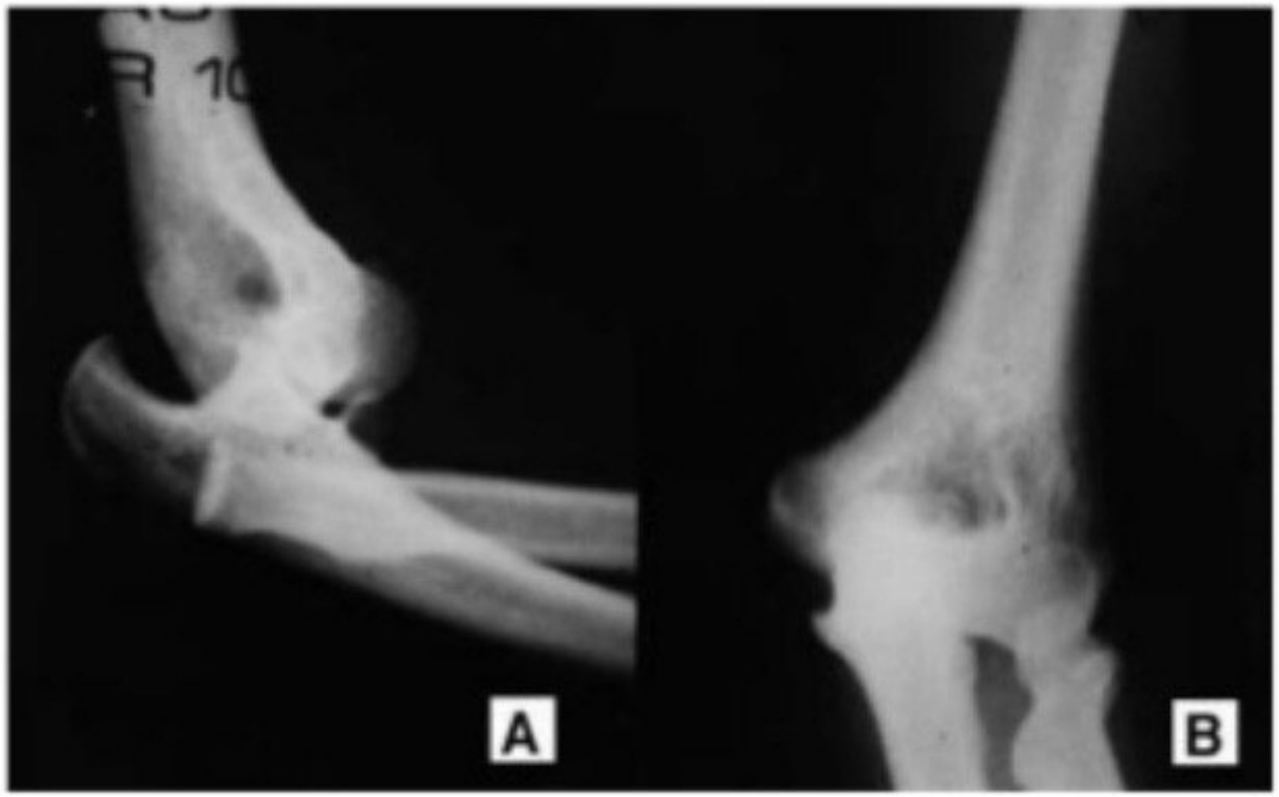
- **Mechanisms of Injury:**
  - Posterior:
    - Fall on an outstretched hand with arm in abducted and extension.
  - Anterior:
    - A powerful blow to the posterior aspect of the elbow.

2. Elbow Dislocation

- **Clinical Features:**
  - The patient supports his or her forearm with the elbow in slight flexion.
  - The bony landmarks may be palpable and abnormally.
  - Shortening of the forearm.

2. Elbow Dislocation

- **Imaging Studies:**
  - AP view of distal humerus with proximal ulna and olecranon is essential.
  - Lateral view coronoid process.



2. Elbow Dislocation

- **Management:**
  - Conservative:
    - Closed manipulation under anesthesia by Stimson's principles.
    - Immobilization for a period of three weeks.
    - Followed by gradual mobilization
    - Posterior dislocations are immobilized in flexion.
    - Anterior dislocations are immobilized in extension.

2. Elbow Dislocation

- **Management:**
  - Operative:
    - Complex dislocations are managed by open reduction and stabilization.
    - Associated fractures.

2. Elbow Dislocation

- **Complications:**
  - Early:
    - Brachial artery injury.
    - The median or ulnar nerve injury.
  - Late:
    - Stiffness: loss of 20° to 30° of extension.
    - Heterotopic ossification (Myositis Ossificans).
    - Recurrent dislocation: rare

Forearm

1. Fractures of The Forearm Bones.
2. Monteggia Fracture-Dislocation.
3. Galeazzi Fracture-Dislocation.
4. Colles' Fracture.

1. Fr of The Forearm Bones

- **Definition:** The radius and ulna are commonly fractured together – termed fracture of *'both bones of the forearm'*
- **Types:**
  - Proximal 1/3 fractures.
  - Middle 1/3 fractures.
  - Lower 1/3 fractures.

1. Fr of The Forearm Bones

- **Mechanisms of Injury:**
  - Fall on an outstretched hand with forearm pronated.
  - Direct blow onto the forearm.

1. Fr of The Forearm Bones

- **Clinical Features:**

	Proximal 1/3 Fr	Middle and Lower 1/3 Fr
Site	• Above the insertion of pronator teres.	• Below the insertion of pronator teres.
Displacement	• The proximal fragment is supinated. • The distal fragment is pronated.	• The proximal fragment is in midprone position. • The distal fragment is pronated.
Deforming Forces	• Supinated by the action of biceps brachii • Pronated by the action of pronator teres and pronator quadratus.	• Midprone position because the action of biceps brachii and pronator teres balance.

1. Fr of The Forearm Bones

- **Imaging Studies:**
  - AP and lateral view of the forearm with the entire elbow and wrist joints.

1. Fr of The Forearm Bones

- **Management:**
  - Conservative:
    - In children, closed treatment is usually successful because the tough periosteum tends to guide and then control.
    - Full length cast, from axilla to metacarpal shaft.

1. Fr of The Forearm Bones

- **Management:**
  - Operative:
    - All adults unless the fragments are in close apposition.
    - Open reduction and internal fixation.

1. Fr of The Forearm Bones

- **Complications:**
  - Early:
    - Compartment syndrome: from the fracture and operation.
    - Nerve injury: Posterior interosseous.
    - Vascular injury: radial or ulnar artery.
  - Late:
    - Delayed union and non-union.
    - Malunion.

2. Monteggia Fr-Dislocation

- **Definition:** It is fracture upper third of ulna with dislocation head of the radius.

2. Monteggia Fr-Dislocation

- **Types:**
  - According to the position of ulna and radial head.

- **Mechanisms of Injury:**
  - Fall on an out stretched hand with forced pronation.

2. Monteggia Fr-Dislocation

- **Clinical Features:**
  - The ulnar deformity is usually obvious.
  - The dislocated head of radius is masked by swelling.
  - A useful clue is pain and tenderness on the lateral side of the elbow.

2. Monteggia Fr-Dislocation

- **Imaging Studies:**
  - AP and lateral view of the elbow.

2. Monteggia Fr-Dislocation

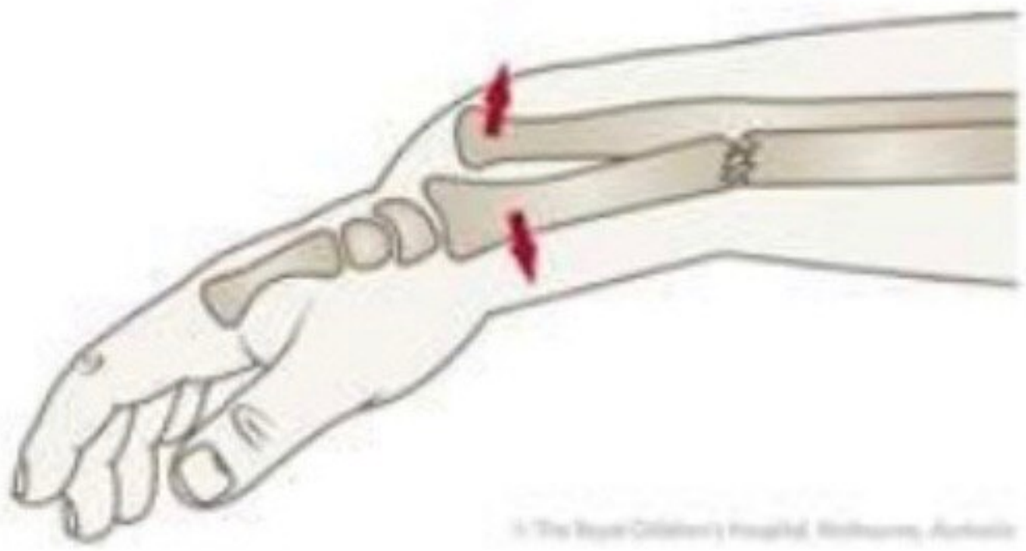
- **Management:**
  - Conservative:
    - Not preferred due to the deforming forces of the muscles.
  - Operative:
    - The aim is to restore the length of the fractured ulna.
    - Open reduction and internal fixation with plate and screws.
    - The radial head usually reduced once the the ulna has been fixed.

2. Monteggia Fr-Dislocation

- **Complications:**
  - Early:
    - Non-union.
  - Late:
    - Malunion

3. Galeazzi Fr-Dislocation

- **Definition:** This is a fracture of the lower third of the radius with associated subluxation or dislocation of the distal radioulnar joint.



3. Galeazzi Fr-Dislocation

- **Mechanisms of Injury:**
  - Fall on an outstretched hand with hyperpronated foream.

- **Clinical Features:**
  - Prominence or tenderness over the lower end of the ulna.
  - Piano key sign

3. Galeazzi Fr-Dislocation

- **Imaging Studies:**
  - AP and lateral views.
  - A transverse or short oblique fracture with angulation or overlap.

3. Galeazzi Fr-Dislocation

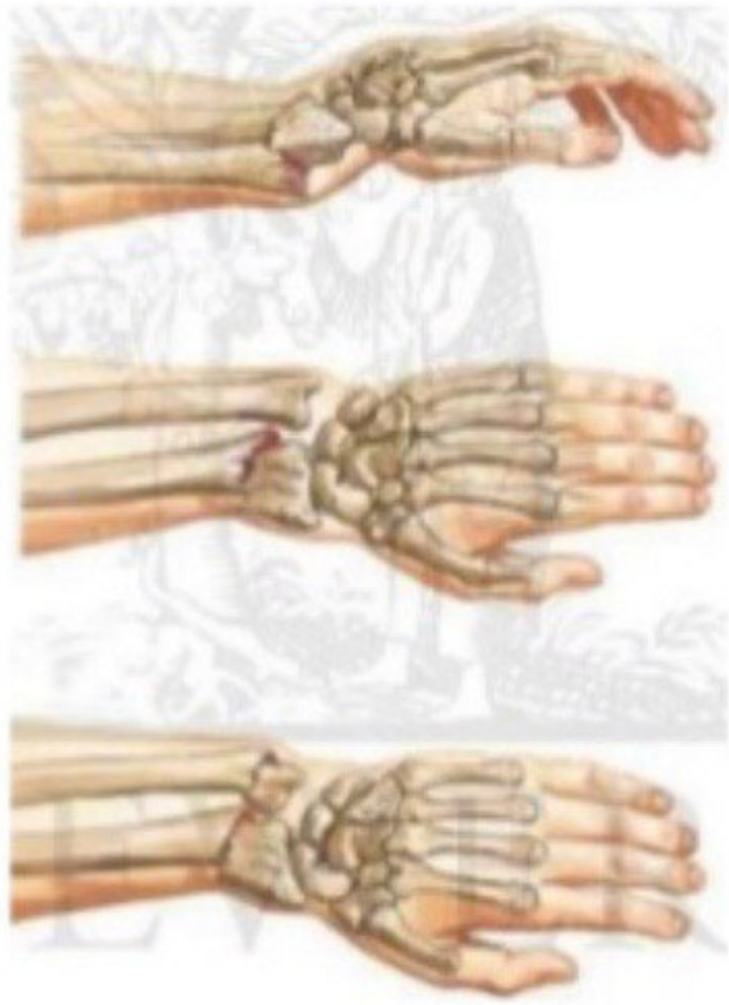
- **Management:**
  - Conservative:
    - Closed reduction is usually not successful due to the deforming forces of the muscles.
  - Operative:
    - Open reduction and internal fixation (ORIF).
    - Using long plates and screws.

3. Galeazzi Fr-Dislocation

- **Complications:**
  - Early:
    - Non-union.
  - Late:
    - Malunion.

4. Colles' Fracture

- **Definition:**
  - It is a fracture occurring approximately within an inch and half of the inferior articular surface of the radius.
  - With or without fracture of the ulnar styloid process.
  - With or without subluxation/dislocation of the inferior radioulnar joint.
  - Most common of all fractures in older people.

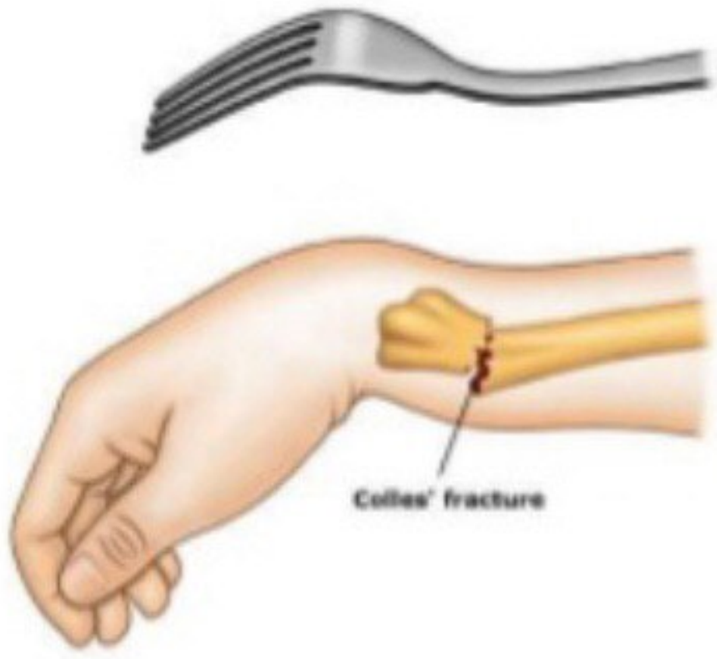


4. Colles' Fracture

- **Mechanisms of Injury:**
  - Fall on an outstretched hands with dorsiflexion of the hand.

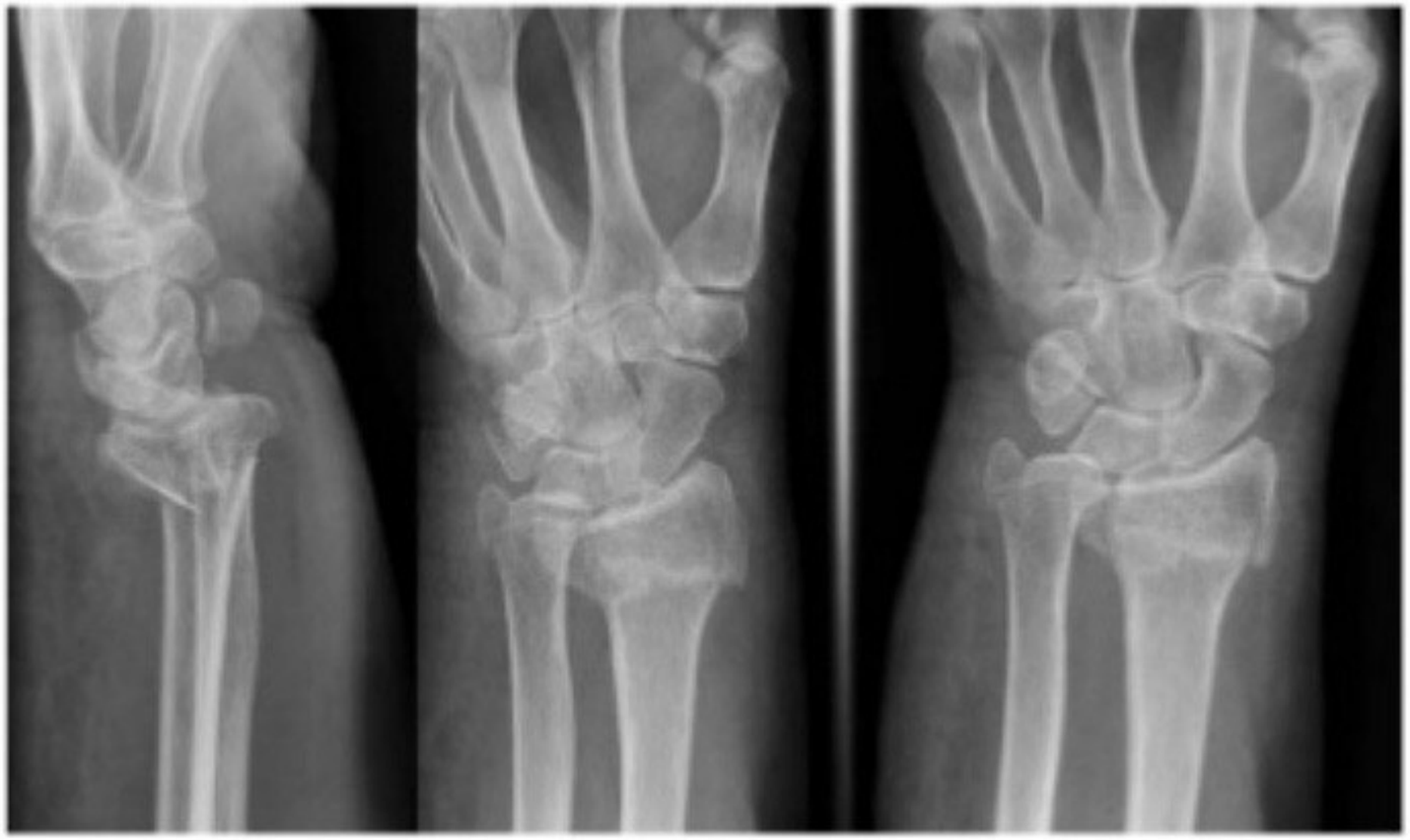
4. Colles' Fracture

- **Clinical Features:**
  - Dinner-fork deformity is a classical deformity in a Colles' fracture.



4. Colles' Fracture

- **Imaging Studies:**
  - AP and lateral views of the affected wrist and lower end of the radius.



4. Colles' Fracture

- **Management:**
  - Conservative:
    - Closed reduction under anesthesia.
    - The is applied from 4 – 6 weeks.
    - The fracture unites in about 6 weeks.

4. Colles' Fracture

- **Management:**
  - Operative:
    - Surgical intervention is rarely required.
    - Consists of percutaneous Kirschner wire fixation.

4. Colles' Fracture

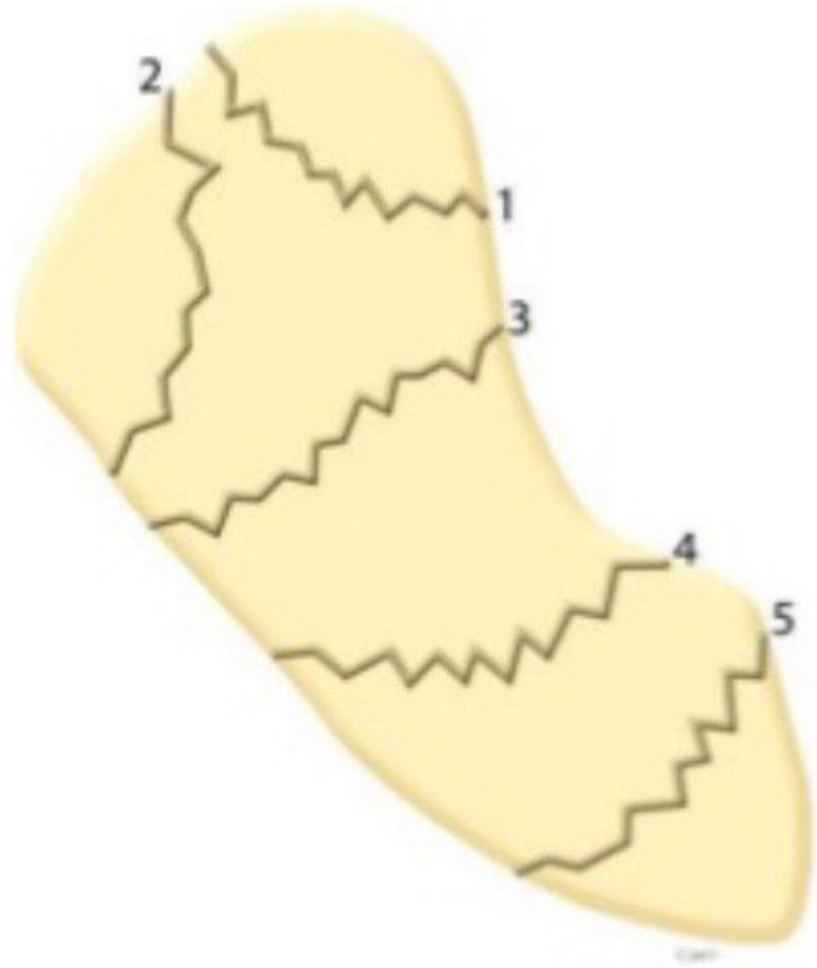
- **Complications:**
  - Early:
    - Median nerve entrapment.
    - Reflex sympathetic dystrophy: Full picture of *Sudeck's atrophy*.
  - Late:
    - Malunion: Common.
    - Tendon rupture of *extensor pollicis longus*.

Hand

1. Scaphoid Fracture.
2. Rolando's Fracture.
3. Fractures of The Phalanges.

1. Scaphoid Fracture

- **Definition:** Accounts for 60% of carpal injuries, commonly seen in young adults.



- **Types:** Based on Mayo's Classification:
  - Distal articular surface (1).
  - Tuberosity (2).
  - Distal third (3).
  - Waist (4).
  - Proximal pole (5).

1. Scaphoid Fracture

- **Mechanisms of Injury:**
  - Radial compression and dorsiflexion occurring at the wrist during a fall on an outstretched hand.

- **Clinical Features:**
  - Fullness and tenderness in the anatomical snuffbox.

1. Scaphoid Fracture

- **Imaging Studies:**
  - AP, lateral, and oblique are all essential.
  - Signs of instabilities are:
    - Displacement of the fracture fragments.
    - Motion between the two fragments.

1. Scaphoid Fracture

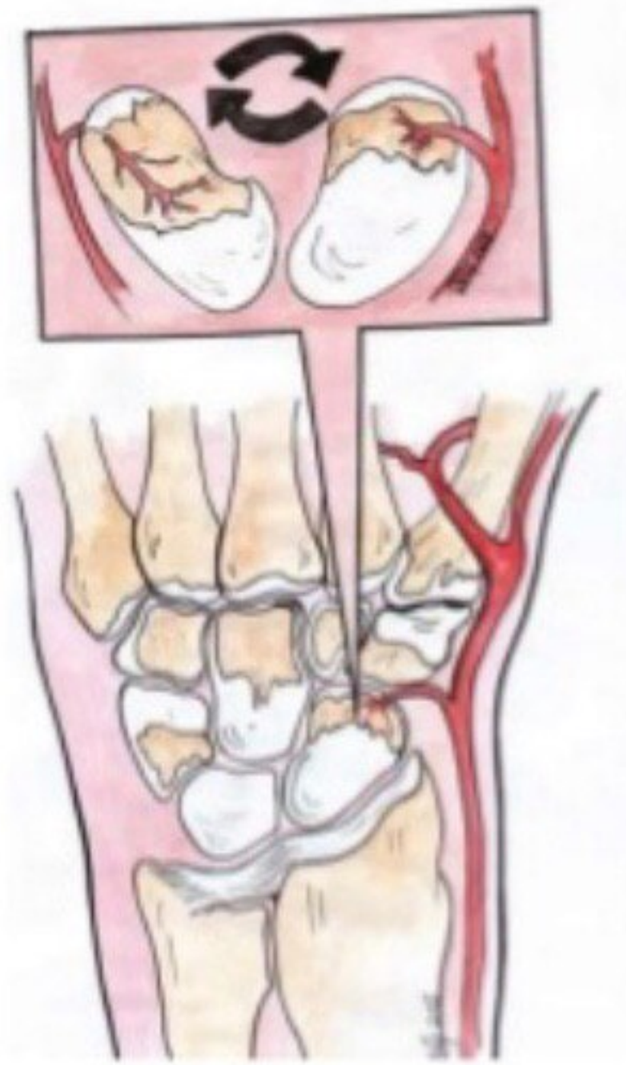
- **Management:**
  - Conservative:
    - Undisplaced fractures.
    - No need for reduction and are treated in plaster.
    - The cast is applied from the upper forearm to just short of the metacarpophalangeal joints.
    - 90% should heal.

1. Scaphoid Fracture

- **Management:**
  - Operative:
    - Displaced fracture.
    - Open reduction and internal fixation (ORIF) with a compression screw.

1. Scaphoid Fracture

- **Complications:**
  - Early:
    - Non-union.
  - Late:
    - Avascular Necrosis (AVN).
    - Osteoarthritis.



2. Rolando's Fracture

- **Definition:** This is an intra-articular fracture across the base of the first metacarpal in the shape of T or Y with subluxation of carpometacarpal joint.

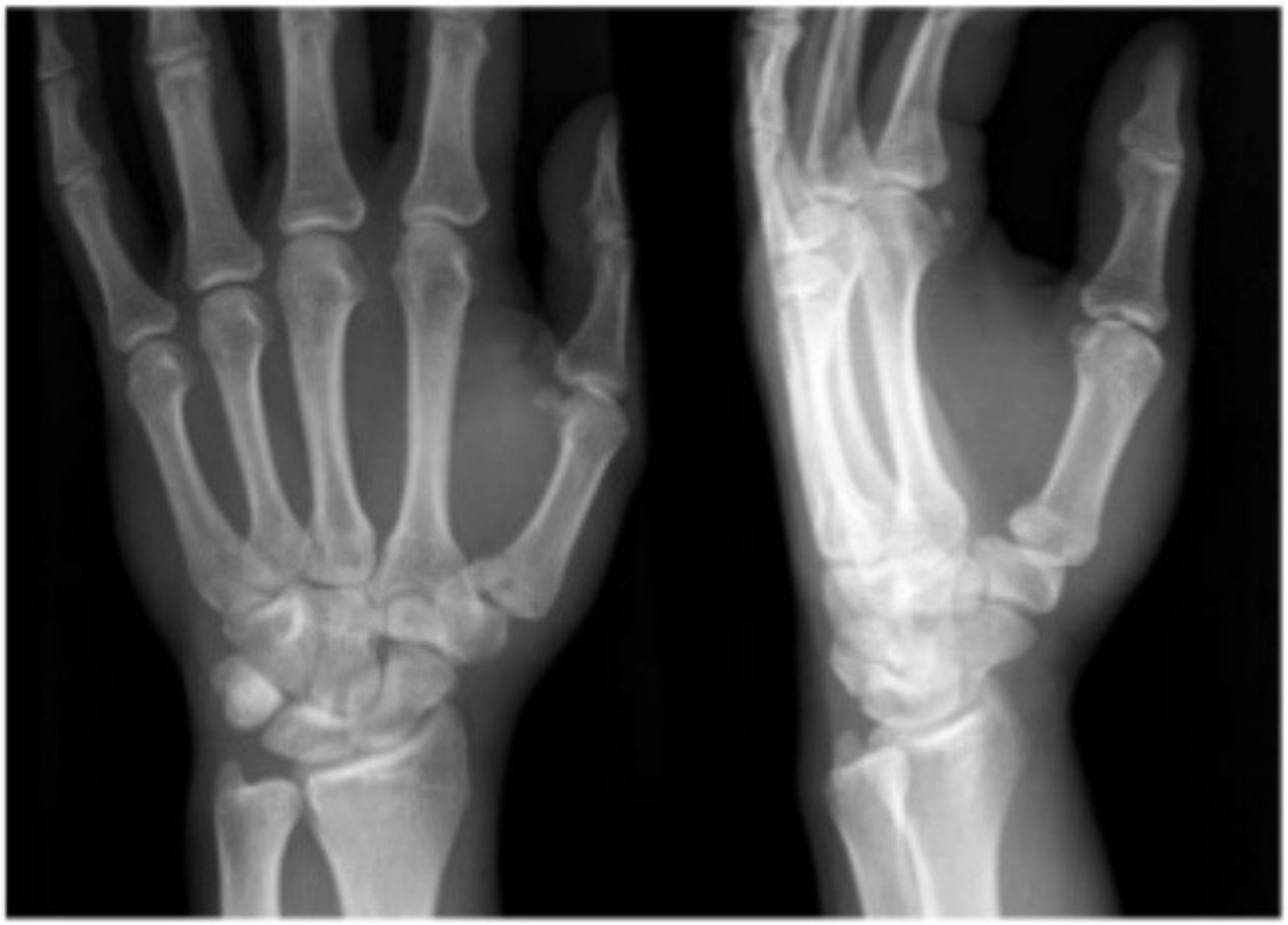
2. Rolando's Fracture

- **Mechanisms of Injury:**
  - Axial loading and abduction injury of the thumb.

- **Clinical Features:**
  - Pain, tenderness, and limitation of movement.

2. Rolando's Fracture

- **Imaging Studies:**
  - AP and lateral views of the hand.



2. Rolando's Fracture

- **Management:**
  - Operative:
    - Closed reduction and K-wiring.
    - Open reduction and mini-screw fixation.
    - Immobilization in thumb Spica.

3. Fr of the phalanges

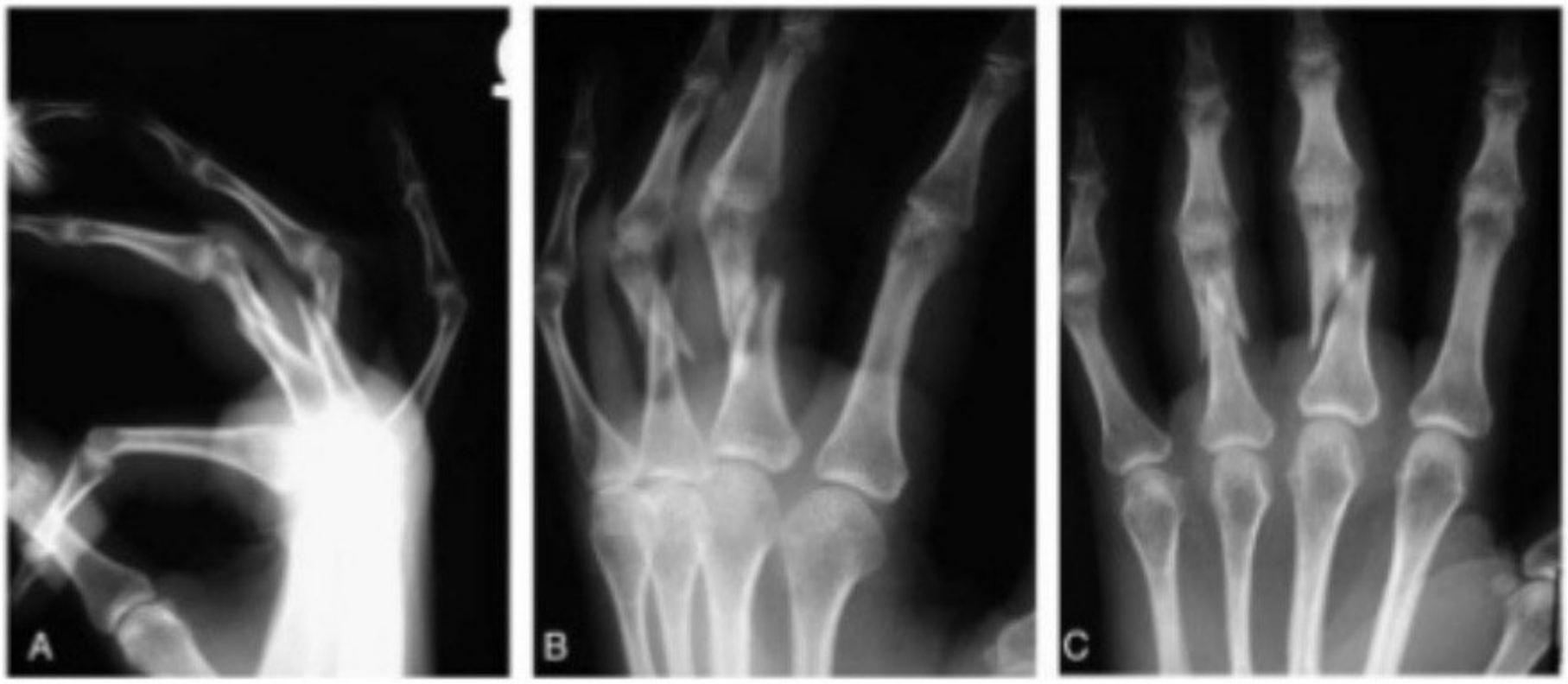
- **Definition:** Common fracture and could be includes proximal, middle, or distal phalanx.

- **Types:**
  - Undisplaced.
  - Displaced.

- **Mechanisms of Injury:**
  - Fall on a heavy object on the finger or crushing of fingers.

3. Fr of the phalanges

- **Imaging Studies:**
  - AP, lateral, and oblique views.



3. Fr of the phalanges

- **Management:**
  - Conservative:
    - Undisplaced fracture:
      - Treatment is basically for relief of pain.
      - Simple method of splintage.
    - Displaced fracture:
      - Manipulation and immobilized in a simple aluminum splint.

3. Fr of the phalanges

- **Management:**
  - Operative:
    - If displacement can't be controlled by conservative methods.
    - A percutaneous fixation or open reduction and internal fixation using K-wiring may be necessary.

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