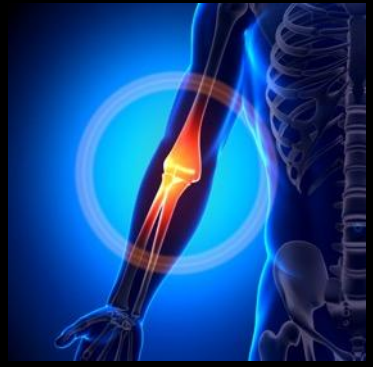

SF Trauma Course 2025

Transolecranon Fracture Dislocations

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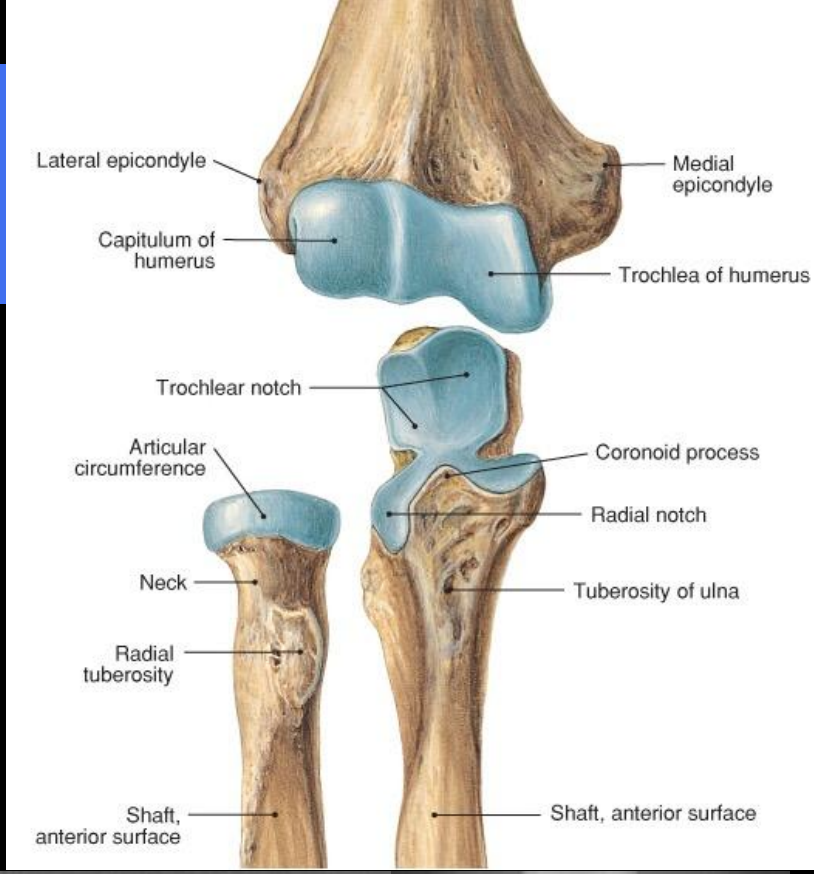
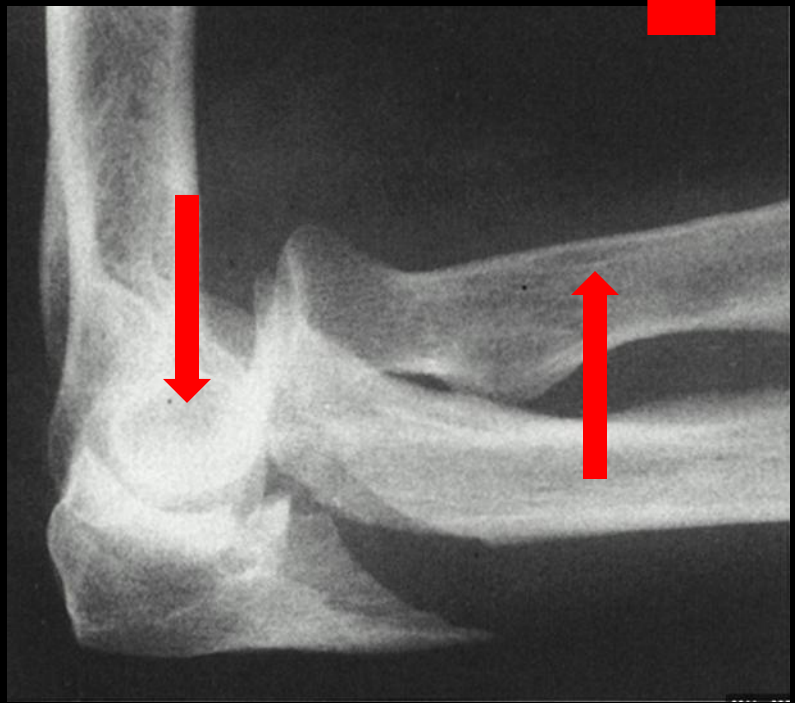
Elbow

- Ulno-Humeral
- Radio-Capitellar
- Prox Radio-Ulnar



Mechanism

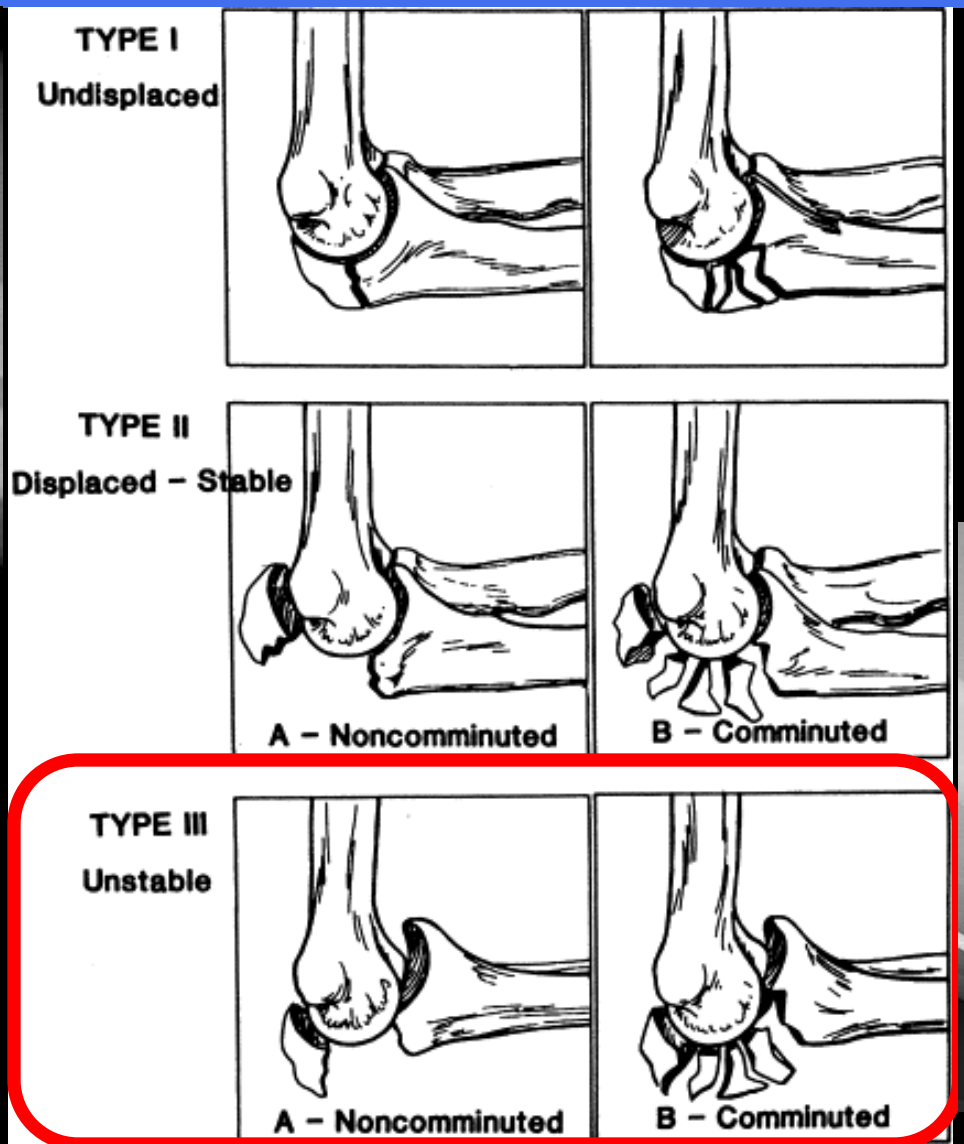
- Forces are applied to the dorsal aspect of the forearm with the elbow in a flexed position
- Distal humerus impacts across the greater sigmoid notch
- Olecranon fracture with dx of U-H joint.



Transolecranon FxDx

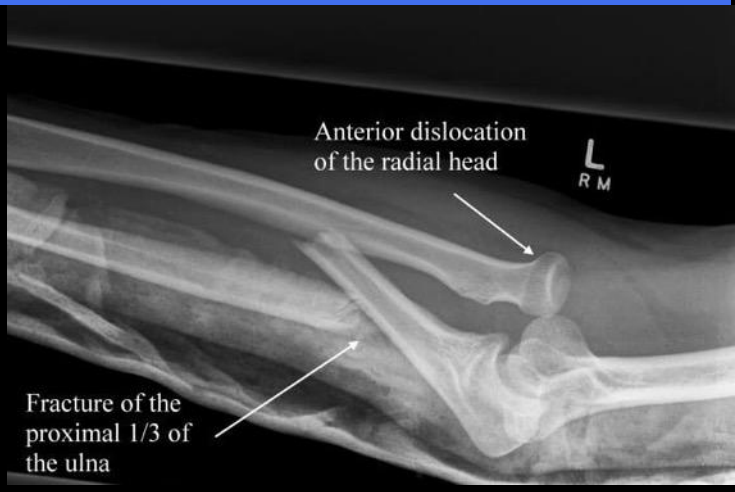
- **DISRUPTION** of Ulnohumeral joint
- PRUJ intact
- Collateral ligaments Intact (usually)

Olecranon Fx vs Transolecranon FxDx



Anterior Monteggia vs Transolecranon FxDx

- PRUJ, Ulnohumeral joint
- Anterior Monteggia:
  - PRUJ dislocation
  - U-H joint intact
- Transolecranon FxDx:
  - U-H joint disrupted
  - PRUJ intact



Anterior Elbow Dx vs Transolecranon FxDx

- Ligaments vs Bone
- Anterior Elbow Dx
  - Ligamentous injury
  - In peds with epicondyle fx
- Transolecranon FxDx:
  - Bony injury, Ligaments intact (usually)

Olecranon FxDx

- ANTERIOR:
  Transolecranon FxDx

- POSTERIOR:

  Posterior Monteggia FxDx

Transolecranon Fxdx

- Anterior elbow FxDx
- The term first used by Biga & Thomine

La luxation trans-olécranienne du coude

N. Biga et J. M. Thomine

Revue de Chirurgie orthopédique, 1974, **60**, 557-567.

Revue de Chirurgie Orthopédique et Réparatrice de l'Appareil Moteur

Biga & Thomine. Rev Chir Orthop Reparatrice Appar Mot. 1974

Transolecranon Fxdx

- ***Simple***: oblique fx
- ***Complex:*** comminution of greater sigmoid notch and proximal ulnar metaphysis

Ring et al. JOT 1997

Transolecranon Fxdx

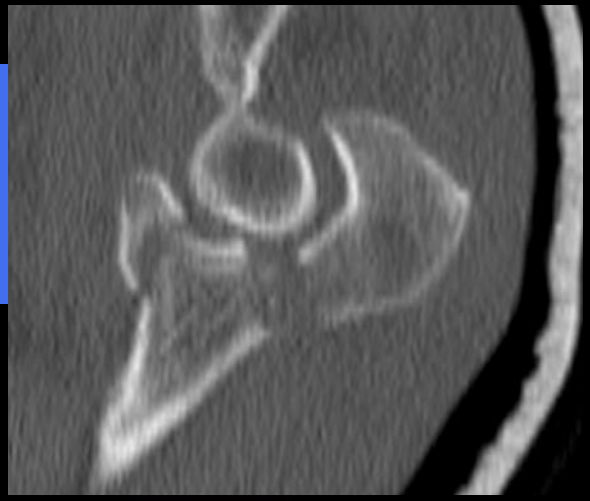
- Simple olecranon fx
- Comminuted olec fx
- + proximal ulna fx
- + radial head fx
- + ligamentous injury

Management in ED

- Check if open wound
- Closed reduction
- Long arm Splint

Evaluation

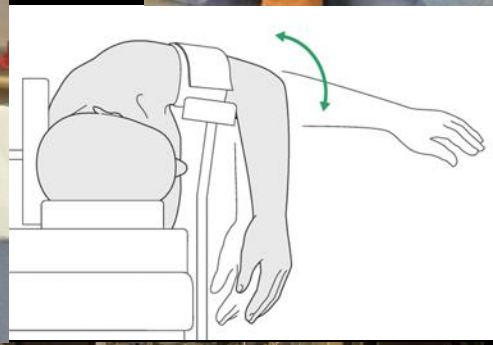
- CT scan

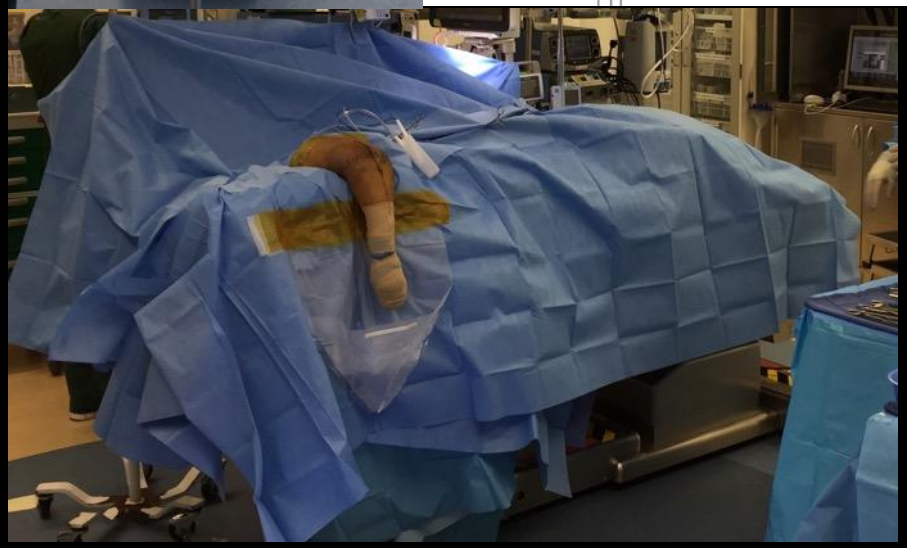


- Identify all injured structures:
  - Coronoid
  - Radial head
  - Insertions of LUCL & MCL
  - Impaction

Surgical plan

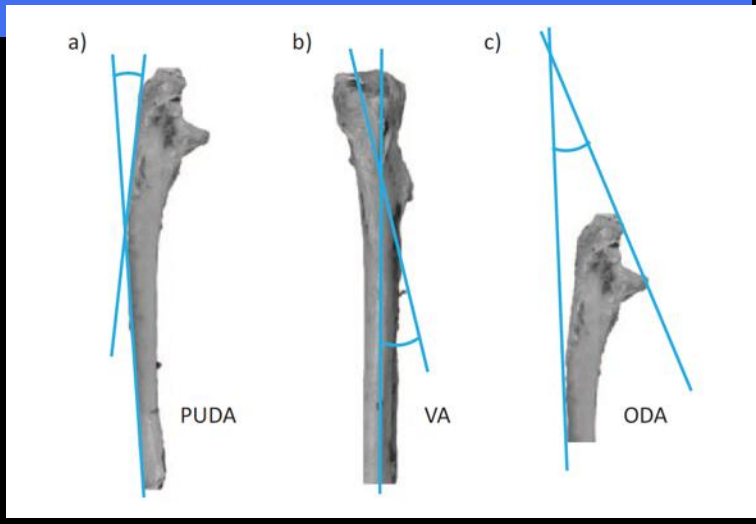
- Positioning
- Approach
- Order of Reduction & Fixation
- Fixation Construct





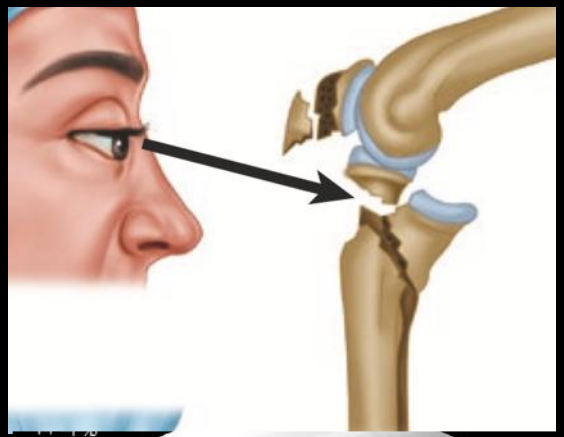
Reduction

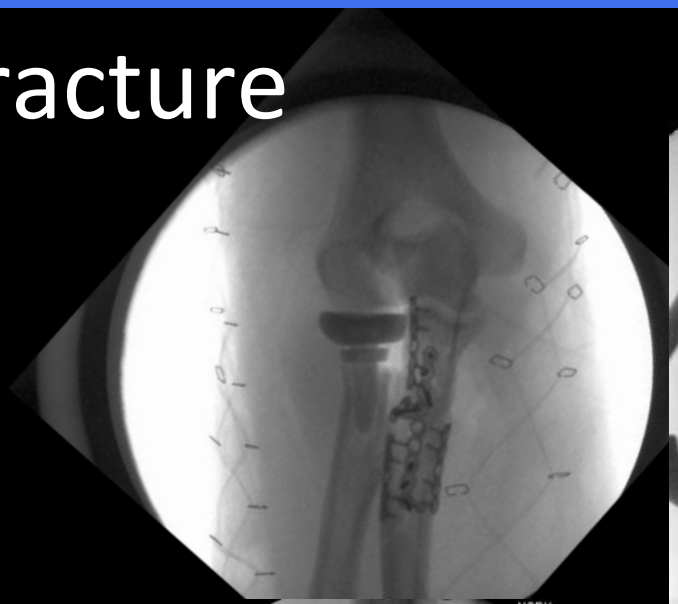
- Articular fx: Anatomic reduction is key
- Cortical read
- Use trochlea as template if Comminution /Impaction of sigmoid notch

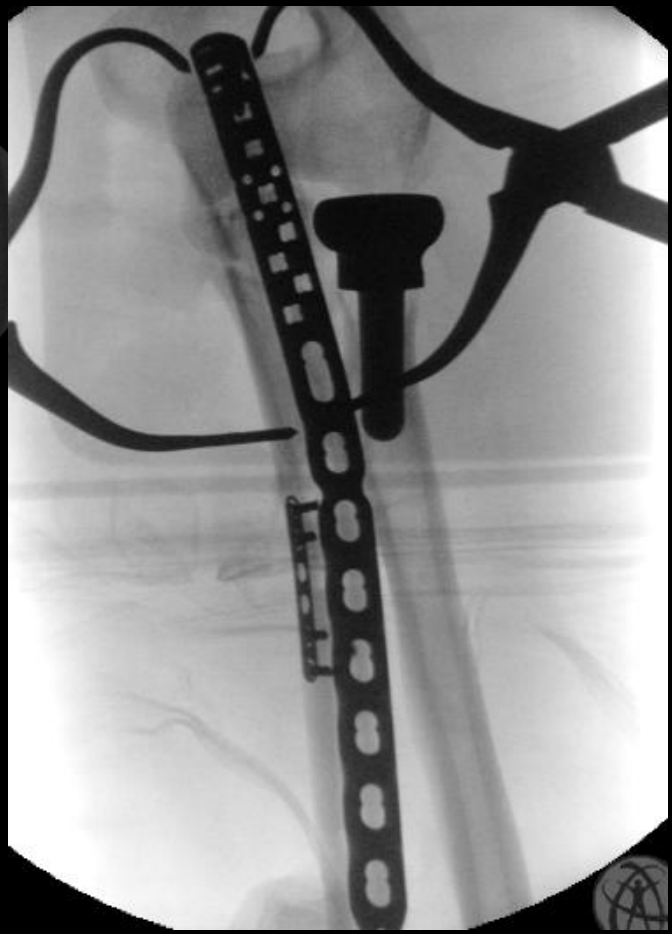


How to Access Radial head?

- Through the fracture

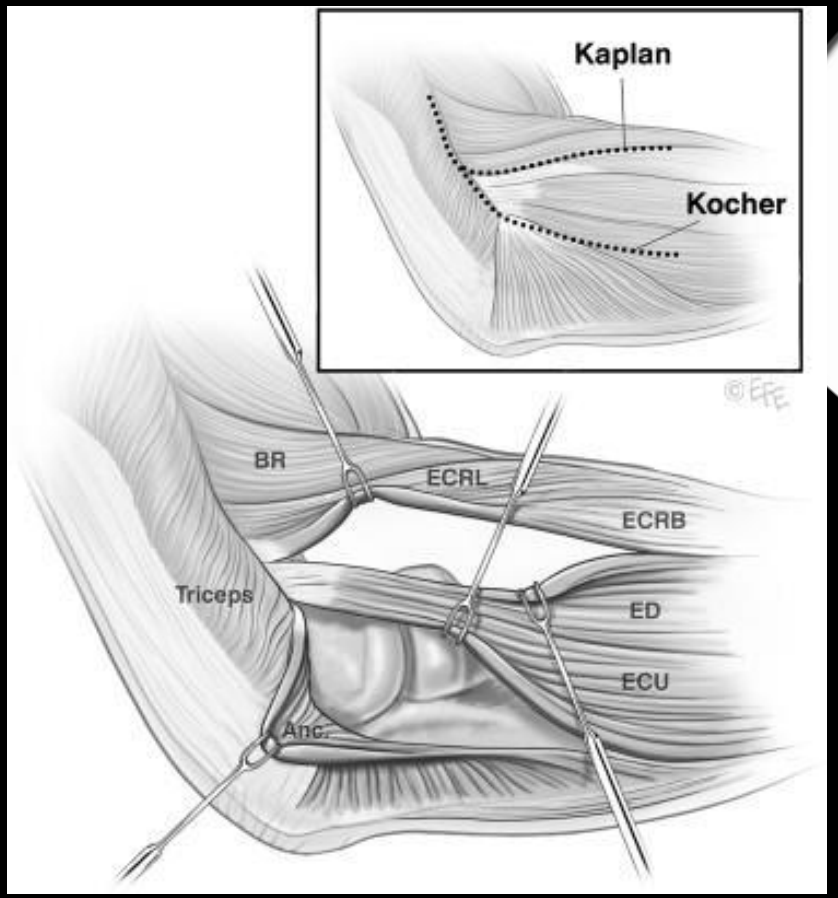






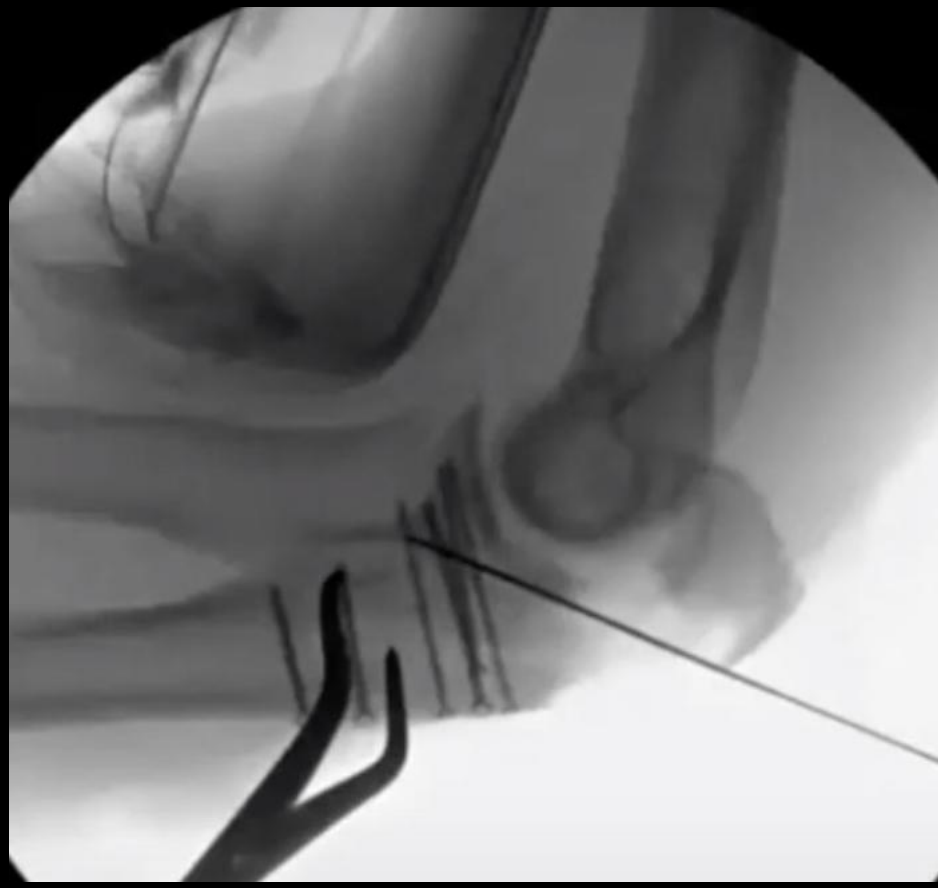
How to Access Radial head?

- Through separate Lateral interval
  - after fixation of ulna



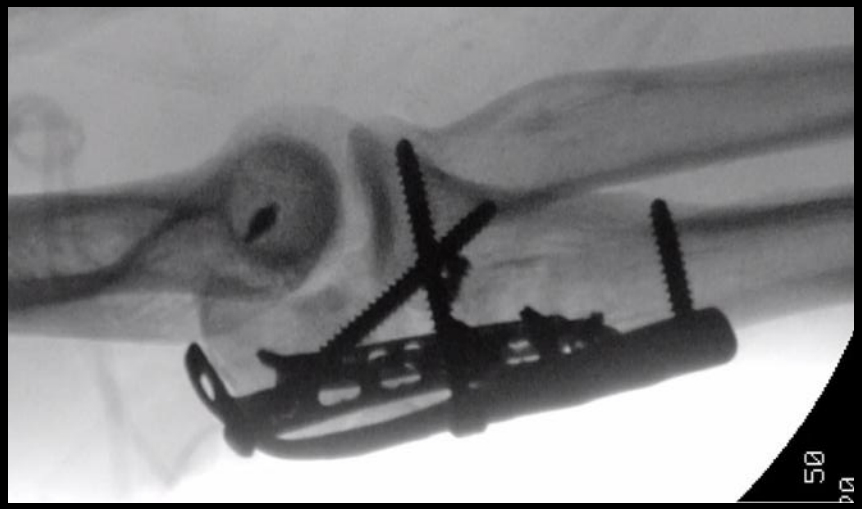
Order of Reduction & Fixation

- (Coronoid tip)
- Radial Head
- Coronoid base, ulnar metaphysis, impaction
- Olecranon
- Ligaments



Associated Ligamentous injury?

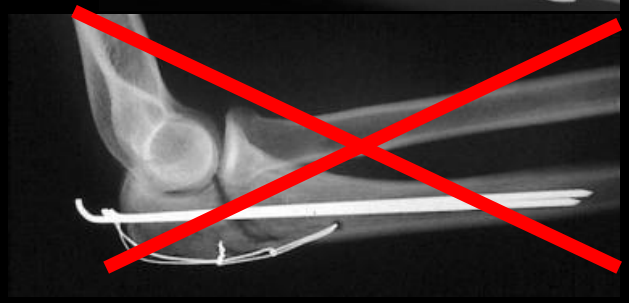
- Assess stability after bony fixation
- Address if unstable



Fixation construct

- Articular fx: Absolute Stability
- Secure fixation of coronoid
- Miniplates for comminution

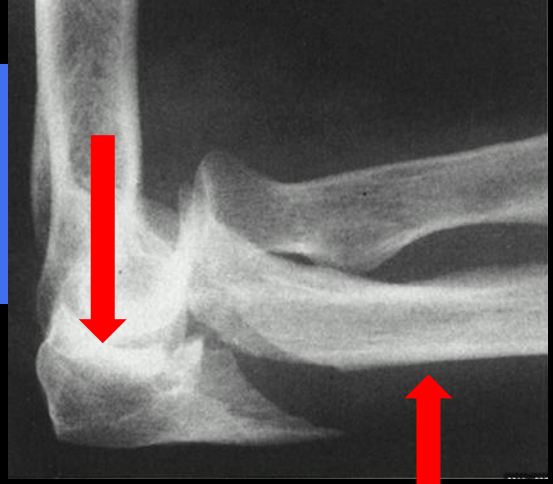
- Fixation with DORSAL Plate



Postop

- (Splint 7-10 days)
- NWB, Passive and AAROM Elbow
- Forearm and wrist ROM
- Avoid leaning onto the arm
- After 6 weeks gradual increase of WB

Common Pitfalls



- Suboptimal fixation
- Lack of/Suboptimal fixation of coronoid fragment
- Lack of restoration of Prox ulnar anatomy (PUDA and greater sigmoid notch)
- Tension band wiring may not work: shear injury → requires buttress

Take Home Messages

- Identify pattern
- Anatomic reduction & stable fixation is paramount for good outcome
- Don’t miss Coronoid fragment
- Assess ligamentous stability

THANK YOU

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