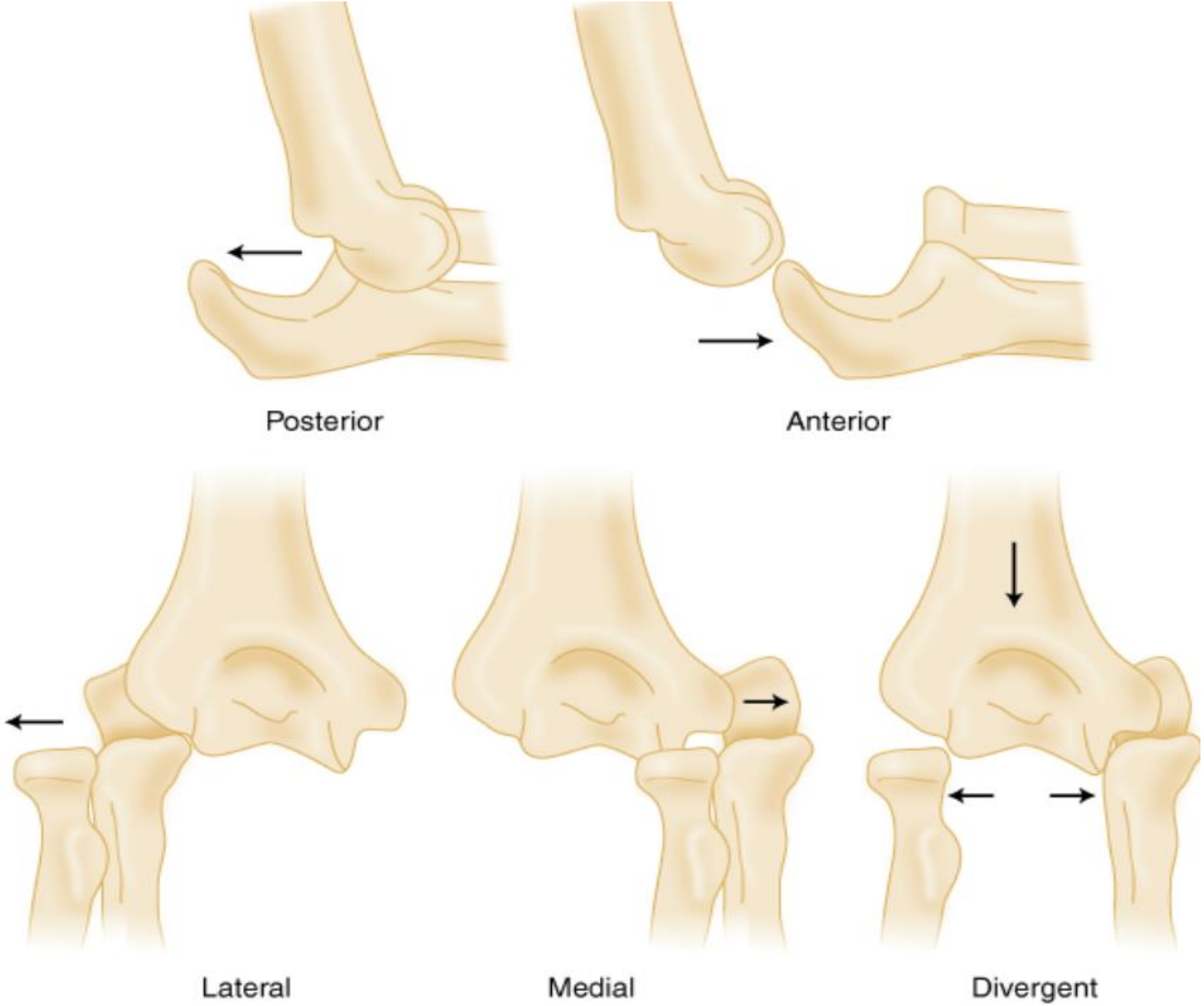
Maedeh Asna Ashari, MD
Assistant professor od
Emergency Medicine

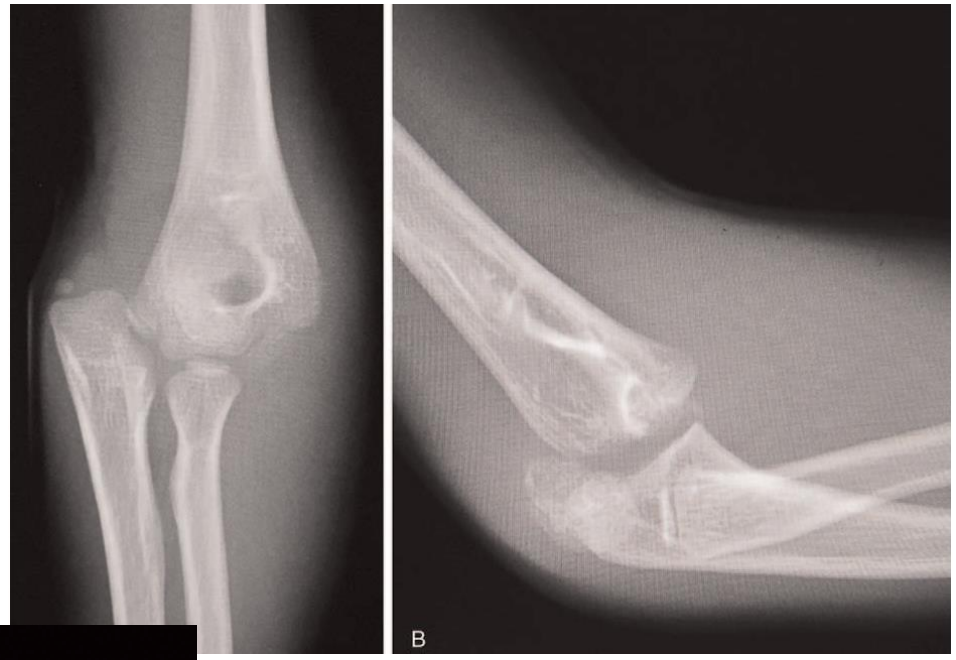
ELBOW DISLOCATION REDUCTION

ELBOW DISLOCATION CATEGORIES:

- Posterior
- Anterior
- Lateral/Medial
- Divergent (radius and ulna are dislocated in opposite directions)
- Isolated dislocations of the radius


Posterior
Anterior
Lateral
Medial
Divergent


R
JE


B

A middle aged man is coming to ED after falling down on his hand, he is holding his forearm like this

What do you do?

Orthopedic consultation ?

Admission/Observation ?

Physical Examination?

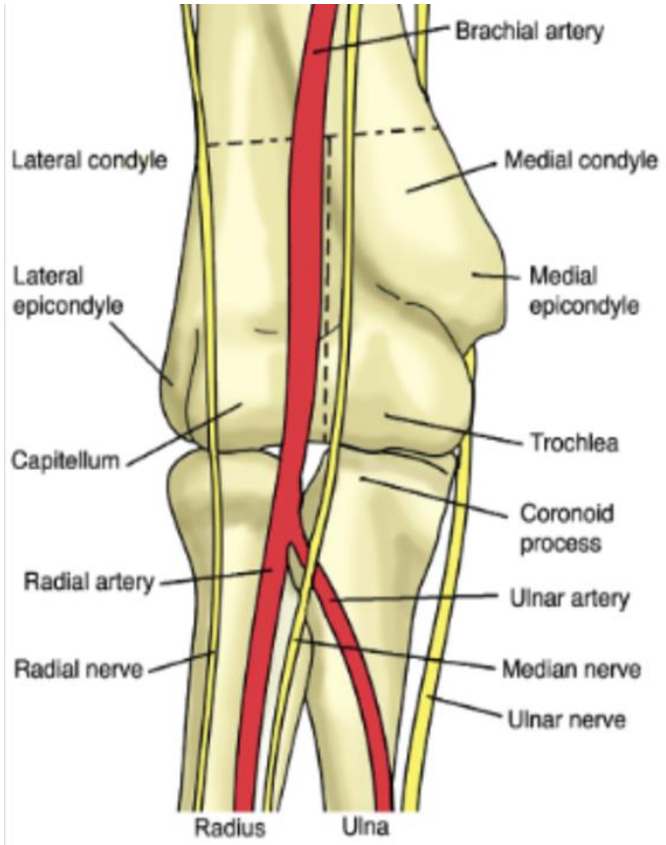
Radiologic Examination?

PHYSICAL EXAMINATION?

Open ?

Nerve injury?

Vascular injury?



The most serious complication of elbow dislocation is injury to the **brachial artery**

Median nerve:

Motor: Extend the wrist. If too painful due to injury, then extension of the thumb IP joint may be substituted.

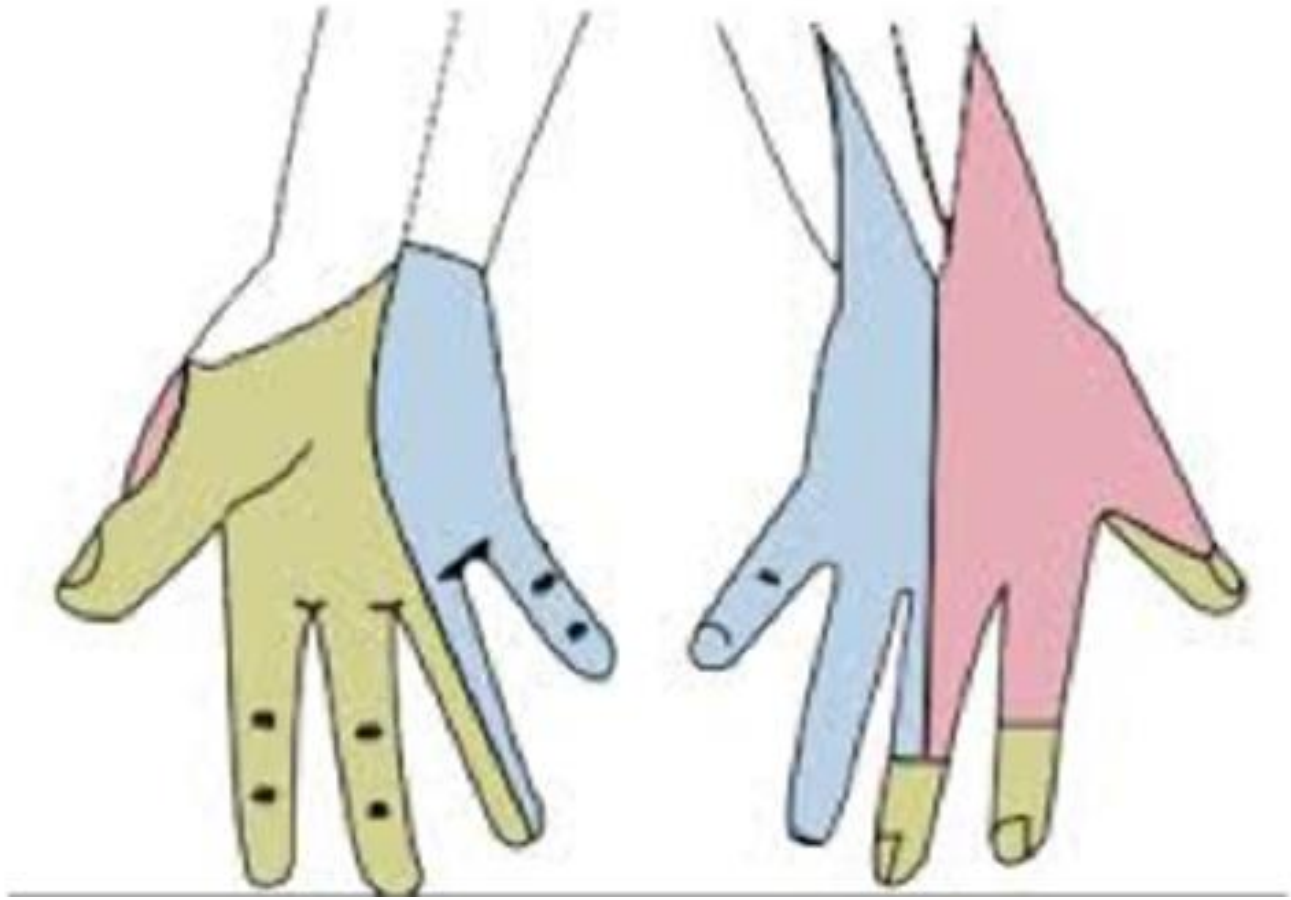
Sensory: Test the dorsal webspace between the thumb and index finger

Ulnar nerve:

Motor: *Recurrent motor branch of the median nerve*: Have the patient attempt opposition (bringing the thumb tip across to the small finger tip)

Anterior interosseus branch of the median nerve: Make an OK sign by having the patient touch the tip of the thumb to the tip of the index finger

Sensory: Palmar surface of the index finger or thumb



Ulnar
Radial
Median

Note: management of nerve injuries is frequently expectant

RADIOLOGIC EXAMINATION

What are you looking for?

Type of dislocation

Associated fractures

ORTHOPEDIC CONSULTATION ?

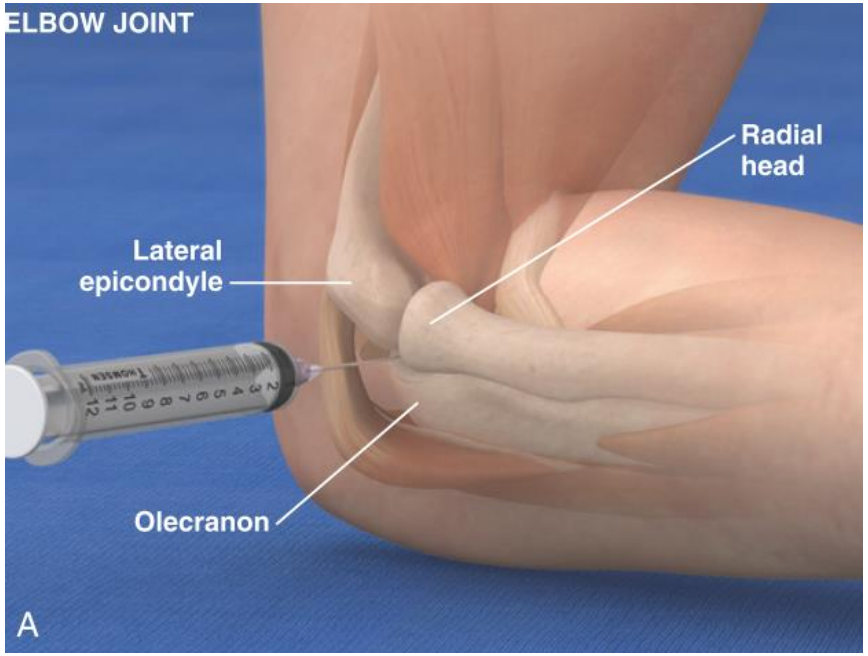
In most cases, orthopedic consultation should be sought before disposition

ADMISSION/OBSERVATION ?

Patients with any variety of elbow dislocation who have significant or immediate soft tissue swelling or hematoma formation or those who have questionable vascular integrity or neurologic findings are often **admitted** to the hospital or ED **observation unit**.

Closed Reduction of elbow dislocation

REDUCTION



- PSA
- Inject the elbow joint with a local anesthetic (3 to 5 ml of 2% plain lidocaine

Before injection, aspirate the joint to remove any blood

Posterior Dislocations






R

R

POSTERIOR DISLOCATIONS

Shortened forearm that is held in flexion/ olecranon is prominent posteriorly

POST DISLOCATION REDUCTION TECHNIQUE

1.Prone technique

- One person
- Two persons
- Parvin

2. Supine Approach

3.Traction-Countertraction

3. Chair/Back of Bed Method

PRONE; ONE PERSON

1. Place patient in the prone position.
2. Grab wrist of the injured arm
3. Apply traction and slight supination to forearm
4. Attempt to distract and unlock coronoid process from the olecranon fossa.
5. Using the other hand, apply pressure to post aspect of olecranon

PRONE :TWO PERSON

1.Place the patient in the prone position.

2. Elbow flexed to 90 degrees and supinated

3.Assistant, encircle the humerus with both hands

4.Apply pressure with the thumbs to the posterior aspect of the olecranon

5. Apply longitudinal traction

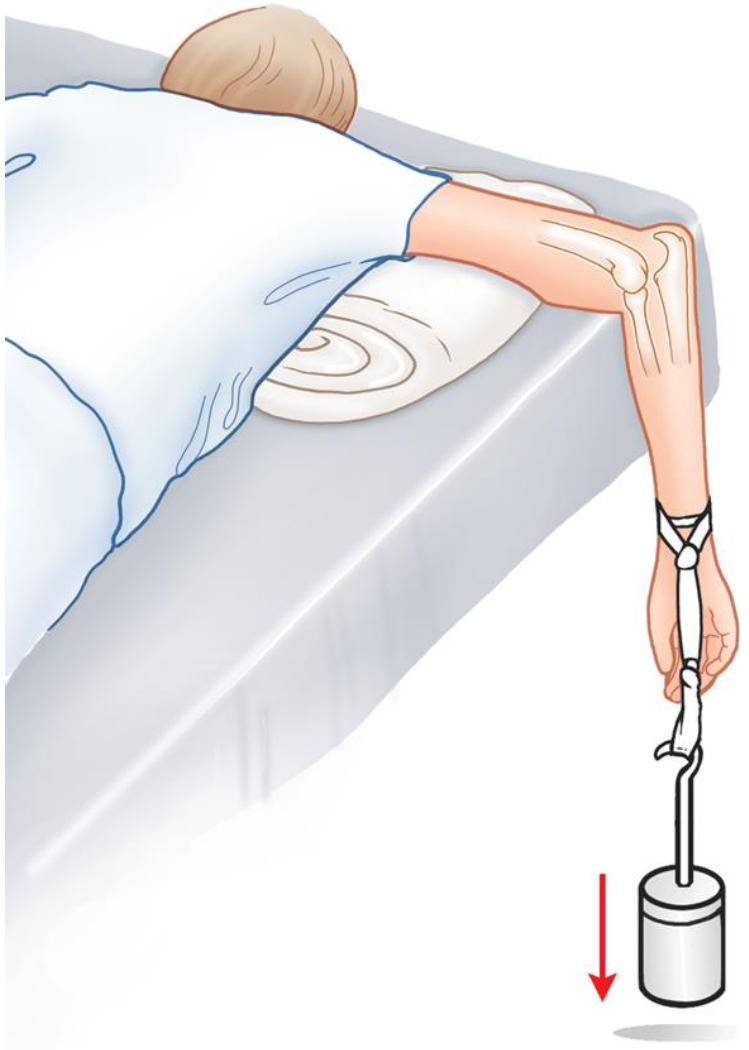

1
Hill-Rom

If reduction is not achieved, flex the elbow or have assistant lift the humerus

PARVIN METHOD

1. Positioned the patient as for the Stimson method of shoulder relocation, (prone on a stretcher with the arm hanging down)

2. Applied gentle downward traction or 3-5 kg of weight on the wrist.



SUPINE TECHNIQUE

1.Place the patient in the supine position on the stretcher

2. Have an assistant stabilize the humerus against the stretcher with both hands

3.Grasp the wrist, and apply slow, steady, inline traction, keeping the elbow slightly flexed and the wrist supinated

TRACTION-COUNTERTRACTION

CHAIR/BACK OF BED METHOD

1.Hang the patient's arm over the padded back of a chair or over the edge of the bed.
2.Apply pressure to the posterior aspect of the
olecranon to achieve reduction.
3.Traction may be applied to the forearm.

FAILED CLOSED REDUCTION

Failure to achieve closed reduction should suggest an entrapped medial epicondyle, inverted cartilaginous flap, or osteochondral fragment

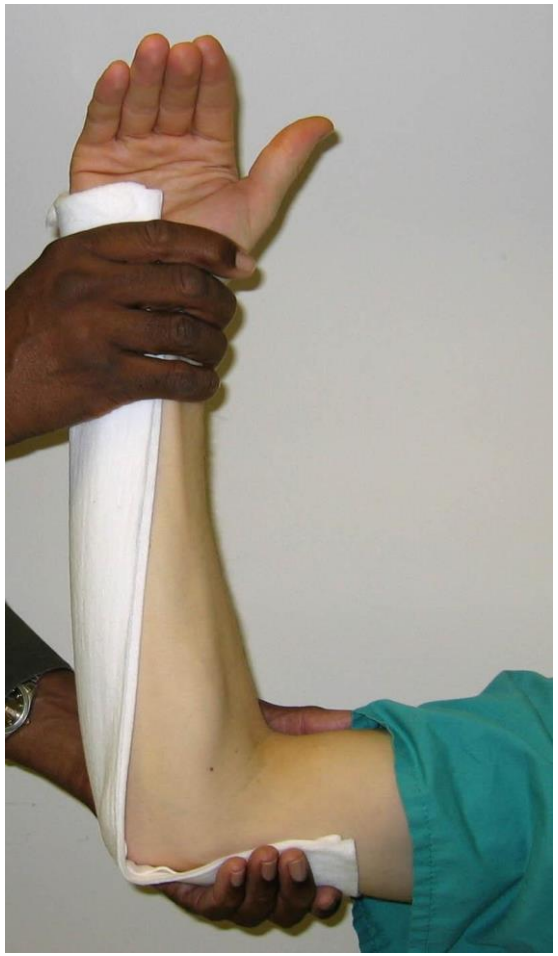
POST REDUCTION CARE

Put the elbow through a gentle range of motion (stable/ mechanical block)

Immobilize the elbow in Posterior Arm splint (90 degrees of flexion with forearm in slight pronation)

Post-reduction radiographs

Recheck neurovascular status of the extremity



Anterior Elbow Dislocations

Arm is shortened, forearm elongated and extended with anterior tenting of the proximal end of the forearm and prominence of the distal end of the humerus posteriorly

1.Apply in-line traction and backward pressure on the proximal end of the forearm

2. Assistant provides countertraction on humerus

3.Flex the arm beyond 90 degrees to ensure that the joint has been reduced.

When to discharge the patient?

How long the patient elbow must be immobilized?

Note 1: After reduction, any signs of delayed vascular compromise are first addressed by loosening the splint and decreasing the degree of flexion

Note 2: observe the patient in the ED or ED observation unit **for 2 to 3 hours after reduction**

Note 3: The optimal duration of immobilization is unknown