

Common Dislocations and Reduction Techniques 2025



Joint Dislocations

- **Dislocations**
 - simple vs uncomplicated
 - limb threatening
- **Most common dislocations- Finger, elbow, shoulder**
- **Early treatment reduces pain and often can be done with minimal or no anesthesia**



FIRST- DO NO HARM

- **Nearly impossible to do harm**
 - **IF**
 - **USE COMMON SENSE**



Joint Dislocations – General principles

- **Carefully assess anatomy**
 - **Dislocation versus displaced fracture**
- **Check and document neurovascular status pre and post reduction**
 - **Most neurovascular injury occurs at the time of the injury not as a result of reduction**
 - **Treatment of a dislocation with neurovascular compromise is reduction**

Dislocation Pearls

- In-line traction will reduce a large amount of dislocations acutely and is safe to attempt for even in-experienced clinicians
 - “Just pull on it”
 - Exception
 - MCP dislocations





Pearls

Fractures swell, initially dislocations don't.....

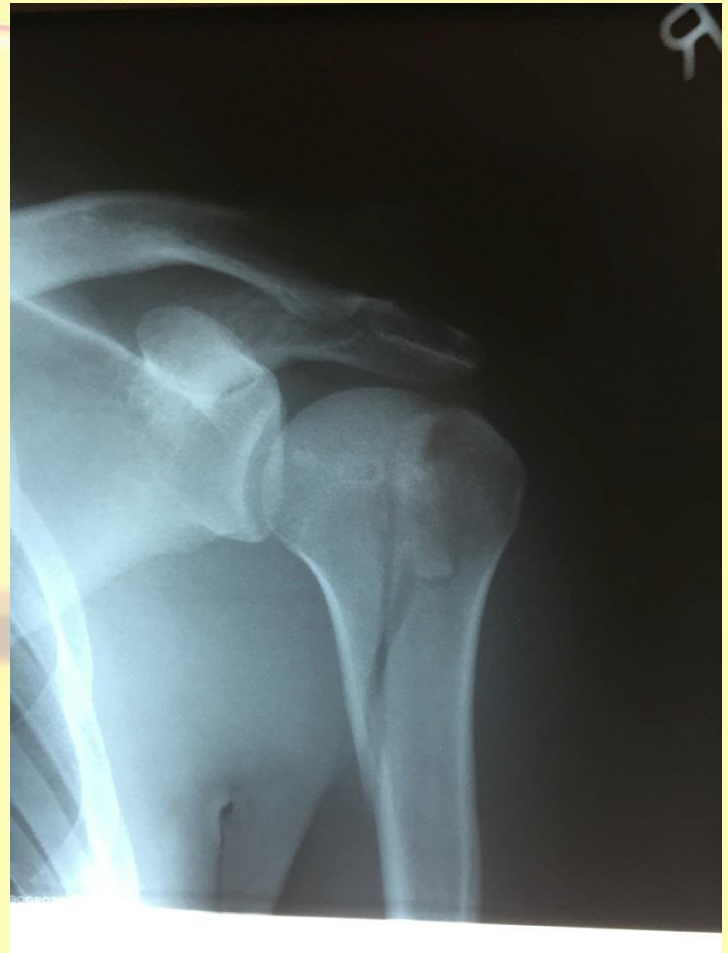


Joint Dislocations

- **concern for a fracture does not mean relocation should not be attempted**
 - **Level of experience will dictate comfort**
 - **Difficult to make a fracture worse with moderate force application**



Fracture Dislocation



Dislocation of the finger

- **Dorsal PIP most common**
 - **PIP and DIP treated the same**
- **Volar dislocation are unusual and generally require more extensive treatment.**
- **X-ray not necessary prior to reduction. Post reduction x-ray to evaluate alignment and look for fracture**
- **Buddy tape or splint post reduction**

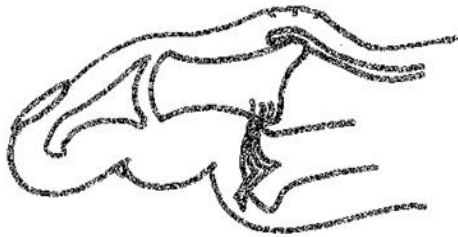


Phalangeal joint dislocations

- **Place thumb proximally behind dislocated joint**
 - **Slight extension can help**
- **Apply gentle steady in-line traction increasing force as needed.**
- **May need digital block if unable to reduce**
- **Soft tissue interposition may occur**
 - **Requires significant hyperextension**
- **“Stand behind technique”**



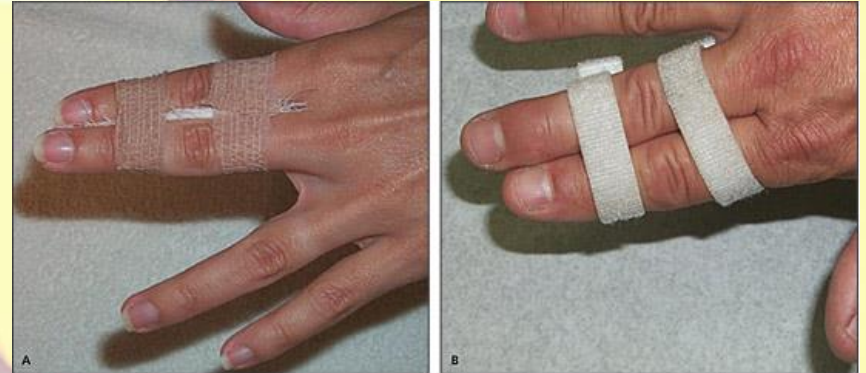
Difficult finger- more extension





Phalangeal joint dislocations

- **No instability**
- **Buddy taping until pain resolved**
- **Instability**
- **Extension block splint.**
- **Consider referral**
 - **Avulsion injury of greater than 1/3 joint surface**
 - **Significant joint instability**



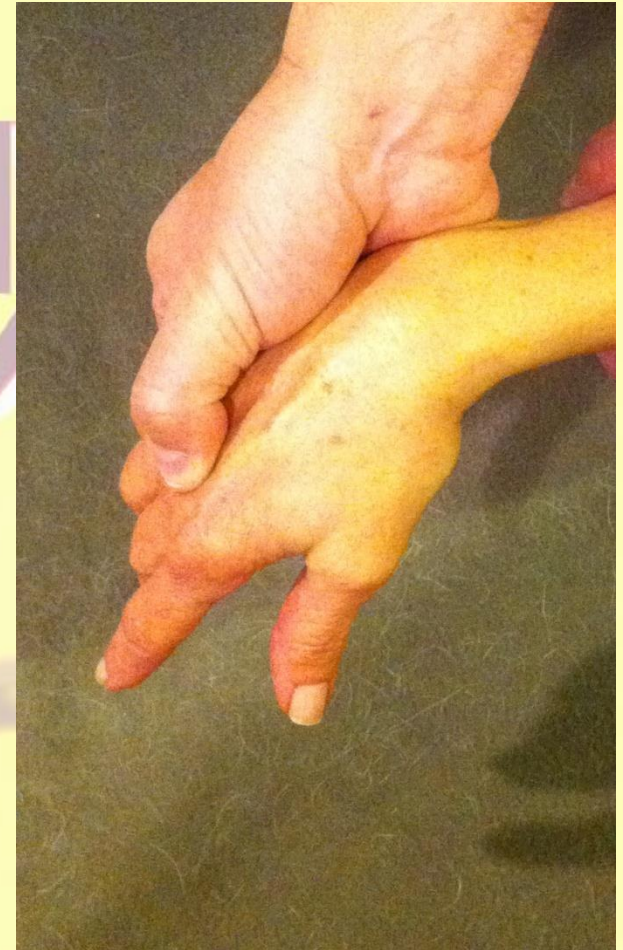
Pitfalls with Finger Dislocations

- MCP joint dislocation are more difficult to treat
- Never use longitudinal traction
- Entraps the metacarpal head in already tightened soft tissues or pull the volar plate into the joint, converting a simple dislocation into a complex dislocation.



MCP Dorsal joint dislocations

- Consider local anesthetic or intravenous sedation.
- Apply pressure over the dorsal proximal phalanx, gently pushing in a palmar and distal direction, while simultaneously placing the (MCP) joint into flexion.
- Flexing the wrist initially may aid reduction by relaxing the flexor tendons.
- Maintain reduction in dorsal splint with the MCP joint flexed 30°.



Pitfalls with Finger Dislocations

- **Rolando fracture**
- **Bennett's fracture**
- **Both generally require surgical intervention and can look like a CMC dislocation of the thumb**



Elbow Dislocation

- **Relatively common sports injury**
- **Generally from a fall on outstretched arm**
- **Almost always posterior**



Elbow Dislocation



Figure 1a: A complete elbow dislocation.

Elbow Dislocation- Reduction

- **Relatively safe to attempt without pre-reduction radiographs**
- **Reduction relieves pain**
- **Many are perched and reduced easily**
- **Always perform neurovascular exam prior and post**

Sideline reduction

- If possible a brief attempt at reduction on the field may be attempted
- Use one hand to stabilize the forearm and apply traction
- Use the other hand to stabilize the distal humerus and apply pressure to the olecranon



Elbow Dislocation- Reduction

- Place the patient in a prone position with the affected elbow flexed at 90° and the humerus supported by the table.
- The hand of the affected arm should be pointing toward the ground. Apply downward traction to the forearm, which is held in slight pronation, while using the other hand to grasp the humerus
- Apply pressure to the olecranon in a medial and downward motion to facilitate reduction
- Bring the elbow slowly into extension.
 - Reduction generally occurs at 30°



Post - Reduction

- Repeat neurovascular exam
- Sling \pm posterior splint initially if x-ray not done or available
- Obtain x-ray
- Gentle valgus testing at 30° will help check for stability.
 - If comfortable check at full extension-
 - Caution may cause unstable elbow to re-dislocate
- If stable use sling and start early ROM
 - Better ROM, less pain and better functional scores with early ROM compared to plaster splinting * [B]
- If unstable- posterior splint and referral.

Elbow Dislocations

- **Immediate referral for neurovascular compromise**
- **Immediate referral for suspect fractures**

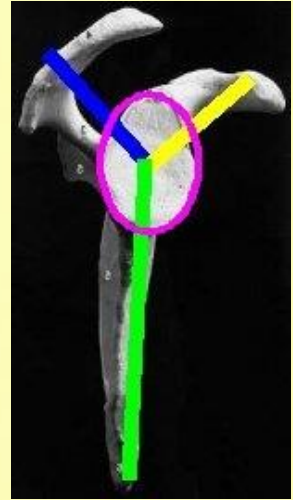


Post-Reduction

- **Return to play**
 - **Full ROM**
 - May lose ability to full extend
 - **Full strength**
 - **Generally 3-6 weeks**
 - **Consider bracing**



Sideline Reduction of Glenohumeral Dislocations without Anesthesia



General Principles

- **Early reduction when possible**
 - Pre reduction radiographs not usually necessary [A]
- **Rule out associated injuries.**
- **Establish calm control**

Finesse Vs Force

- We have modified the various reported techniques



General Principles

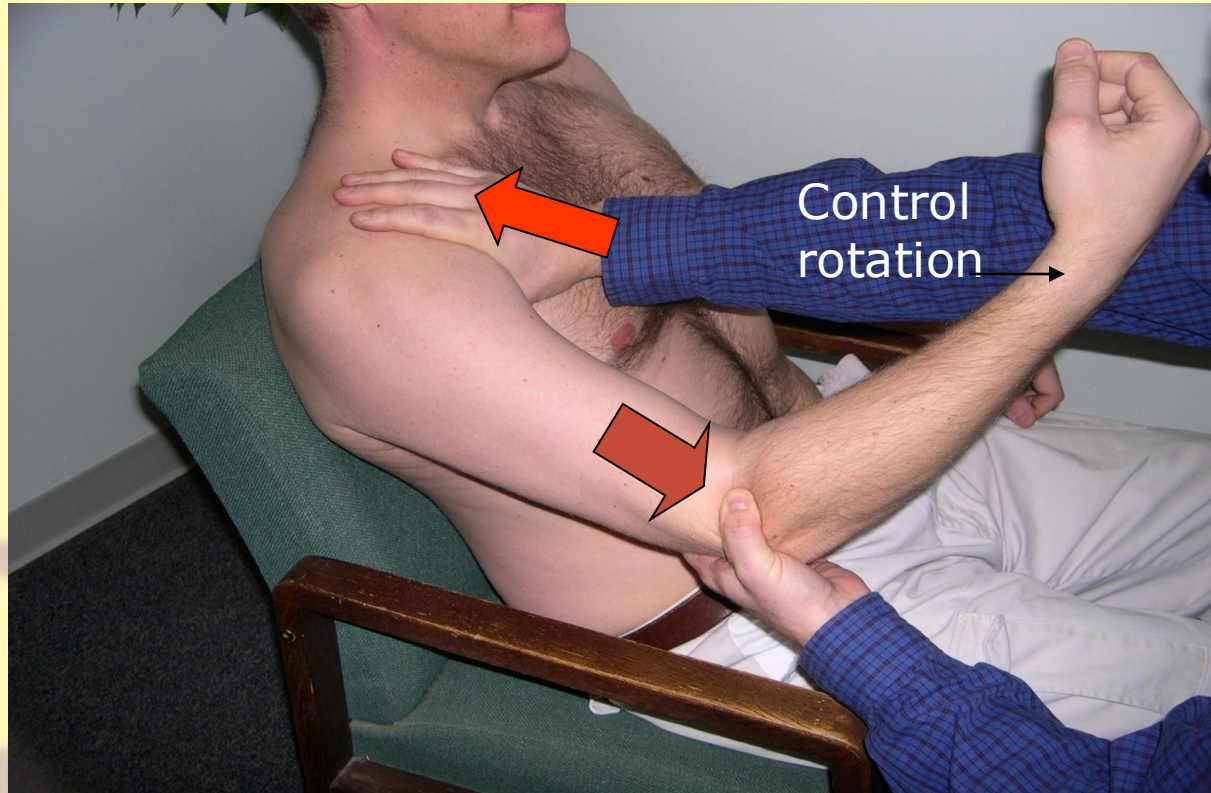
- **Identify the resting position of the humeral head in relation to the glenoid.**



General Principles

- Chose most comfortable position to effect **Humeral traction** and **scapular stabilization**
 - Seated for minimal stabilization & traction.
 - Prone for moderate stabilization & traction
 - Supine for maximum stabilization and traction
- Find position of relative comfort
- Coach relaxation and breathing

Seated for minimal stabilization & traction.



- Good for “perched” anterior inferior dislocations if the patient is relaxed and you can achieve a neutral humeral position.

Seated

- **Athlete can help by self scapular retraction and leaning away from you**
- **Start with gentle traction and slowly increase force**
- **Bring the arm into a neutral position**
- **Slight forward flexion and/or external rotation and/or abduction may be affected**
- **If you unable to bring the shoulder from internally rotated position then move onto next technique**



Take it how it wants to go



Prone position for excellent scapular **stabilization** & moderate **traction**

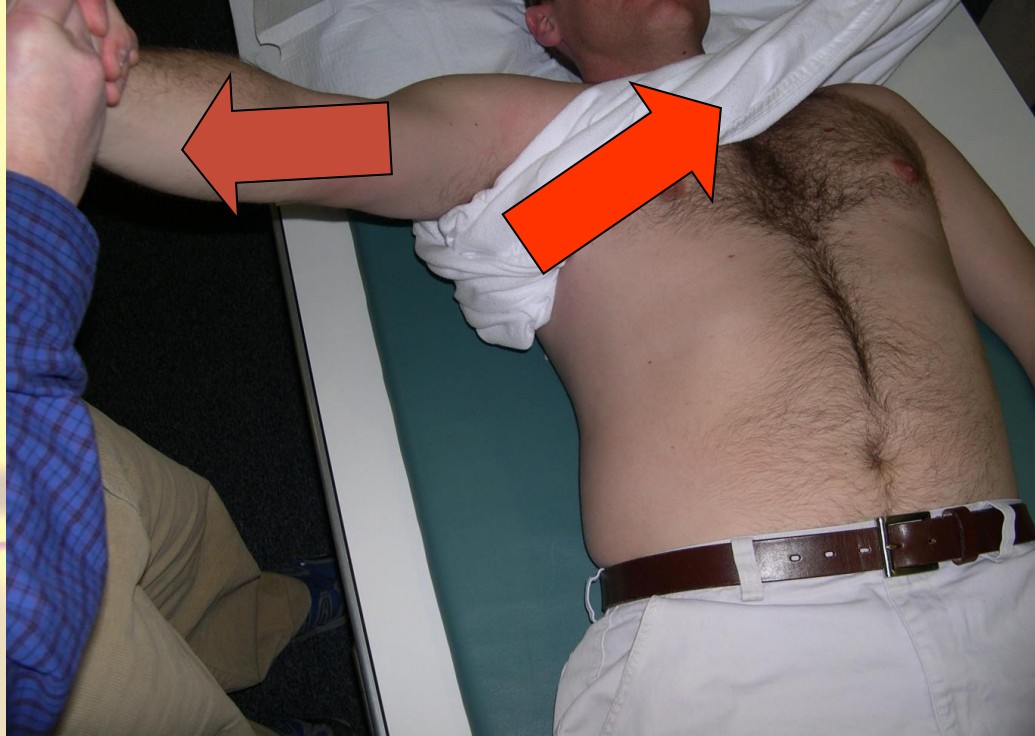


Start with mild **humeral traction** & then add **scapular manipulation**



- Pull down to disengage the locking mechanism(window shade)
- Try to avoid letting the humeral head “clunk” in.

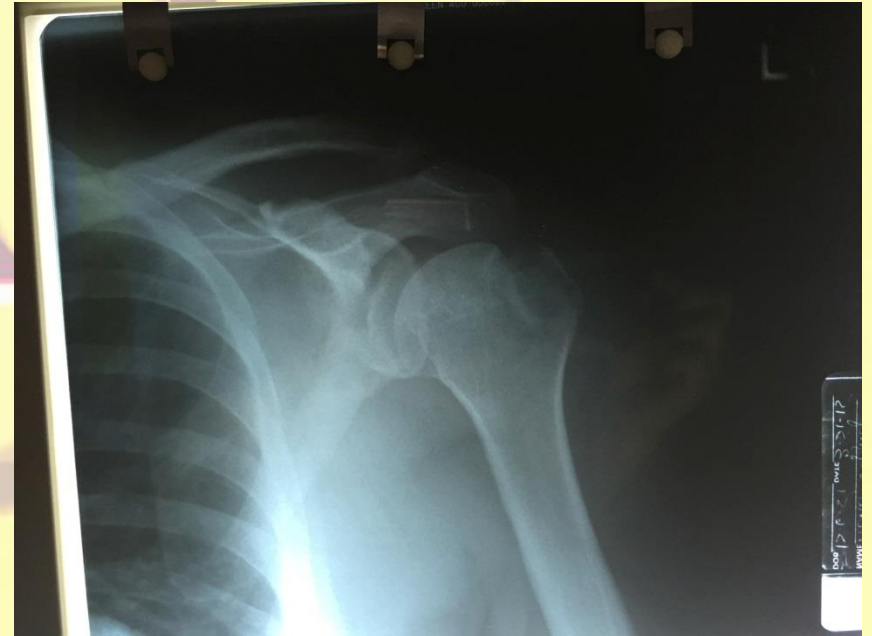
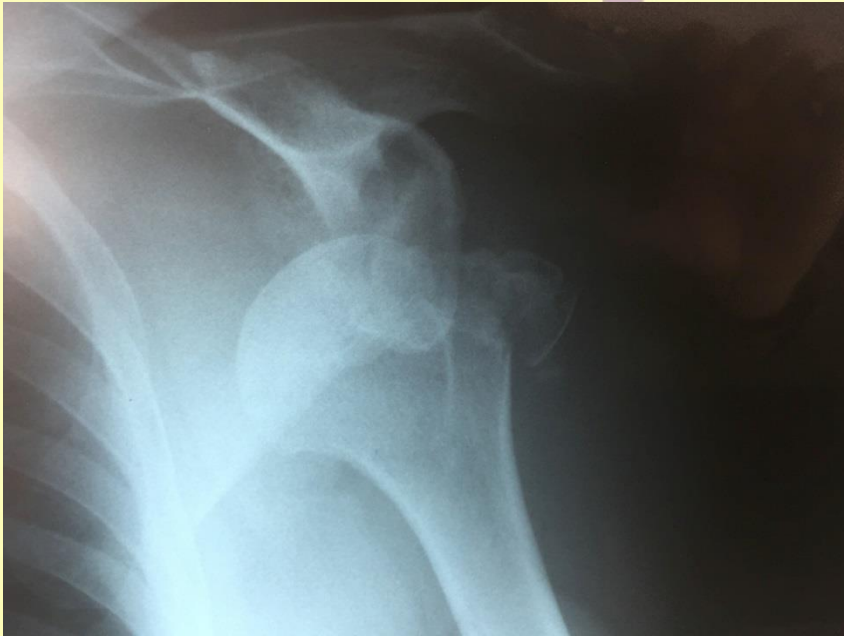
Supine for maximum stabilization and traction



- Counter traction w/ bed sheet is usually required for ant./inf. dislocations w/ fractured greater tuberosity

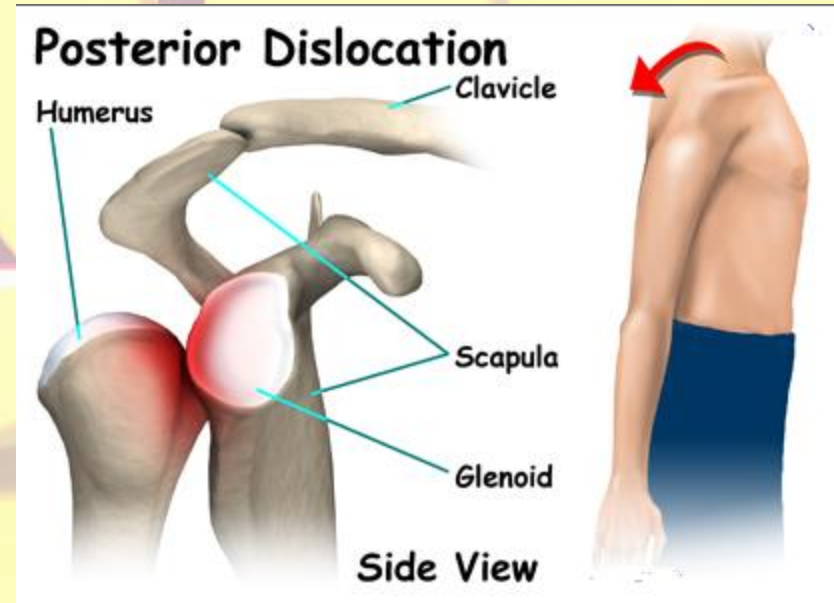


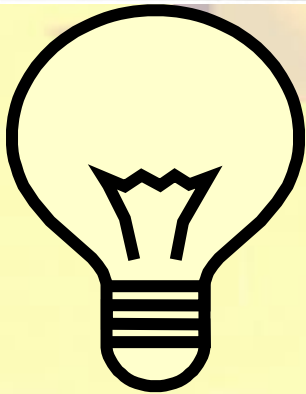
Pre and Post Reduction



Posterior Shoulder Dislocation

- **Less common**
 - 2-4% of shoulder dislocations
- **Traditionally associated with seizures**
- **Complications include reverse Hill-Sachs, fractures and rotator cuff tears**

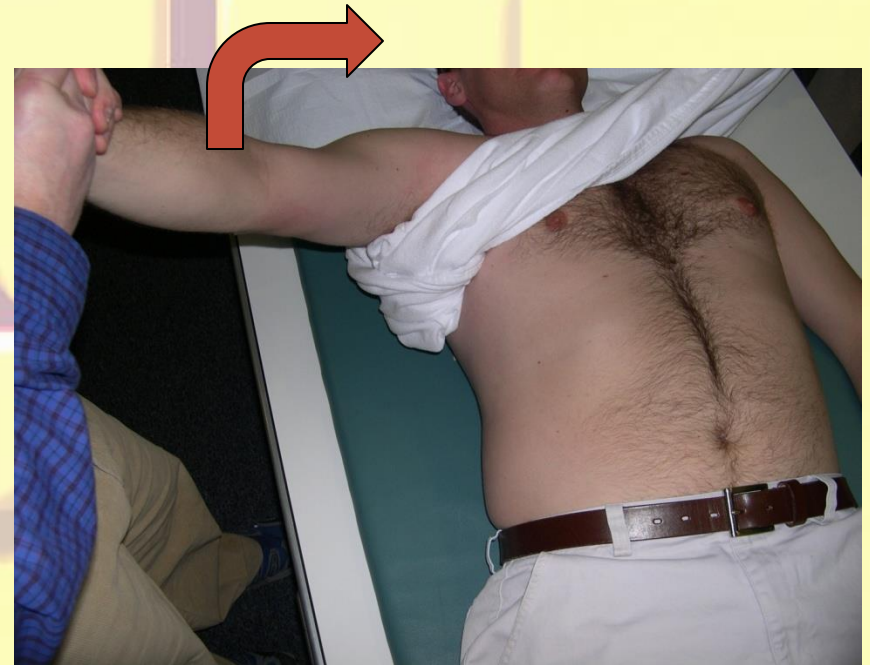




Light bulb sign

Posterior shoulder Reduction

- Prone position
- Traction/counter traction
- Traction first in abduction
- Then bring into forward flexion



Post-Reduction Management

- **Sling – regular if stable**
- **Gunslinger if unstable in IR**
- **RTP will be based on stability and if any surgical intervention**



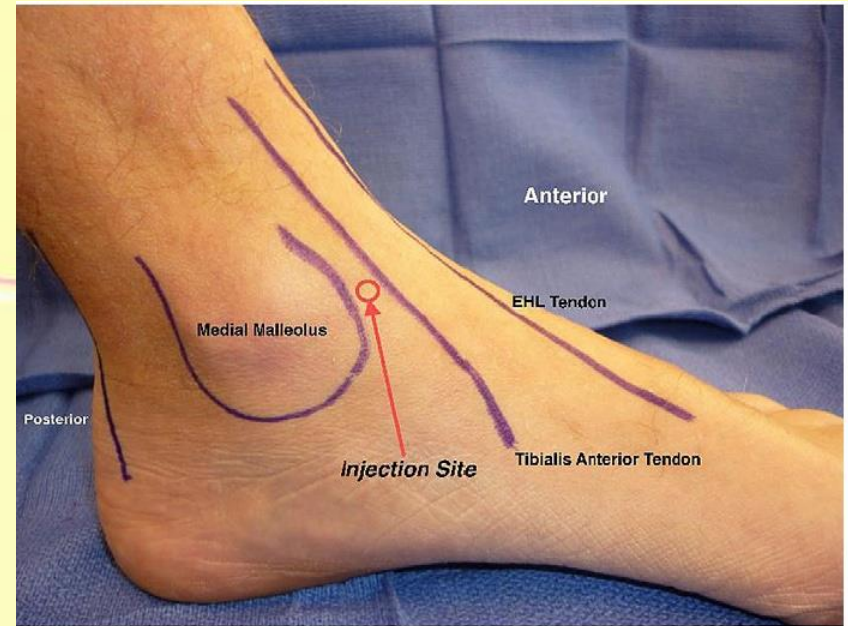
Ankle

- Maybe with or without fracture
- Attempt can be made without anesthesia
- Hematoma blocks are effective



Hematoma block

- Needle is advanced, it is common to impact the Talar dome.
- Simple repositioning of the needle in a more cephalad angle
- Once dark blood is aspirated, confirming the correct needle position, 10 to 15 mL of lidocaine should be injected
- Wait 5-10 min



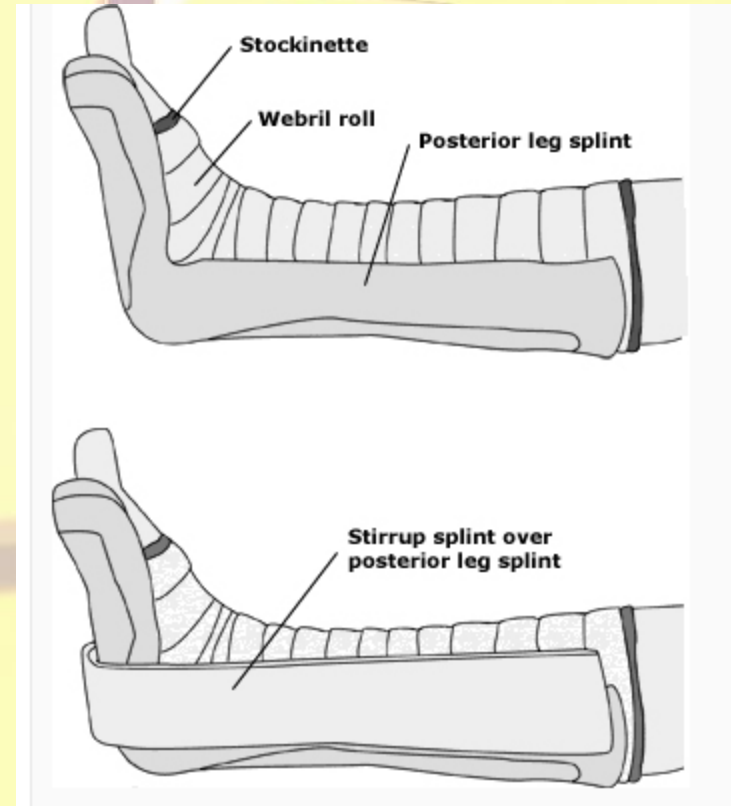
Ankle Reduction

- Traction using calcaneus and midfoot
- If talus is lateral then IR may help
- If talus is medial then ER may help
- Keep knee slightly flexed to unlock gastroc complex



Ankle Dislocation post reduction

- U-splint ± posterior splint
- X-ray
- Ortho referral



Knee dislocation

- Commonly associated with peroneal nerve and vascular injury
- Often not attempted in pre-hospital setting
- Attempt at inline traction reasonable but do not delay activation of emergency medical system
- May spontaneously reduce so be suspicious in multi-ligament injury
- Regardless of success splint and send to ER ASAP for Vascular study!!



Knee Dislocation

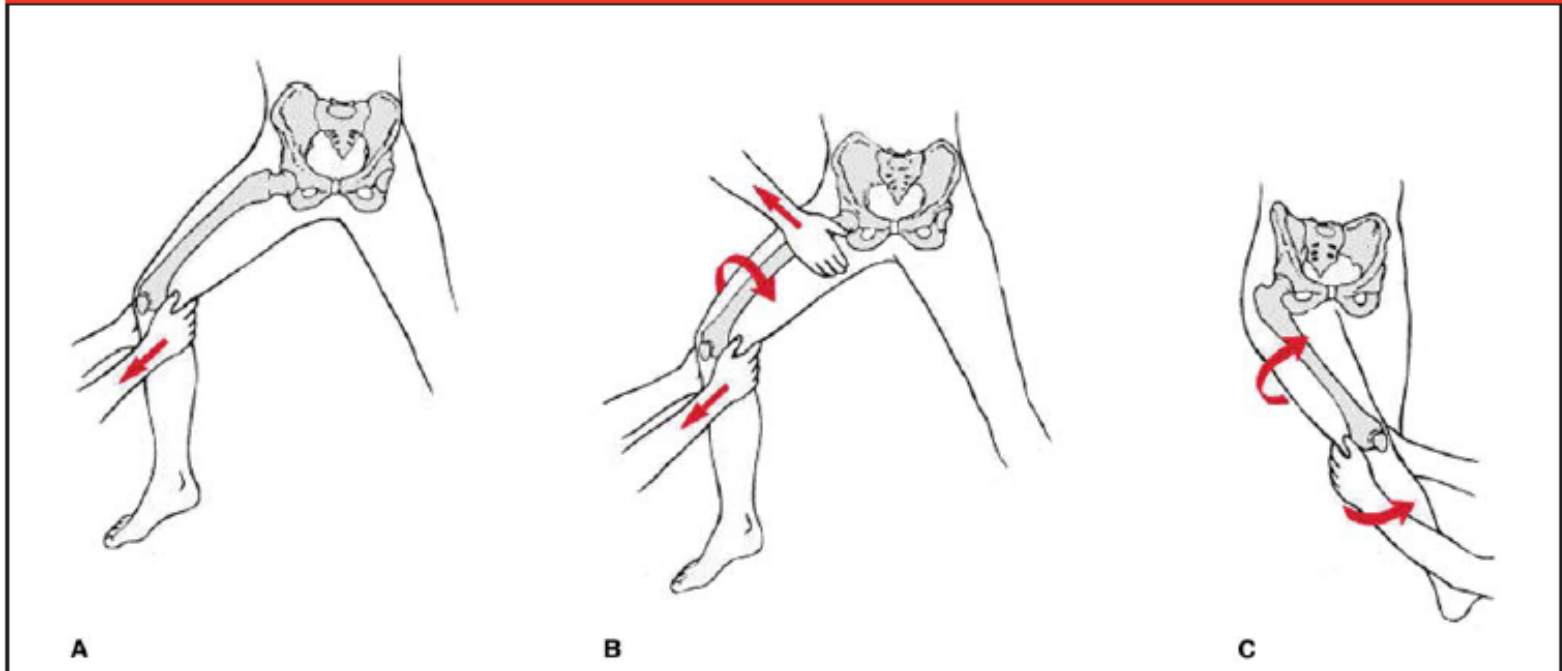


Hip Dislocation

- Emergency
- Early reduction reduces morbidity
 - AVN
- Almost all posterior in sports
 - hold the leg internally rotated and flexed across the midline.
 - Fx generally ER
- Concern for acetabular fracture should not deter attempt at reduction



Figure 2



The Allis maneuver for reduction of posterior hip dislocation. **A**, Anteriorly directed traction is applied to the affected limb. **B**, A combination of counterpressure and gentle internal and external rotation is applied to assist in an atraumatic reduction. **C**, Limb adduction and inline traction may further aid a successful reduction. (Reproduced with permission from Levin P: Hip dislocations, in Browner BD, Jupiter JB, Levine AM, Trafton PG, eds: *Skeletal Trauma*, ed 2. Philadelphia, PA, WB Saunders, 1998, p 1732.)

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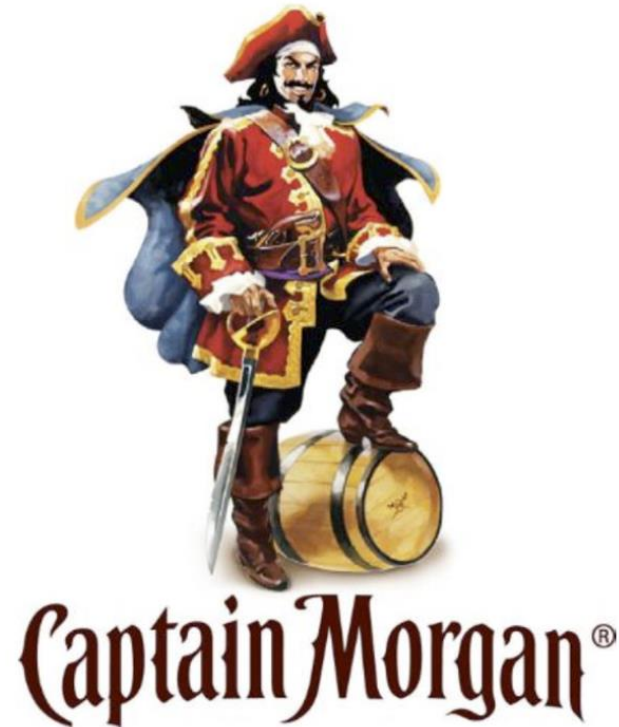
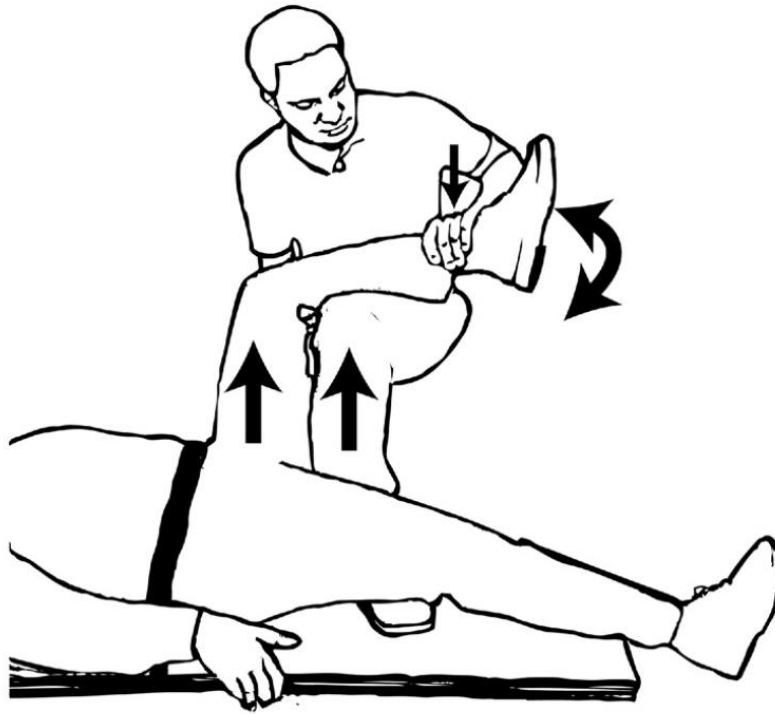


Figure 1. The patient is placed supine on a gurney, and the pelvis is fixed to a backboard with a strap. The patient's hip and knee are flexed to 90 degrees. The physician places one foot on the board, with a knee behind the patient's knee. The physician holds the patient's knee in flexion by holding the ankle down and applies an upward force to the hip by lifting with his or her calf and then gently rotates lower leg. Captain Morgan reproduced with permission from Diageo PLC.

Assistant stabilizes pelvis in place of board and strap if these are not available



Hip Dislocation

- **Activate EMS**
- **Attempt reduction**
- **Transport for further imaging and additional reduction attempts if needed**
- **Early weight bearing does not increase the risk of AVN**
 - **May be delayed for fractures**
- **RTP if function but may take 4-6 months**

Quickly assess neurovascular status and for other injuries

Activate EMS for hip/knee/ankle or open injuries

Ask for the medical

- ## Make an attempt at reduction

Summary

- Many dislocations can be reduced quickly with minimal force
- Judicious use of force is unlikely to cause additional complications
- Remember anatomy when attempting a reduction



Thank you

