Joint Reduction Techniques

For patients with acute appendicular joint dislocations, be sure to follow all pertinent statutes, rules, regulations, employer policies, and physician standing orders if attempting to reduce a dislocation. When indicated, on-site reduction of an acute dislocation can restore function, reduce pain, and reduce risk of neurovascular compromise (Rozzi et al., 2018). Patient consent or parental consent/patient assent should be obtained before attempting joint reduction.

General procedures for on-site joint reduction:

1. Obtain consent
2. Evaluate neurovascular function distal to the injury (sensory, motor, and vascular status)
3. Palpate for deformity and determine direction of the dislocation
4. Rule out fracture – if fracture is suspected, do not attempt on-site joint reduction.
5. Attempt joint reduction if indicated
6. Re-assess neurovascular function after each reduction attempt
7. Immobilize the injured joint and refer for radiograph

ANTERIOR SHOULDER DISLOCATIONS - GLENOHUMERAL JOINT

FARES Technique (Fast, Reliable, Safe) (Sayegh et al., 2009)

1. Place patient in a supine position
2. Extend the elbow and place the forearm in a neutral position
3. Apply longitudinal traction at the hand and wrist, while slowly abducting the shoulder
4. While abducting and applying traction, apply gentle oscillation throughout the movement to relax the muscles (10 cm in amplitude, 2-3 cycles per second)
5. At 90° abduction, externally rotate while continuing to abduct, oscillate, and apply traction
6. Joint reduction is usually achieved between 90° and 120° of abduction

External Rotation Technique (Marinelli & de Palma, 2009)

1. Patient can be seated or supine
2. Elbow should be flexed to 90°
3. Shoulder is placed in adduction and internal rotation, and flexed to 20°
4. Apply inferior traction force at the elbow while externally rotating the shoulder
5. *Optional* Can also stabilize/manipulate scapula while applying ER and traction

Spaso Technique (MIljesic & Kelly, 1998)

1. Place patient in a supine position
2. Grasp the patient's wrist and bring the shoulder into 90° of forward flexion
3. Apply gentle anterior longitudinal traction towards the ceiling, with slight external rotation
4. You may need to sustain traction for several minutes while the patient relaxes the shoulder
5. *If available, a second clinician can stabilize the clavicle to keep the patient's torso stable

Traction-Countertraction (Matsen) Technique (Wright, Brandon, & Reisman, 2020)

1. Place patient in a supine position
2. Clinician #1 abducts shoulder to 90° and flexes elbow to 90° (neutral rotation)
3. Clinician #2 uses a strap or towel around the patient's torso/axilla to apply countertraction
4. Clinician #1 applies traction to humerus, with strap at elbow and around clinician's torso

FINGER DISLOCATIONS - PROXIMAL INTERPHALANGEAL (PIP) JOINT

Dorsal Dislocation (Exaggeration Method) (Taqi & Collins, 2024)

1. Palpate the deformity and determine the direction of the dislocation
2. Place the hand in a pronated position
3. Manually stabilize the proximal phalanx
4. Apply slight extension (exaggerate deformity) and longitudinal traction to middle phalanx
5. Simultaneously apply pressure to the proximal phalanx in a dorsal direction

Volar Dislocation (Taqi & Collins, 2024)

1. Palpate the deformity and determine the direction of the dislocation
2. Place the hand in a pronated position
3. Apply mild traction with the PIP and MCP joints in slight flexion

POSTERIOR ELBOW DISLOCATIONS - HUMEROULNAR JOINT

Supine (Traction-Countertraction) Technique (Gottlieb & Schiebout, 2018)

1. Patient can be seated or supine, with elbow at 90° and forearm supinated
2. Clinician #1 grasps wrist with one hand and forearm/elbow with other hand
3. Clinician #2 stabilizes mid/distal humerus to apply countertraction
4. Clinician #1 applies longitudinal traction to the forearm while manipulating the olecranon with the other hand
5. If not successful, apply slight flexion to the elbow while applying traction to the proximal volar aspect of the forearm

Prone (Modified Stimson) Technique (Gottlieb & Schiebout, 2018)

1. Patient is in a prone position with shoulder abducted and elbow at 90° hanging from table
2. Grasping the wrist, apply gentle traction and slight supination to the forearm
3. Using the other hand, apply pressure to the posterior aspect of the olecranon
4. *Can be performed with 2 providers: 1 applying traction, and 1 manipulating the olecranon

ANKLE DISLOCATIONS

Immobilize with Vacuum Splint

1. Select appropriate size splint to immobilize above and below the injury site
2. Evaluate neurovascular function distal to the injury if possible
3. Carefully place splint under and around the limb
4. Secure straps
5. Apply suction to remove air and mold the splint until it becomes rigid
6. Close the valve to keep air from entering the splint
7. Re-assess neurovascular function