

Chapter 5:

Dislocations

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Dislocation means to '*put out of place*' – to displace (bone) from normal connections with another bone.

A) Shoulder dislocation:

A shoulder dislocation occurs when the head of the humerus completely separates from the glenoid cavity of the scapula. Because the glenohumeral joint trades bony stability for maximum range of motion – resembling a golf ball sitting on a tee – it is the most frequently dislocated major joint in the human body.

• Classification

- **Anterior** (greater than 95% of cases): The humeral head is displaced forward and slightly downward, typically caused by a force driving the arm into extreme abduction, extension, and external rotation.

- **Posterior** (2% to 4%): The humeral head shifts backward. It is classically associated with seizures, electric shock, or a direct blow to the front of the shoulder.

- **Inferior** (Luxatio Erecta, less than 1%): The humeral head is driven downward below the glenoid, locking the arm in an upright, overhead posture.

• Clinical Signs

- **Deformity:** Loss of the normal rounded contour of the deltoid, giving the shoulder a flattened, "squared-off" appearance with a prominent acromion.

- **Pain and Splinting:** Severe localized pain; the patient typically holds the injured arm slightly abducted and supported by the opposite hand.

- **Neurological Deficit:** Numbness over the lateral deltoid (“regimental badge” area) if the axillary nerve is stretched or compressed.

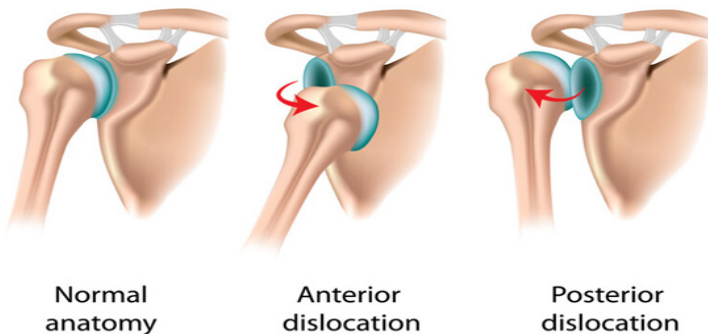
- **Management & Common Complications**

- **Diagnosis & Reduction:** Confirmed via orthogonal X-rays (AP and scapular Y or axillary views) to rule out associated fractures. Prompt closed reduction is performed using gentle traction techniques (such as the Cunningham, Stimson, or traction-countertraction methods) under analgesia or muscle relaxants.

- **Rehabilitation:** Brief immobilization in a sling followed by guided physical therapy to strengthen the rotator cuff and scapular stabilizers.

- **Associated Pathologies:** Recurrent instability is common in patients under 25. Structural damage often includes a Bankart lesion (tear of the anterior-inferior glenoid labrum) and a Hill-Sachs lesion (an impaction fracture of the posterior-lateral humeral head sustained during impact against the anterior glenoid rim).

Shoulder Dislocation



A) Hip dislocations :

Hip dislocations are named according to the direction of femoral head displacement.

Posterior – commonest

Anterior and Central dislocations are lesser commonly seen.

Posterior dislocation usually occurred as dashboard injury in road side accident, when someone seated in car or truck is thrown forward, while striking his knee with dashboard. (Dashboard injury) The femur is pushed upwards and femoral head is forced out of it's socket. It may be associated with a piece of bone from back of acetabulum. Seat belt application can reduce the number of these dislocations.

Clinical features: Patient may have leg is short and in a adducted, internally rotated and slightly flexed position. All cases should be assessed for sciatic nerve injury.

On X-rays, in AP view femoral head will be out of it's socket and above the acetabulum. It may be associated with fragment of acetabular rim or femoral head may be broken off and displaced. A CT scan is the best way to rule out and demonstrating the acetabular fractures.

Thompson and Epstein has classified these injuries into five types.

Type-1: Dislocation with no more than minor chip fractures

Type-2: Dislocation with a single large fragment of posterior acetabular wall

Type-3: Dislocation with comminution fragments of posterior acetabular wall

Type-4: Dislocation with fracture through acetabular floor

Type-5: Dislocation with fracture through acetabular floor and femoral head

Treatment: The dislocation must be reduced on emergent basis under anaesthesia. Mainly closed reduction are done and if after 2-3 attempts reduction is not achieved then open reduction is required.

Reduction Methods: While patients under anaesthesia, the assistant steadies the pelvis for counter traction and surgeon apply traction in the line of the femur as it lies (usually adduction and internal rotation), and then gradually flexes the patients hip and knee to 90 degree, while maintaining traction. In position of 90 degree hip flexion, traction is steadily increased with rotation (either internal or external) to achieve the reduction of hip. Another assistant can help by applying direct medial and anterior pressure to femoral head through buttock. A clunk sound is usually heard in case reduction is achieved.

Then hip should be test for it's stability. By flexing the hip to 90 degrees and applying a longitudinal and posterior directed force, the hip should be screened for any sign of subluxation. Reduction is usually stable in type -1 injury and hip should need to be rested for two weeks. Apply traction and maintain it for few weeks. The weight bearing is to be avoided for certain a period to prevent the collapse of femoral head, which may occur due to unsuspected avascular change.

If post reduction x-rays shows, intra articular bone fragments or larger femoral head pieces then CT scan should be performed to plan for further course of action.

All other dislocations should be treated by immediate open reduction and fixation or depending upon CT pictures. The indications for the surgery are instability, retained fragments or joint incongruity.

COMPLICATIONS: These are divided into early and late.

Early:

- **Sciatic nerve injury:** it is seen in 10-20% of patients. If after reduction, nerve injury has been detected then it should be explored for its entrapment .
- **Vascular injury:** Occasionally superior gluteal vessels is torn and bleeding is profuse.
- **Associated injury:** The femoral shaft fracture should be ruled out in all patients.

Late:

- **Avascular necrosis:** It has been reported in 10% of patients. If reduction is delayed by more than 12 hours then it's incidence rises to 40%. MRI or Bone scan are used to detect early changes. Ischaemia due to disruption of femoral head supply, when hip is dislocated. The consequences of ischaemia are proportional to delay in starting the treatment and reduction is delayed.
- **Myositis ossificans:** This is an uncommon complication.