Shoulder Dislocation

Shoulder ***dislocation*** is where the ball of the shoulder (***head of the humerus***) comes entirely out of the socket (***glenoid cavity of the scapula***).

Subluxation refers to a partial dislocation of the shoulder. The ball does not come fully out of the socket and naturally pops back into place shortly afterwards.

More than 90% of shoulder dislocations are ***anterior dislocations***. This is where the head of the humerus moves anteriorly (forward) in relation to the glenoid cavity. This can occur when the arm is forced ***backwards*** (posteriorly) whilst ***abducted*** and ***extended*** at the shoulder.

Posterior dislocations are associated with electric shocks and seizures.

Associated Damage

The ***glenoid labrum*** surrounds the ***glenoid cavity***. The labrum is a rim of cartilage that creates a deeper socket for the head of the humerus to fit into. When the shoulder dislocates, the labrum can tear along one edge.

Bankart lesions are tears to the anterior portion of the labrum. These occur with repeated anterior subluxations or dislocations of the shoulder.

Hill-Sachs lesions are compression fractures of the posterolateral part of the head of the humerus. As the shoulder dislocates anteriorly, the posterolateral part of the humeral head impacts with the anterior rim of the glenoid cavity. Part of the humeral head is damaged, making the shoulder less stable and at risk of further dislocations.

Axillary nerve damage is a key complication. The axillary nerve comes from the ***C5*** and ***C6*** nerve roots. Damage causes a ***loss of sensation*** in the "***regimental badge***" area over the ***lateral deltoid***. It also leads to motor weakness in the ***deltoid*** and ***teres minor*** muscles.

Fractures can occur alongside shoulder dislocations, affecting the:

- ***Humeral head***

- ***Greater tuberosity*** of the ***humerus***

Rotator cuff tears may occur with shoulder dislocations, particularly in older patients.

Presentation

Patients with a shoulder dislocation usually present after the **acute injury**. They will almost certainly be aware that the shoulder is dislocated. Shortly after the shoulder is dislocated, the muscles will go into spasm and tighten around the joint.

They will hold their arm against the side of their body. The deltoid will appear flattened, and the head of the humerus will cause a bulge and be palpable at the front of the shoulder.

It is important to assess patients with a shoulder dislocation for:

- Fractures
- Vascular damage (e.g., absent pulses, prolonged capillary refill time and pallor)
- Nerve damage (e.g., loss of sensation in the "regimental patch" area)

Apprehension Test

The ***apprehension test*** is a special test to assess for ***shoulder instability***, specifically in the ***anterior direction***. It is likely to be positive after previous ***anterior dislocation*** or ***subluxation*** of the shoulder. This may be performed after recovery from any acute injuries.

The patient lies **supine**. The shoulder is **abducted to 90 degrees**, and the **elbow is flexed to 90 degrees**. The shoulder is then slowly ***externally rotated*** in this position while watching the patient. As the arm approaches 90 degrees of external rotation, patients **with shoulder instability will become anxious and apprehensive**, worried that the shoulder will dislocate.

Investigations

X-rays may be used in an acute presentation to confirm a dislocation and exclude fractures. X-rays are performed after reduction to confirm the shoulder is reduced and assess for fractures.

MRI scan of the shoulder. This can be used to assess the shoulder for damage (e.g., ***Bankart*** and ***Hill-Sachs lesions***) and planning for surgery.

Arthroscopy involves inserting a camera into the shoulder joint to visualise the structures.

Acute Management

Ideally, the shoulder should be relocated as soon as safely possible. Muscle spasm occurs over time, making it harder to relocate the shoulder and increasing the risk of neurovascular injury during relocation.

There are various options for closed reduction of shoulder dislocations. The most common one is the traction-countertraction method

Ongoing Management

There is a high risk of ***recurrent dislocations***, particularly in younger patients.

Physiotherapy is recommended to improve the function of the shoulder and reduce the risk of further dislocations.

Shoulder stabilisation surgery may be required to improve stability and prevent further dislocations. This may be an arthroscopic or an open procedure. Underlying structural problems are corrected, such as:

- Repairing Bankart lesions

Recurrent instability and dislocations can occur in up to 20% of patients after surgery.

Rotator Cuff Tears

Rotator cuff tears refer to injury to the tendons of the rotator cuff muscles. The tendon may be partially or fully torn.

Tears of the rotator cuff can occur due to an **acute injury** (e.g., a fall onto an outstretched hand) or degenerative changes with age. They may be related to overhead activities, such as playing tennis or overhead construction work.

Basic Anatomy

The rotator cuff is made of four muscles, each with a specific action at the shoulder (mnemonic is SITS):

- **S** – ***Supraspinatus*** – ***abducts*** the arm
- **I** – ***Infraspinatus*** – ***externally rotates*** the arm
- **T** – ***Teres minor*** – ***externally rotates*** the arm
- **S** – **S*ubscapularis*** – ***internally rotates*** the arm

Presentation

Rotator cuff tears may present either with an acute onset of symptoms after an acute injury, or with a gradual onset of symptoms. Patients typically present with:

- Shoulder pain
- Weakness and pain with specific movements relating to the site of the tear (e.g., abduction with a supraspinatus tear)

Patients may find it difficult to get comfortable at night due to pain in the shoulder, disrupting sleep.

Investigations

X-rays will not show soft tissue injuries such as rotator cuff tears. They may be helpful for excluding bony pathology, such as osteoarthritis.

Ultrasound or ***MRI scans*** can diagnose a rotator cuff tear.

Management

Patients with degenerative rotator cuff tears may be managed conservatively, particularly where they are at increased risk of complications from surgery. Active or young patients and those with acute or full-thickness tears are more likely to be managed with surgery. Surgery may be used where physiotherapy fails.

Non-surgical options are:

- ***Rest*** and ***adapted activities***
- ***Analgesia*** (e.g., NSAIDs)
- ***Physiotherapy***

There are many options for surgical management, depending on individual factors. The main option is ***arthroscopic rotator cuff repair***, where the tendon is reattached to the bone during an ***arthroscopy*** (keyhole surgery).