

Chapter 8

Shoulder Dislocation



The shoulder is the most commonly dislocated joint in the body. The main stabilizers of the shoulder joint are the ligaments and the capsule complex. Multiple ligaments are present, but the inferior glenohumeral ligament is the most important and the one most commonly injured during an anterior shoulder dislocation. Approximately 95% of shoulder dislocations result from a major traumatic event, and 5% result from atraumatic causes. Anterior shoulder dislocation is by far the commonest type of dislocation and usually results from forced abduction, external rotation and extension.

An anteroposterior (AP) view of the shoulder and an axillary lateral view are done. If an axillary lateral radiography cannot be obtained, then a scapular Y view may be taken in its place (Fig. 8.1).

Anterior dislocations can be further divided according to where the humeral head comes to lie (Fig. 8.2):

- Subcoracoid—most common
- Subglenoid
- Subclavicular
- Intrathoracic—very rare

In most of those, the head of the humerus comes to rest under the coracoid process, referred to as subcoracoid dislocation. Subglenoid, subclavicular, and, very rarely, intrathoracic dislocations may also occur. Inferior dislocation is the least likely, occurring in less than 1%. This condition is also called

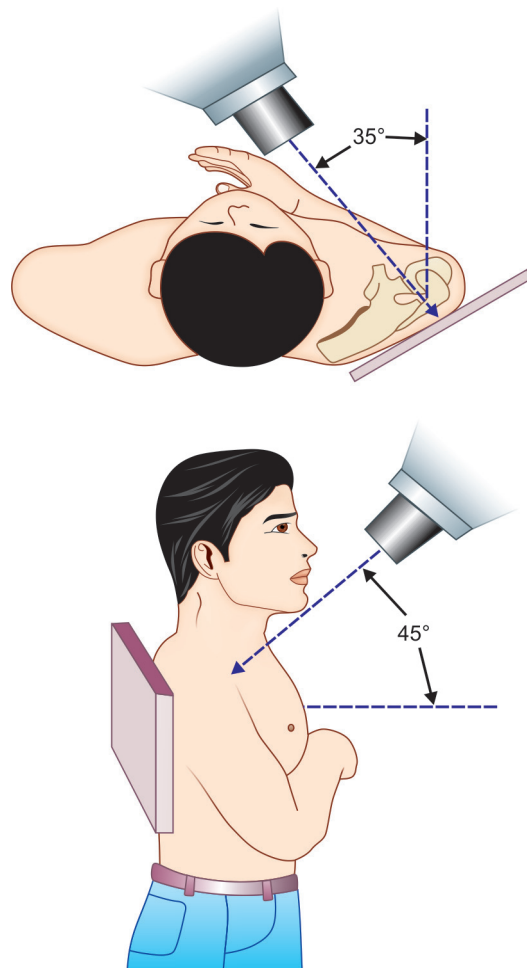


Fig. 8.1: Positioning for X-rays of shoulder

luxatio erecta because the arm appears to be permanently held upward or behind the head.

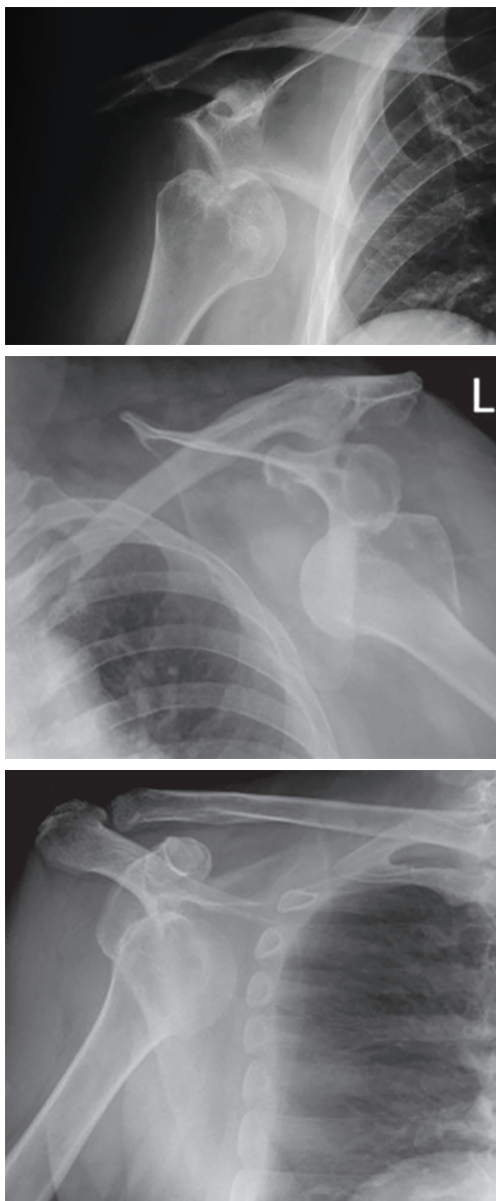


Fig. 8.2: X-rays showing anterior dislocation of shoulder

Approximately 25% of shoulder dislocations have associated fractures.

CLOCKWISE APPROACH TO LABRAL PATHOLOGY

(Figs 8.3 and 8.4)

A clockwise approach to the labrum is the easiest way to diagnose labral tears and

to differentiate them from normal labral variants.

There are two types of labral tears: SLAP tears and Bankart lesions.

- SLAP is an acronym that stands for superior labral tear from anterior to posterior.
- SLAP tears start at the 12 o'clock position where the biceps anchor is located, which tears the labrum off the glenoid.
- SLAP tears typically extend from the 10 to the 2 o'clock position, but can extend more posteriorly or anteriorly and even extend into the biceps tendon.
- Bankart lesions are typically located in the 3–6 o'clock position because that's where the humeral head dislocates.

Hill-Sachs Lesion

On MRI scan, a Hill-Sachs defect is seen at or above the level of the coracoid process.

- Hill-Sachs is a posterolateral depression of the humeral head.
- It is above or at the level of the coracoid in the first 18 mm of the proximal humeral head.
- It is seen in 75–100% of patients with anterior instability.

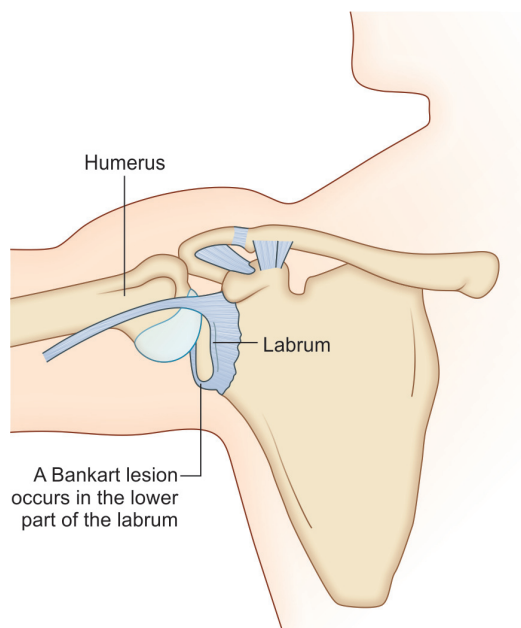


Fig. 8.3a: Bankart lesion

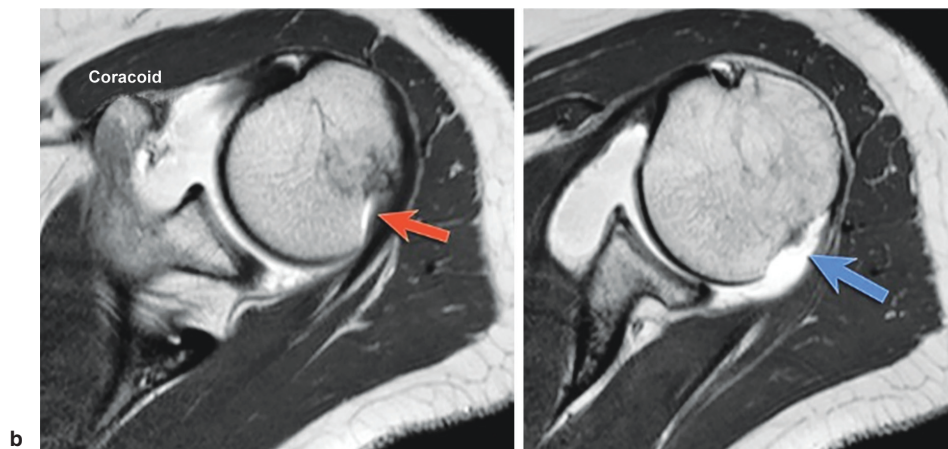
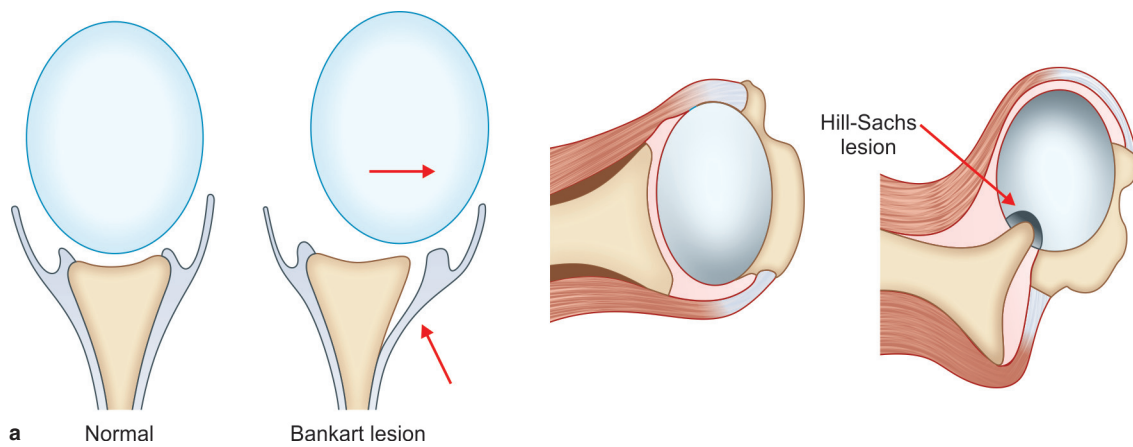
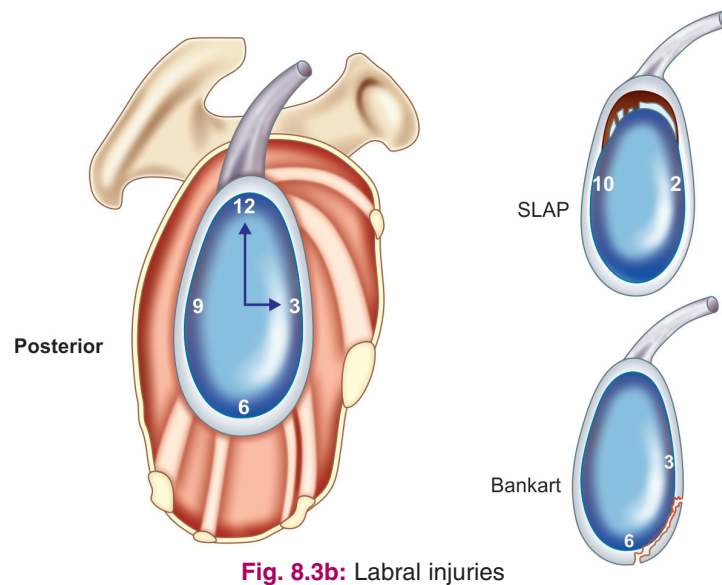


Fig. 8.4a and b: (a) Labral pathology; (b) MRI of shoulder

Posterior Dislocation

Posterior shoulder dislocations are relatively uncommon, comprising only 2–4% of all shoulder dislocations. Thus, posterior dislocations often go undiagnosed, and can lead to severe consequences. Approximately half of posterior shoulder dislocations go undiagnosed on initial presentation. Posterior shoulder dislocations are classically associated with seizures, electrocution and severe trauma. The highest incidence of posterior dislocation is in males between the ages of 35 and 55. Typically the arm is held in internal rotation and adduction. The most significant finding on examination is a limited range of active and passive external rotation of the effected arm as the head of the humerus is caught to the glenoid rim. Palpation of the humeral head in a posterior position is the only other clear diagnostic feature on examination. Other physical signs such as increased prominence of the coracoid process and acromion anteriorly, and the head of humerus posteriorly may be present but are less significant.

The AP view of the normal shoulder demonstrates the normal asymmetry of the humeral head in anatomic position. The larger portion is on the medial side, seated in the glenoid fossa. With internal rotation in the setting of a posterior dislocation, this larger portion rotates out of view producing the rounder and symmetric “light bulb sign” of the humeral head. Other signs include the rim sign (>6 mm gap between the medial humeral head and anterior glenoid rim), the trough sign/reverse Hill-Sachs lesion (compression fracture of anteromedial humeral head), or fracture of the lesser tuberosity.

Several radiological signs have been described on AP view, these include:

- *Light bulb sign*: The head of the humerus in the same axis as the shaft producing a light bulb shape (Fig. 8.5).
- Internal rotation of the humerus

- The ‘rim sign’—widening of the gleno-humeral space
- The vacant glenoid sign—where the anterior glenoid fossa looks empty.
- The ‘trough’ sign—a vertical line made by the impression fracture of the anterior humeral head.

Treatment of Anterior Shoulder Dislocation

Traditional reduction techniques such as Hippocrates’ and Kocher’s are rarely used anymore.

Various manoeuvres described include:

- Hippocratic method—in which the surgeon puts his foot in the armpit of the patient and applies traction with his hands (Fig. 8.6).
- Kocher’s method—in which the surgeon first applies traction to the limb followed by external rotation, then adduction and lastly internal rotation. The dislocation should reduce at the point of adduction and then only should the limb be internally rotated. If this is not followed, then fracture of the humerus can occur.
- Stimson’s method—in which the patient is made to lie on his belly and the dislocated

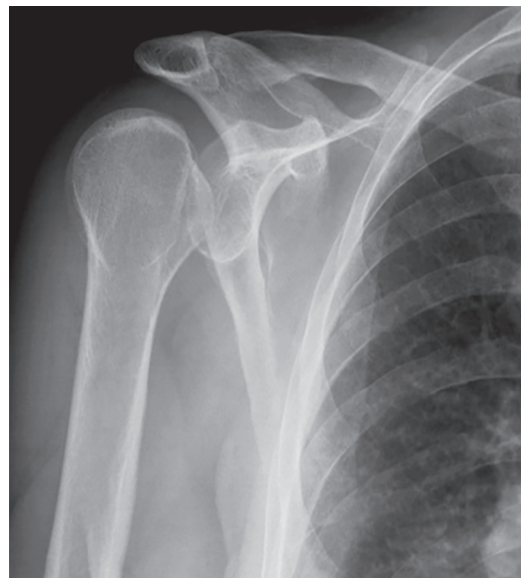


Fig. 8.5: Light bulb sign



Fig. 8.6: Closed reduction technique

limb is allowed to hang down by the edge of the table by a weight.

- Traction and countertraction method is similar to Hippocratic method except for the surgeon using his foot, an assistant provides countertraction by a sheet of folded cloth across the armpit and chest wall.

After manipulation, the reduction is confirmed by X-rays.

Now the limb is immobilized in a position of adduction and internal rotation in anterior dislocations by strapping the arm to the front of the chest (Fig. 8.7).

In posterior dislocations, the position is of slight external or neutral rotation by a handshake cast.

The duration of immobilization lasts for three weeks after which physiotherapy is started to regain strength and range of motion.

Scapular Manipulation

The patient may be sitting up or lying prone. The health-care professional attempts to rotate the shoulder blade, dislodging the humeral head, and allowing spontaneous relocation. An assistant may be needed to help stabilize the arm.

External Rotation (Hennepin Manoeuvre)

With the patient lying flat or sitting up, the healthcare professional flexes the elbow to 90°



Fig. 8.7: Shoulder immobilizer

and gradually rotates the shoulder outward (external rotation). Muscle spasm may be able to overcome after 5 to 10 minutes of gentle pushing, allowing the shoulder to spontaneously relocate. The Milch technique adds gentle lifting of the arm above the head to achieve reduction.

Traction Countertraction

With the patient lying flat, a sheet is looped around the armpit. While the healthcare professional pulls down on the arm, an assistant, located at the head of the bed, pulls on the sheet to apply countertraction. As the muscles relax, the humeral head is able to return to its normal position.

A sling or shoulder immobilizer may be used as a reminder not to use the arm and allow the muscles that surround the joint to relax and not have to support the bones against gravity. The length of time a sling is worn depends upon the individual patient. A balance must be reached between immobilizing the shoulder to prevent recurrent dislocation and losing range of motion, if the shoulder has been kept still for too long.

In patients who suffer multiple dislocations or those who participate in contact sports, surgery is an option. The procedure involves

repairing the labrum and capsule back to the glenoid so that the shoulder does not dislocate. The surgical procedure is usually able to be performed arthroscopically in an outpatient setting.

Complications

Recurrent instability.

Nonoperative treatment: Higher incidence of instability in younger patients with acute traumatic dislocations; 90% in athletic patients <20 years; 15% in patients >40 years; glenoid rim fractures.

- Axillary nerve palsy
- Brachial plexus palsy
- Axillary artery injury
- *Osteonecrosis:* Rare; generally associated with fracture dislocations.

Quick Facts

- >90% are anterior dislocations. <3% posterior dislocations.
- 85% associated with Bankart lesion.

- Anterior dislocations generally result from forced external rotation or extension in an abducted and externally rotated arm.
- *Posterior dislocations:* Associated with epileptic seizures, high-energy trauma, electrocution, or electroconvulsive therapy. Seizures may be associated with hypoglycaemia (diabetes) or drug withdrawal.
- Consider primary anteroinferior glenohumeral instability repair for highly athletic young (<25 years) patients with MRI confirmed Bankart lesion.
- Immobilization in 30° of external rotations has shown a decreased recurrence rate.

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