

ANTERIOR SHOULDER DISLOCATION



Norma Shearer, c.1930, MGM.

Now largely forgotten, Norma Shearer was one of MGM's and Hollywood's biggest screen stars of the 1930s. She is pictured here in a "glamour" pose typical of the period, the seductive look with one hand placed over the shoulder.

Patients, who have suffered an anterior shoulder dislocation, will also typically support their injured shoulder with their other arm. Their "look", unlike Ms Shearer, however will generally be one of distress rather than seduction!

ANTERIOR SHOULDER DISLOCATION

Introduction

Anterior shoulder dislocation is a common injury and is the commonest form of shoulder dislocation.

The key to smooth reduction will be good analgesia, sedation and muscle relaxation.

Following reduction physiotherapy will be an important follow up treatment.

Mechanism

Anterior shoulder dislocations usually result from abduction, extension, and external rotation forces.

In anterior shoulder dislocation the shoulder lies in front of the glenoid.

It is by far the most common type of shoulder dislocation, (the others being posterior, where the shoulder lies posterior to the glenoid and the rare luxatio erecta, where it lies beneath the glenoid.)

Clinical Features

1. Pain is usually severe.
2. The patient usually refuses all movements and supports the injured limb.
3. There is a flattening of the normal rounded contour of the lateral deltoid margin.
4. There is a lateral prominence of the acromion process.

Complications:

1. Axillary nerve damage with deltoid paralysis and loss of sensation over the lower half of the deltoid.
2. Compression of the axillary artery leading to ischemia of the upper limb.
3. Rarely compression of the posterior cord of the brachial plexus with radial nerve paralysis.
4. Relatively common associated fractures include:
 - Surgical neck fractures of the humerus
 - Fractures of the greater tuberosity of the humerus
 - Bankart lesions:
 - ♥ This is a fracture of the glenoid labrum, which may simply include the cartilage only or may include a rim of bone.
 - ♥ If cartilage only is involved then a CT or MRI will be needed to diagnose it.

- ♥ This injury will predispose to recurrent dislocations.
- Hill-Sachs deformity:
 - ♥ This is a “hatchet” shaped deformity in the postero-lateral aspect of the humeral head. It is an impaction fracture caused by compression against the anterior bony rim of the glenoid.
 - ♥ It is best seen on an AP view with the arm in internal rotation.
 - ♥ This injury is more likely to be seen with recurrent dislocations.

Investigations

In most cases a radiograph should be done to confirm the diagnosis, especially in cases of trauma, as there may be unexpected associated bony fracture.

In cases of spontaneous dislocation, a confirmatory radiograph may not be required, depending on the clarity of the clinical picture.

Plain radiography:

1. AP view:
 - The diagnosis can usually be readily made on this view alone.
 - There is loss of the normal congruity between the humeral head and the glenoid.
 - The humeral head will be displaced inferiorly, medially and anteriorly.
2. Axillary Lateral view:
 - On this view the humeral head lies anterior (toward the clavicle) to the glenoid.
 - The center of the humeral head lies anterior to the Y shaped “Mercedes Benz” point. (This is the point formed by the junction of spine of the scapula, the coracoid and the body of the scapula)

CT Scan:

If the results of plain radiography are equivocal yet strong clinical suspicion remains, a CT scan may be done to confirm the diagnosis.

A CT scan may be required to more fully assess more complex injuries

MRI:

This may be required to diagnose associated cartilaginous or ligamentous injury.



Above: Typical anterior shoulder dislocation showing anterior, medially and inferiorly displaced humeral head.



Above Left: Lateral shoulder radiograph of an anterior dislocation of the right shoulder. The head of the humerus lies anterior to the “Mercedes Benz” point of the scapular.

Above Right: Normal lateral shoulder joint radiograph, showing the head of the humerus normally situated at the center of the “Mercedes Benz” point.



Above, Hill-Sachs lesion

Management

1. Reductions should be done in resuscitation cubes with ECG and pulse oximetry monitoring whilst the patient is sedated.
2. Analgesia:
 - Obtain IV access, and give IV opioid analgesia as clinically indicated.
3. Sedation:

The key to smooth reduction will be good analgesia, sedation and muscle relaxation. Requirements may be minimal in some, others may require relatively more sedation.

Drug options for reduction sedation include:

- Nitrous oxide
 - IV fentanyl and IV midazolam
 - IV ketamine
 - IV Propofol
4. Methods of reduction

A range of methods of reduction exist for reduction of anterior shoulder dislocations.

Examples include:

The “Spaso” technique:

- Lift the arm vertically, applying traction.
- An assistant may need to apply some counter force to keep the patient on the bed.
- Externally rotate the shoulder.
- Occasionally pushing on the humeral head may also be necessary, whilst maintaining traction.

Kocher’s technique:

- In line traction is applied to the arm.
- Assistant applies counter traction towel under the patient’s axilla.
- Externally rotate the arm with the elbow kept flexed, (90 degrees rotation is possible)
- If reduction has not occurred, keep the external rotation applied and adduct the elbow across the chest toward the midline.
- Finally, internally rotate the shoulder, bringing the patient’s hand toward the opposite shoulder.

Reduction may occur during any of the above 4 maneuvers.

5. Following reduction, close observation will be necessary in the resuscitation cube until the patient is fully awake.
6. Once the patient is awake they should have a broad arm sling, given analgesia and discharged home in the care of a friend / relative.

Disposition

- Follow-up physiotherapy is important for these injuries.
- Cases of recurrent dislocation should be considered for referral to the orthopaedic unit, for possible preventative surgical intervention.

References

1. McRae R, Practical Fracture Treatment 3rd ed, p.105-110.
2. Miljesic S, Kelly AM, Reduction of Anterior Dislocation of the Shoulder: the Spaso Technique. Emergency Medicine vol 10 no.2 June 1998, p.173-175.
3. Diagnostic Imaging Pathways at www.imagingpathways.health.wa.gov.au

Dr J Hayes

Reviewed October 2010