

Introduction

Shoulder is relatively unstable but very mobile joint. Articulation is between the head of the humerus and the shallow glenoid cavity of the scapula. The glenoid cavity is deepened by the glenoid labrum (a fibrocartilagenous rim). The joint capsule surrounds the shoulder joint. The rotator cuff muscles are important for protecting the joint and adding to stability.

Mechanism

- Usually anterior (95-98%) or posterior (~1%)
- Inferior (luxatio erecta), superior and intrathoracic dislocations are rare.
- Almost invariably traumatic. Fall with a combination of abduction, extension and ext rotation. FOOSH common in elderly. Occasionally due to a direct blow.
- It may result (esp posterior) from an epileptic fit or electrocution or lightning injury.

Posterior dislocation

- Less obvious on examination and can be missed.
- Usually arm adducted and internally rotated. Unable to supinate.
- May have posterior bulge with humeral head palpable below the acromion.
- Nerve and vascular injury are not common.
- On AP humeral head may be like a lightbulb (cf walking stick normally) due to int rotation.
- Reduce with traction on arm at 90° abduction ± ext rot. Sling. OT if irreducible.

Luxatio erecta

- Fixed hyperabducted arm. glenoid or humeral head/greater tub # often.
- Urgent reduction with traction & int/ext rot rocking.

Anterior dislocation

- Arm held at side in external rotation.
- Shoulder squared off. Anterior bulge (humeral head) may be seen/palpable.
- Abduction and internal rotation are resisted.
- Humeral head, neck or greater tuberosity # can occur.

Complications

- Axillary nerve damage
- Brachial plexus, radial and other nerve damage
- Axillary artery damage
- Associated # (30% of cases) e.g. humeral head, greater tuberosity, clavicle, acromion
 - Risks: Age >40, 1st disloc, high energy impact (MVA, fall >3m), assault
- Recurrent shoulder dislocation
- Anatomical lesions:
 - *Bankart lesion*: avulsion of the anteroinferior glenoid labrum + tear of joint capsule
 - *Hill-Sachs lesion*: posterolateral humeral head compression # by glenoid. Occurs in 35-40% of anterior dislocations and up to 75% of recurrent dislocations.
- Rotator cuff injury

X-rays

AP plus an axillary or transcapular 'Y' view to document ant dislocation and any #:

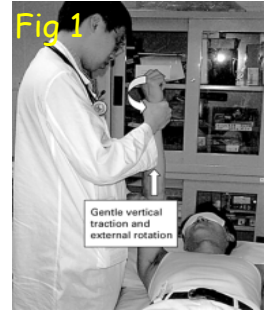
- Humeral head under the coracoid process on the AP view.
- Axillary view shows humeral head (golf ball) anterior to the glenoid (the tee).
- Humeral head lies anterior to glenoid (centered on the 'Y') in the transcapular 'Y' view.

Management

- Check radial pulse & nerve fn (wrist/digit extension, sensation dorsum 1st web space).
- Check sensation in lateral upper arm (badge) area for axillary nerve function
- A fracture dislocation will probably require surgery. Otherwise closed reduction.

Reduction methods

- Adequate relaxation & analgesia ± sedation (propofol has higher success rate than opiate/BDZ and shorter ED LOS) are usually essential.
- **Hippocratic method:** Traction with foot in axilla. Painful, discouraged.
- **Kocher's method:** Discouraged (Cx #labrum, humerus or capsule tear)
 - Adduct arm, flex elbow to 90°, ext rotate until resistance, lift arm in sagittal plane & finally, internally rotate slowly.
- **Spaso method:**
 - Patient supine, arm lifted vert + traction, slight ext rot. [Fig 1].
- **Cunningham method:** No traction/sedation required. Patient seated upright with shoulders up+back & chest out. Fully adduct arm & flex elbow + hand on shoulder of Dr who holds forearm with 1 hand & massages biceps, deltoid & trapezius with other.
- **Scapular rotation method:**
 - Patient prone. Manual/5kg traction to wrist. After relaxed, rotate inf tip of the scapula med & sup aspect laterally. [Fig 2].
- **Stimson's technique:**
 - Arm over edge of bed, 5-10kg hung for 20min. Gentle int/ext rot.
- **FARES (FAST, RELIABLE & SAFE) method:**
 - Dr grips hand of supine patient's adducted extended arm (thumb up). Gentle traction whilst arm is slowly abducted and oscillated ant/post. At 90° abduction Dr gently ext rotates arm until palm faces up. At ~120° abduction reduction occurs.
- **Milch method:**
 - Patient supine. Dr's hand on shoulder with thumb pushing up under humeral head. Abduct humerus to 180°, then ext rot. ± push up with thumb to aid relocation.
- **Modified Milch method:**
 - Dr behind seated patient, hand on shoulder/trapezius fixing scapula. Abduct to 100° and ext rot as lifted.
- **External rotation method:**
 - Patient supine. Arm adducted and flexed to 90° at elbow, then arm is slowly externally rotated. [Fig 3].



Care after closed reduction

- Post-reduction XR & neurovascular assessment should be repeated.
- Observation if longer-acting sedating agents such as midazolam have been used.
- Immobilise 3-4 weeks if 1st disloc else a few days. Ext rot position ?best but impractical.
- Adequate analgesia should be given to the patient to take home.
- Physiotherapy is usually commenced.

Surgical intervention

- Primary surgical repair: Cochrane supported for young adults for 1st acute traumatic shoulder dislocations and who will continue demanding physical activity e.g. sports
- If a tear in the capsule prevents stable reduction or soft tissue intervenes to prevent it.

Recurrent dislocation (Incid ↓with ↑age: <20y = >70%, 20-40y = 25-50%, >40y = <10%)

- Dislocation of the shoulder is often associated with damage to the rotator cuff, joint capsule or # (as in Bankart and Hill-Sachs lesions) →instability & recurrence.