Instability following Anterior Shoulder Dislocation

Taken from Robinson & Dobson (Edinburgh), *JBJS (Br)* 2004

- Commonly affects young males with primary dislocation during contact sports/trauma
- Recurrent instability of 75% to 80% among individuals aged between < 20 years and of 50% in those aged between 20 to 30 years. Instability declines thereafter with a second peak in middle-age / elderly where it is associated with cuff tears
- Risks also rise in patient with fracture Bankart and Hill-Sachs lesions
- Re-dislocation is rare if the greater tuberosity is fractured, but these patients typically have a more protracted recovery, secondary to cuff dysfunction and impingement.
- *Standard method of treatment of an initial traumatic dislocation is non-operative and open repair is used to treat most patients with recurrent traumatic instability.*

Pathological Anatomy

- TUBS = traumatic, unilateral, with a Bankart lesion → typically need surgery
- AMBRI = atraumatic, multidirectional, commonly bilateral → treated with rehabilitation (or inferior capsular shift in refractory cases)
- 3rd group are the voluntary dislocaters who are usually treated non-operatively with rehabilitation, education and biofeedback.
- Bankart Lesion:
  - Avulsion of the capsule-labrum complex inferior to the glenoid equator does not cause instability in isolation
  - Often associated with plastic deformity of the antero-inferior structures and *inferior glenohumeral ligament*, which hold humeral head in place during at risk manoeuvres of abduction and external rotation
  - Therefore treat with combined repair of Bankart lesion, and re-tensioning of the antero-inferior capsule-ligamentous complex
  - CT study showed 50% of regular dislocaters had a bony Bankart lesion (avulsion of the osseous glenoid rim), which if 20% of the length of the glenoid has been shown cadaverically to cause instability
- Other lesions implicated in instability:
  - Hill-Sachs lesion if large and involving 30% of humeral articular surface
  - HAGL lesion = humeral avulsion of glenohumeral ligaments
  - ALPSA lesion = anterior labroligamentous periosteal sleeve avulsion, which then heals medially onto scapula neck allowing excessive translation of humeral head
  - SLAP lesion = superior labrum anterior & posterior detachment
  - Rotator cuff interval defects
Initial Management
- ATLS protocol if needed ± AMPLE history
- Appropriate imaging
- Check and document axillary nerve and distal neurovascular status
- Reduction for example using Hippocratic technique under sedation – potential risk of causing a fracture, so in cases of fracture-dislocation should be done under Image Intensifier.
- Check x-rays and post-manipulation neurovascular status
- Immobilise in sling for 2-3 weeks in:
  - Safe zone with arm flexed, internally rotated and adducted against trunk
  - External rotation to approximate any Bankart lesion to the neck of the glenoid to reduce instability (Itoi E, New Orleans 2003)

Primary Surgery
- Arthroscopic lavage and clearance of effusion/haematoma improved anatomic healing
- Repair of Bankart lesion to the de-corticated rim of the glenoid
- Usually within 2 weeks of injury – an expensive and challenging service!
- Problems:
  - Can be more challenging in acute injury
  - Difficult to visualise due to haemarthrosis, synovitis
  - Extravasation of arthroscopy fluid due to capsule tear
  - Contra-indications: “red out”, HAGL lesion, bony Bankart
- Results:
  - No improvement in terms of shoulder pain, ROM and function comparing early primary arthscopic repair to non-operative method
  - 5-fold reduction in recurrent instability (13% vs. 80% non-operative)
  - No better outcome in terms of recurrent instability when comparing repair for 1st time dislocaters to those with established instability.
- Recurrent Instability
- Identify the TUBS from the AMBRI and Voluntary groups, as only these need surgery 1st line
- Open Surgery:
  - Better outcome in respect to subsequent instability
  - Deltopetalor approach with T-shape incision to anterior capsule
  - Bankart repair with placation to tighten the anterior casulo-ligamentous complex
  - Beware over-tightening to prevent restricted external rotation
  - Bristow-Haflet = coracoid osteotomy and fixation to antero-inferior rim of glenoid
- Arthroscopic repair
  - With accompanying thermal shrinkage of anterior capsule or tightening by superior advancement of labrum during repair
  - On its own recurrence rates are high, but with a separate tightening procedure recurrence of instability approximates open repair outcome (7% recurrence)
- Factors associated with failure:
  - Bony Bankart lesion, or large Hill-Sachs lesion
- HAGL lesion
- Excessive glenoid retroversion or inadequate retroversion of humeral head
- Younger age at surgery
- Non-compliance with immobilisation
- Early return to contact sports

- Complications:
  - Implant failure
  - NV injury
  - Infection
  - Adhesive capsulitis (arthroscopic)
  - Synovial fistula (arthroscopic)
  - Injury to the suprascapular nerve and pain from the posterior knot after ransglenoid repair