Key points review
Anterior shoulder instability

The most common mechanism of injury is a fall onto an outstretched arm with the shoulder abducted and externally rotated.

In this position, the IGHL is the primary restraint to anterior translation of the humeral head. Injury to this ligament and the anteroinferior labrum, termed a Bankart lesion, can occur and has been reported in as high as 90% of traumatic anterior shoulder dislocations.
Risk factors for recurrence after Bankart repair
a systematic review

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• Epidemiological parameters:
  • age below 22 years old
  • male gender
  • number of preoperative dislocations
  • participation in competitive sports.

• Surgical parameters:
  • repair with fewer than 3 anchors
  • the use of knotless anchors.

• The pathoanatomical factors:
  • substantial associated glenoid or humeral head bone loss
  • presence of anterior labro-ligamentous periosteal sleeve avulsion.

The failure to recognize and treat glenohumeral bone deficiency is the most common cause of failure after arthroscopic Bankart repair.

A minimum of 3, but preferably 4 or more, anchors should be placed for an adequate Bankart repair.
An anterior glenoid bone loss of 17.3% or more with respect to the longest anteroposterior glenoid width should be considered as the critical amount of bone loss that may result in recurrent glenohumeral instability after arthroscopic Bankart repair.
• **Buford complex** is a congenital *glenoid labrum variant* where the anterosuperior labrum is absent in the 1-3 o'clock position and the *middle glenohumeral ligament* is thickened (cord-like).

• It originates directly from the superior labrum adjacent to the bicipital labral complex and inserts onto the articular surface of the *subscapularis* tendon. It is present in 3% of individuals.
Pic 1: “Double shadow “of humeral Head pathognomic of head split fractures
- Hemiarthroplasty for proximal humerus fractures
- Hemiarthroplasty is the most common choice for arthroplasty, but RTSA is increasing in popularity.

- Tuberosity healing is critical for a successful outcome after hemiarthroplasty; the presence of any factors that make this difficult may indicate the need for RTSA. In the presence of severe tuberosity or metaphyseal comminution, comorbidities that would decrease tuberosity healing, cuff tear arthropathy, or a failed hemiarthroplasty, RTSA is preferred over hemiarthroplasty.

- The bicipital groove is a critical landmark. The fracture line between the tuberosities is almost always located just posterior to the groove. The first part of the procedure involves getting control of the tuberosity fragments.

- The tuberosities are tagged with heavy sutures. The humeral component is cemented in place with approximately 20°–30° of retroversion. Tuberosities healing anatomically, is initially dependent on suture fixation. The greater tuberosity is fixed 0.5 cm distal to the top of the humeral head.
- reverse shoulder arthroplasty indications:
  - cuff-tear arthropathy
  - Pseudoparalysis
  - antero-superior escape
  - proximal humerus fractures in the elderly
    - 3 or 4-part fractures in patients age > 70
    - head-splitting fractures
    - significant osteopenia or poor bone quality
      - where GT has poor potential for healing
  - rotator cuff insufficiency equivalent
    - non-union or mal-union of the tuberosity following trauma or prior arthroplasty
  - rheumatoid arthritis

  patient characteristics (in clinical conditions above) low functional demand patients
  - physiological age >70
  - sufficient glenoid bone stock
  - working deltoid muscle
    - intact axillary nerve
• The accurate diagnosis of associated injuries after traumatic anterior shoulder dislocation in patients older than 60 is critical for the recovery of shoulder function.

• More than half of patients had rotator cuff tears or anterior capsulolabral lesions, which may lead to recurrent shoulder dislocation or shoulder disfunction.


**Treatment of traumatic anterior shoulder dislocation in patients older than 60 years**

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• Scapular winging

• defined by the direction of the superomedial corner of the scapula

• medial scapular winging
  • Etiology: dysfunction of the serratus anterior (long thoracic nerve)
  • Epidemiology: young athletic patient
  • more common than lateral

• lateral scapular winging
  • Etiology: dysfunction of the trapezius (cranial nerve XI - spinal accessory nerve)
  • Epidemiology: usually iatrogenic (history of neck surgery)
• **CRPP (closed reduction percutaneous pinning)** indications

  • Fractures of the surgical neck, tuberosity fractures, and valgus impacted fractures
  • in patients with good bone quality, minimal metaphyseal comminution, and intact medial calcar

• outcomes

  • considerably higher complication rate compared to ORIF, HA, and RSA
    • axillary nerve at risk with lateral pins
      (pins are located at an **average of 3 mm from the anterior branch of the axillary nerve**)
    • musculocutaneous nerve, cephalic vein, and bicep tendon at risk with anterior pins
Massive rotator cuff tear

• Historically a massive rotator cuff tear has been described as a tear with a diameter of 5 cm or more or as a complete tear of two or more tendons.
• MRI-based classification: defined a massive tear as one with a coronal length and sagittal width greater than or equal to 2 cm.

• In addition to the number of tendons involved, at least one of the two tendons must be retracted beyond the top of the humeral head.

Partial cuff repair

• Although shoulder strength may not improve after this intervention, BUT function is usually enhanced because of relief from pain caused by mechanical impingement. Additionally, although complete healing of massive tears is not always achievable, we believe that partial healing of the cuff may prevent secondary extension of the tear.
• the procedure is indicated for patients with a symptomatic irreparable rotator cuff tear, who do not have a significantly degenerative glenohumeral joint but possess a fully functioning deltoid.

• the best clinical outcomes are obtained in patients in whom subscapularis is intact, therefore suggesting that patients should also have either an intact subscapularis or repairable subscapularis tear.

• it was found that the AHD (acromio-humeral distance) and ASES score and VAS pain scores were improved.