

AN INTRODUCTION INTO INSTABILITY OF THE SHOULDER

TRAUMATIC VS. ATRAUMATIC

- Shoulder instability is classified as either traumatic or atraumatic based on the mechanism of injury.
- The shoulder most commonly dislocates in the anterior direction from an acute traumatic event that results in stretching and detachment of the anterior capsule and labrum.
- Atraumatic instability of the shoulder occurs from chronic micro-repetitive injuries, such as when a person is involved with overhead sports or associated with generalised soft-tissue laxity.

WHY IS THIS IMPORTANT?

- Traditional treatment for both injuries has been a conservative approach, consisting of immobilisation, rehabilitation, and a delay in return to vigorous activity.
- This treatment is often quite successful in preventing recurrent dislocations in the patient with atraumatic (Multidirectional) instability.
- However, those patients who suffer an acute traumatic anterior dislocation often experience further dislocations or subluxations, with recurrence rates as high as 94% in patients younger than 20 years.

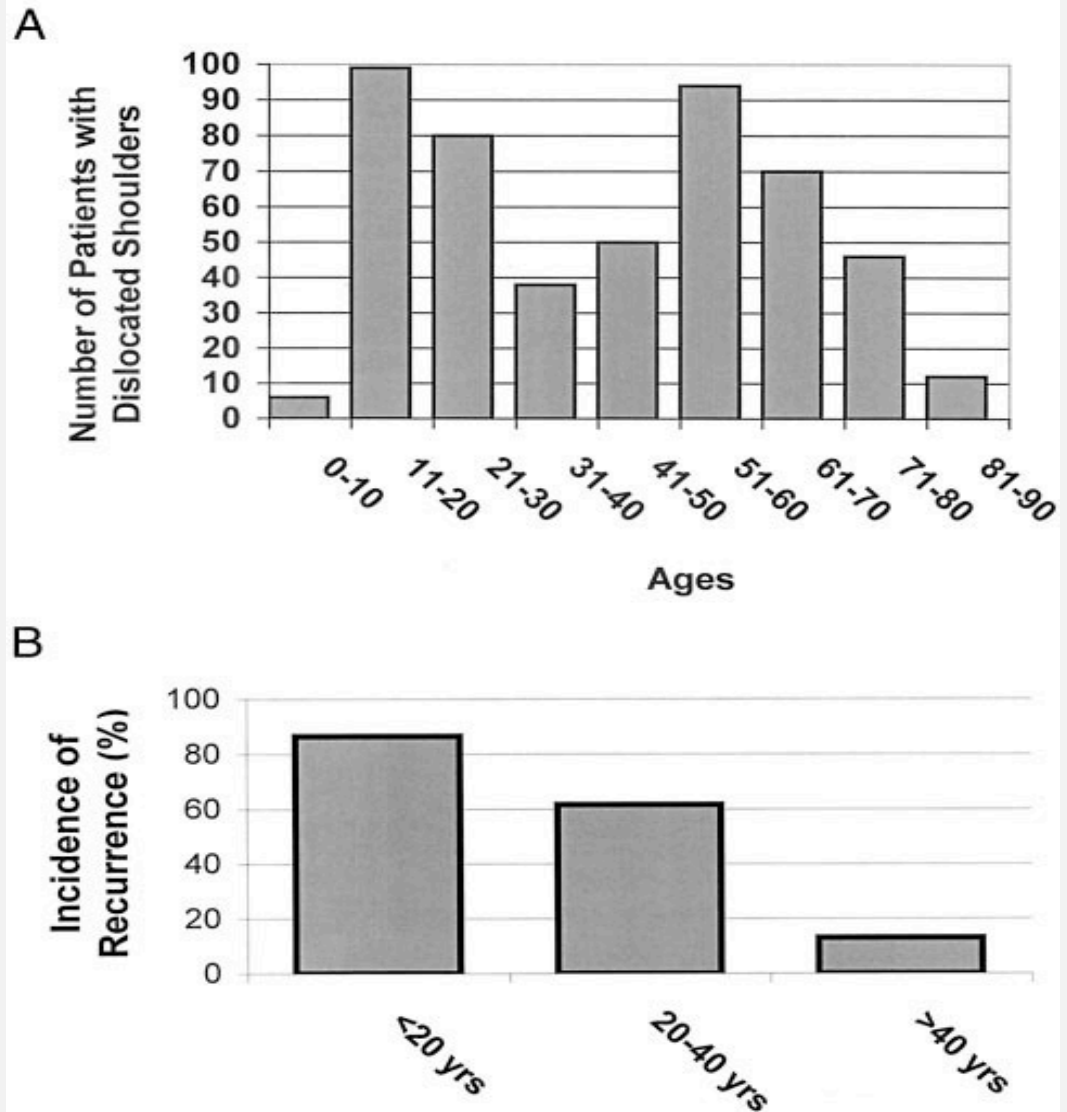


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- The young athletic population that places high demands on the upper extremity by engaging in strenuous activities are the ones who suffer from traumatic dislocations the most.

- However, the most frequent adverse consequence of any initial shoulder dislocation is recurrence, which occurs most commonly in this same active patient population and becomes less frequent with age.

- Re-dislocation recurs in over 80% of people aged 20 years or under, 60% of people aged between 20-40 years, and less than 15% of people aged 40 years or older.



ANTERIOR DISLOCATION

- Almost 95% of shoulder dislocations result from either a forceful collision, from falling on an outstretched arm, or from a sudden wrenching movement with the arm in an abducted, externally rotated position.



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MULTIDIRECTIONAL INSTABILITY

- Atraumatic instability of the shoulder occurs from chronic micro-repetitive injuries, such as when a person is involved with overhead sports or associated with generalized soft-tissue injury and only accounts for 5% of anterior shoulder dislocations, from minor incidents such as raising the arm or moving during sleep



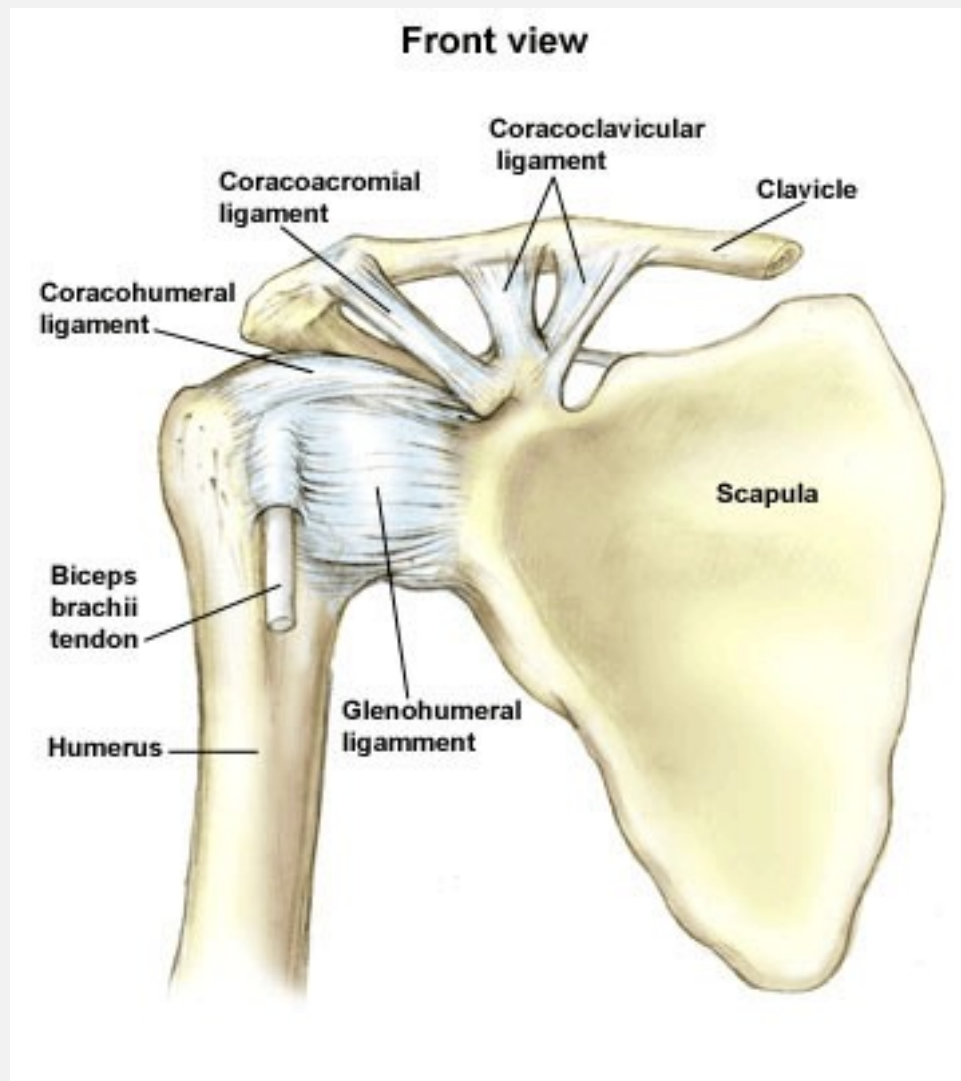
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ANATOMY BASICS

- There are numerous discrete thickenings of the capsule known as ligaments that surrounds the shoulder, providing compression of the humeral head and deterring excessive movement in any one direction from the glenoid fossa.
- They are named the superior glenohumeral ligament (SGHL), the middle glenohumeral ligament (MGHL), and the inferior glenohumeral ligament (IGHL).
- The IGHL has been identified as the primary static constraint against anterior, posterior, and inferior translation in cadaveric specimens when the humerus is abducted beyond 45 degrees.

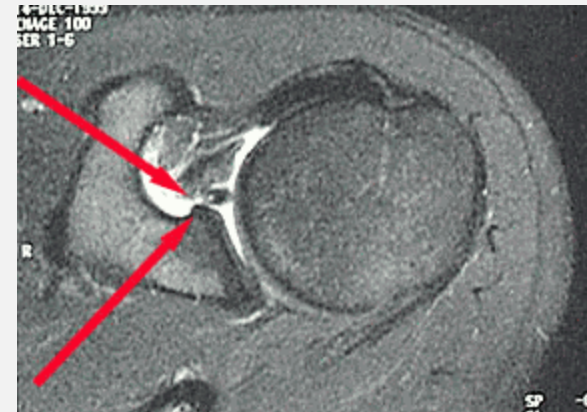
- With the arm in 90-degrees of abduction and in external rotation the IGHL is tightened maximally making it vulnerable for injury.

- In this position the IGHL becomes the most significant ligament in containing the humeral head from dislocating.



DISLOCATION CONSEQUENCES

- When the humeral head does dislocate it causes a capsulolabral avulsion at the anterior-inferior glenoid rim known as a “Bankhart” lesion, and is recognized as a cause for recurrent shoulder instability.
- The most common bony lesion associated with traumatic glenohumeral instability is a compression fracture at the posterior-lateral margin of the humeral head known as a “Hill-Sachs” lesion, which if large may increase the recurrence rate following repair.
- Both of these conditions should be repaired through surgical intervention for normal biomechanics to be restored to the shoulder.



CLINICAL PRESENTATION

- The patient with an acute anterior dislocation is in distress and complains of acute pain.
- The affected limb has decreased ROM and a loss of deltoid contour.
- The pt. will often complain that it felt as though the shoulder slipped out of joint.



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INITIAL TREATMENT

- After a thorough history and physical examination are performed, radiographs are obtained and a diagnosis of an acute traumatic anterior dislocation is made, initial treatment consists of a closed reduction of the shoulder.
- A gravity-assisted reduction maneuver or a traction-countertraction method is used for reduction. When performing the reduction, analgesia and/or IV sedation is routinely used, unless the dislocation is evaluated immediately and reduced rapidly.
- It is extremely important that after reduction is successfully performed, that the neurovascular examination is repeated and more radiographs are taken to determine if any injury occurred during the reduction.



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REDUCTION OF THE JOINT



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CONSERVATIVE TREATMENT

- Non-surgical treatment is historically the treatment of choice for an acute, initial, traumatic anterior shoulder dislocation.
- This generally consists of a period of immobilisation, a supervised rehabilitation program, and restriction from return to vigorous activity for a limited time period.
- The aim of this treatment is to allow soft-tissue healing, maximise strength of the dynamic stabilisers of the shoulder, and minimize recurrence.



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CONSERVATIVE TREATMENT



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CONSERVATIVE TREATMENT

- Numerous studies have shown that conventional, non-operative treatment of shoulder dislocations in the younger more active population results in a high rate of recurrence.
- Non-operative treatment for acute traumatic anterior dislocations has resulted in recurrent instability rates ranging from 17% to 96% in patients under 30 years of age (Bottoni 2002).
- This high rate of recurrence in young patients is what has sparked the recent investigations in the role of operative treatment of patients after suffering a primary anterior dislocation of the shoulder.



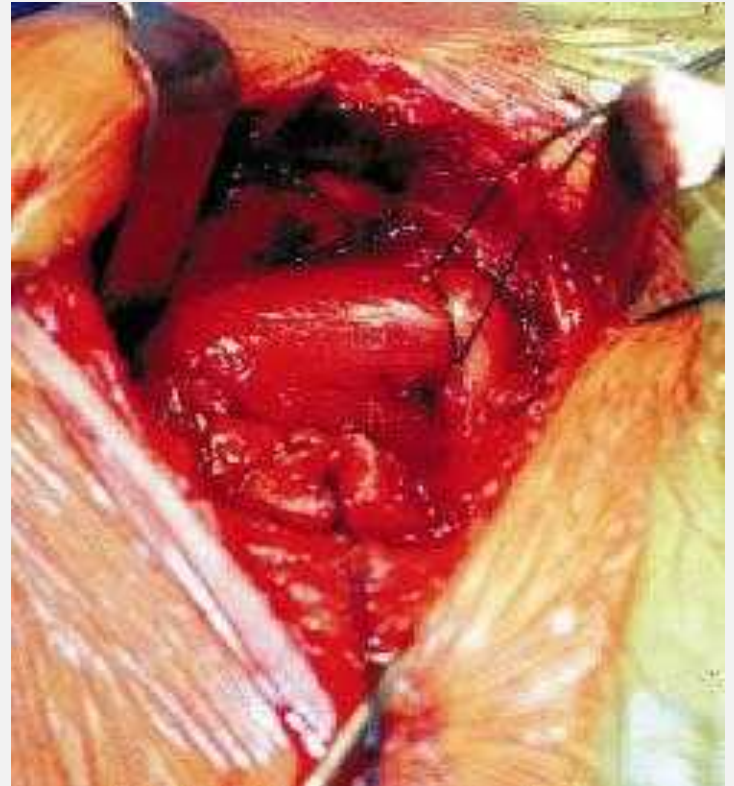
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OPERATIVE OPTIONS

- ARTHROSCOPIC
- OPEN
- LATERJET



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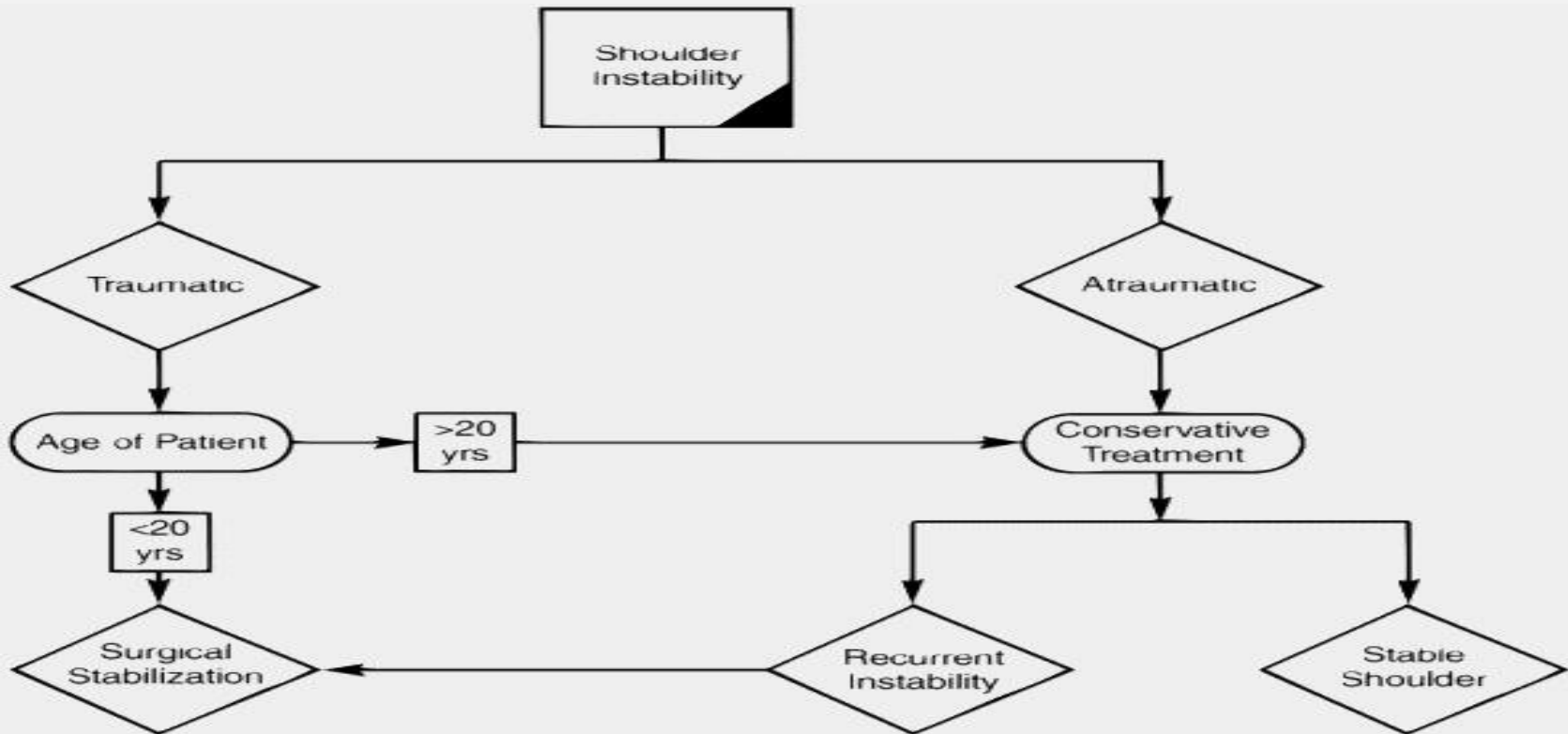
SURGERY

- Surgical management of anterior shoulder instability is successful 80-100% of the time (Burgess 2003).
- The open surgical stabilisation of the shoulder has been the gold standard for many years with a success rate of 91% to 96%, with success defined as the absence of further complaints of subluxation or dislocation (Satterwhite 2000).
- Open anterior stabilisation is associated with a 12 degree loss of external rotation of the shoulder (Paxinos 2001).

SURGERY

- With the introduction of arthroscopy, the physician is able to address the intraarticular pathology while allowing the individual a better opportunity to return to full functional activity.
- Arthroscopic techniques for acute anterior instability have been developed to reattach the labrum without an open incision and without subscapularis detachment.
- The reported re-dislocation rates for arthroscopic anterior shoulder stabilisation are greater than those reported for open procedures 5%-15% vs. 6%. However, arthroscopic procedures are associated with less loss in external rotation than open procedures (Paxinos 2001).

FLOW CHART



ANTERIOR STABILISATION PROTOCOL (EARLY 0-3 WEEKS)

Sling for 3 weeks (athletes can wean off sooner under guidance of club therapist)

Teach axillary hygiene

Teach postural awareness and scapular setting

Core stability exercises as appropriate)

Proprioceptive exercises (minimal weightbearing below 90 degrees)

Active assisted flexion as comfortable (in 'safe zone')

Active assisted external rotation as comfortable (in 'safe zone')

Do not force or stretch

No combined abduction & external rotation



ANTERIOR STABILISATION PROTOCOL (INTERMEDIATE 3-6 WEEKS)

Wean off sling

Progress active assisted to active ROM as comfortable

Do not force or stretch

No combined abduction & external rotation



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ANTERIOR STABILISATION PROTOCOL (LATE 6-12 WEEKS)

Regain scapula & glenohumeral stability working for shoulder joint control rather than range

Gradually increase ROM

Strengthen

Increase proprioception through open&closed chain exercise

Progress core stability exercises

Ensure and treat posterior tightness, if required

Incorporate sports-specific rehabilitation

Plyometrics and perturbation training



ANTERIOR STABILISATION PROTOCOL (PRE D/C 12-16 WEEKS)

Ensure scapula & glenohumeral stability working for shoulder joint control rather than range

Full ROM

Full Power

Maintain proprioception through open & closed chain exercise

Ongoing progression of core stability exercises

Ensure and treat posterior tightness, if required

Incorporate sports-specific rehabilitation

Advanced Plyometrics and perturbation training



ANTERIOR STABILISATION PROTOCOL (FUNCTIONAL RETURN)

Return to work	Sedentary job: as tolerated Manual job: 3 months
Driving	6-8 weeks
Swimming	Breaststroke: 6 weeks Freestyle: 12 weeks
Golf	3 Months
Lifting	Light lifting can begin at 3 weeks. Avoid lifting heavy items for 3 months.
Contact Sport	E.g. Horse riding, football, martial arts, racket sports and rock climbing: 3 months

Milestones	
Week 6	Active elevation to pre op level
Week 12	Minimum 80% range of external rotation compared to asymptomatic side Normal movement patterns throughout range
Failure to achieve milestones	Referral to shoulder clinic



SUMMARY

- The outcome of non-operative treatment for acute traumatic anterior instability of the shoulder especially in the younger population is poor.
- Through continued significant advances in methods to restore the malfunctioning anatomic structures using surgical intervention the patient is most likely to return to full functional ability with a reduced risk of recurrent dislocation.
- Through clearer understanding of age-related recurrence rates, differences between traumatic and atraumatic dislocations, and the most current treatment options available, Physician Assistants can more accurately diagnose and treat these patients.

TASK

- Go onto www.shoulderdoc.co.uk and find out about another shoulder condition that may require surgical intervention
- Bring your notes and an electronic device to next weeks lecture.