



Recurrent shoulder instability

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Fellowship in shoulder
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Mobility ↔ Stability



Glenohumeral Instability

- one of the most unstable joint (50% of all dislocation)
- Young age is a specific risk factor
- Anterior instability (>90% recurrent dislocations)



Shoulder Instability?

When ?

- Acute , Neglected (chronic) , Recurrent

How ?

- Traumatic , Atraumatic , Voluntary

Direction ?

- Anterior , Posterior , Inferior , Multidirectional

Degree ?

- Dislocation , Subluxation

Accompanying symptoms ?

- Pain , Stiffness ,,,

Pathological humeral translation that results in clinical symptoms of pain & dysfunction

- Instability (symptom)

ranging from a vague sense of shoulder dysfunction to an obvious fixed dislocation

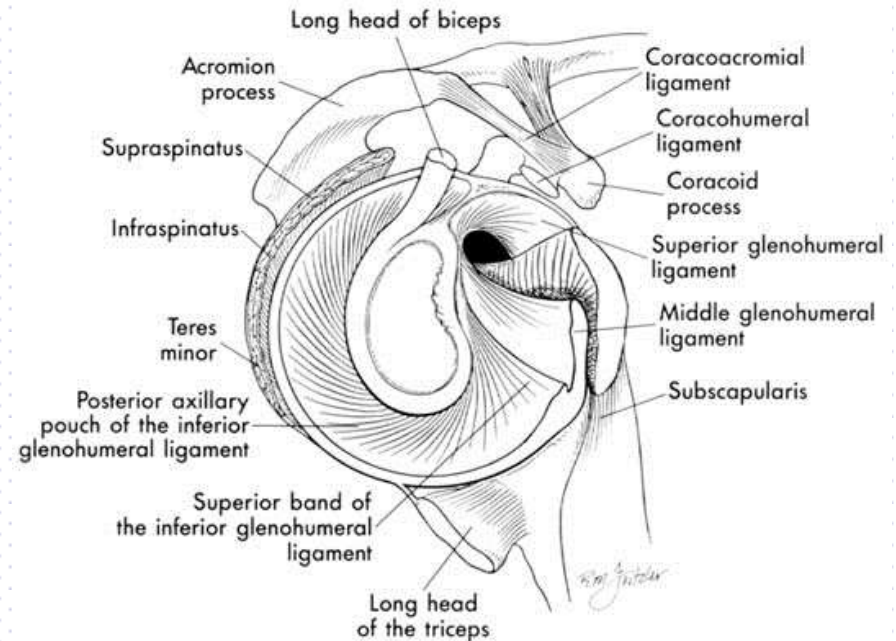
- Laxity (sign)



Mobility ↔ Stability

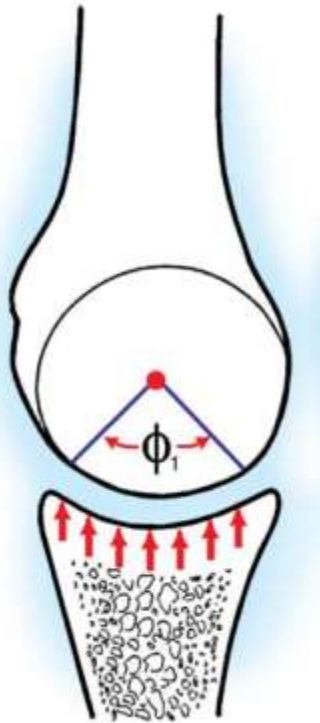
Shoulder Joint Stabilizers

- Bony anatomy
- Glenoid labrum
- Joint capsule
- Rotator cuff muscles
- Glenoid version
- Negative intraarticular pressure
- Synchronous mobility of the scapula and humeral head



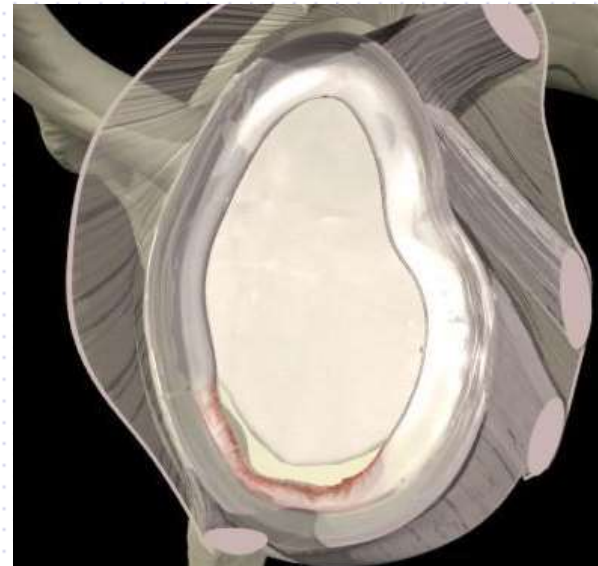
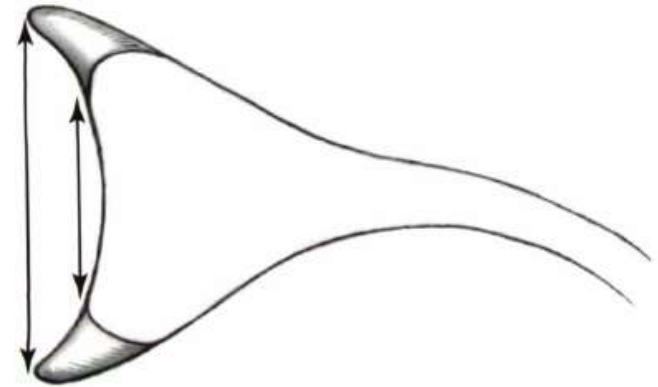
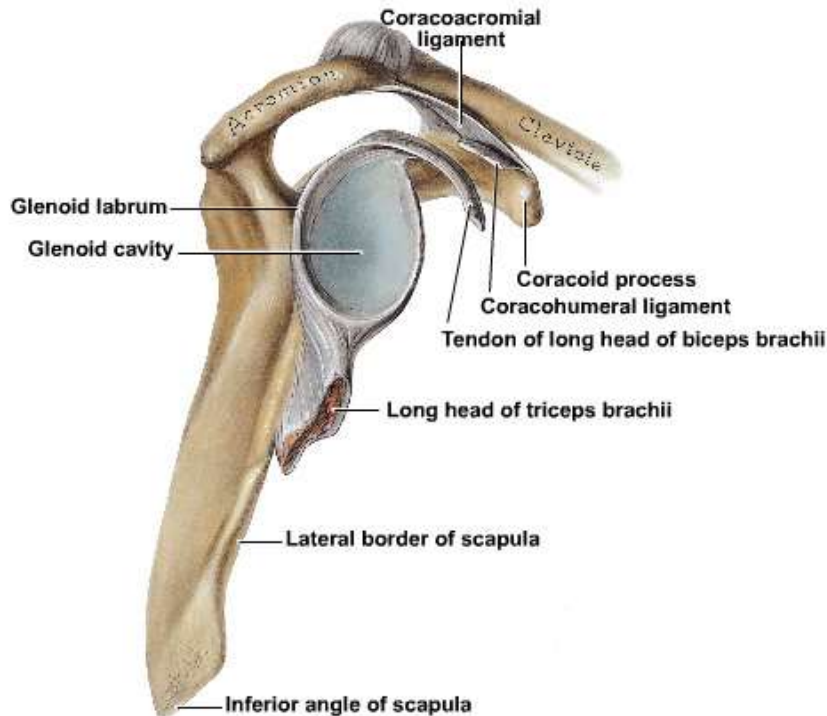
Bony anatomy

- bony anatomy of the shoulder joint does not provide inherent stability (1/4 of the humeral head articulates with the glenoid)
- close concavity–convexity match to the humeral head



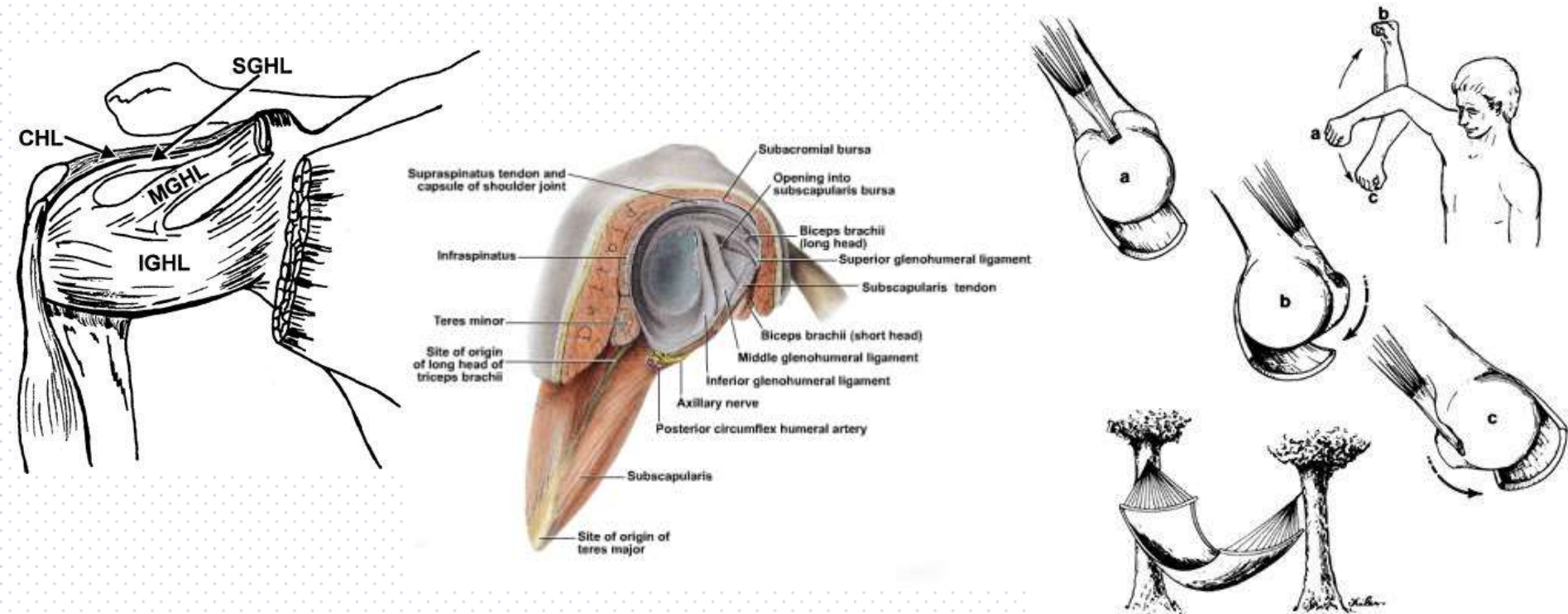
Glenoid labrum (fibrocartilaginous ring)

- increases the surface area and the depth of the glenoid cavity (50%)
- point of attachment for glenohumeral ligaments and long head of biceps
- “chock block” to humeral head translation



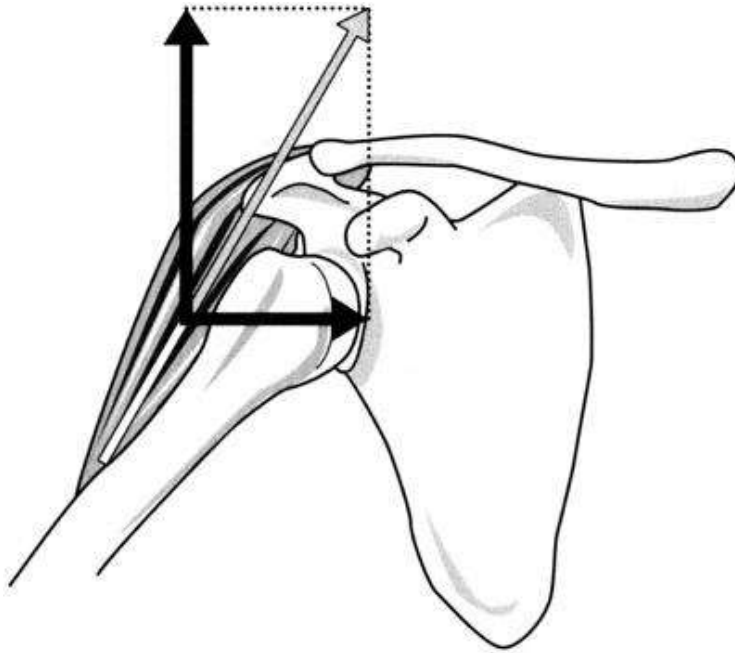
Joint capsule (capsuloligamentous complex)

- Lax capsule reinforced by glenohumeral ligaments
- (SGHL-MGHL-IGHL)

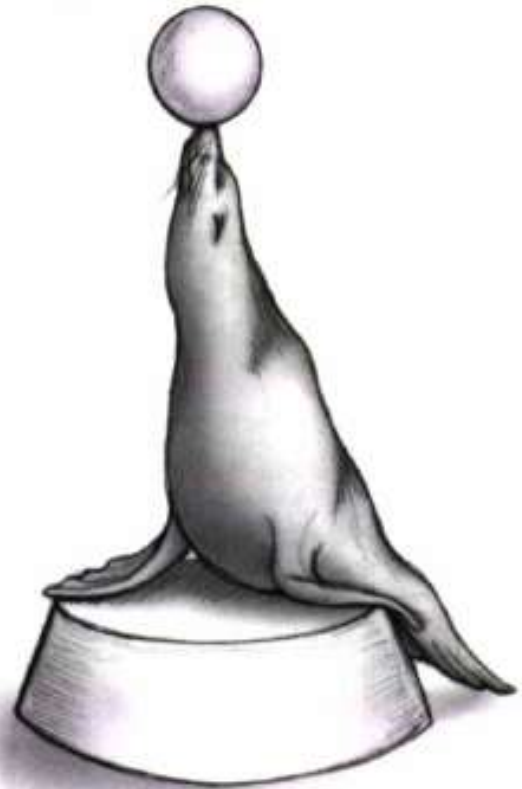
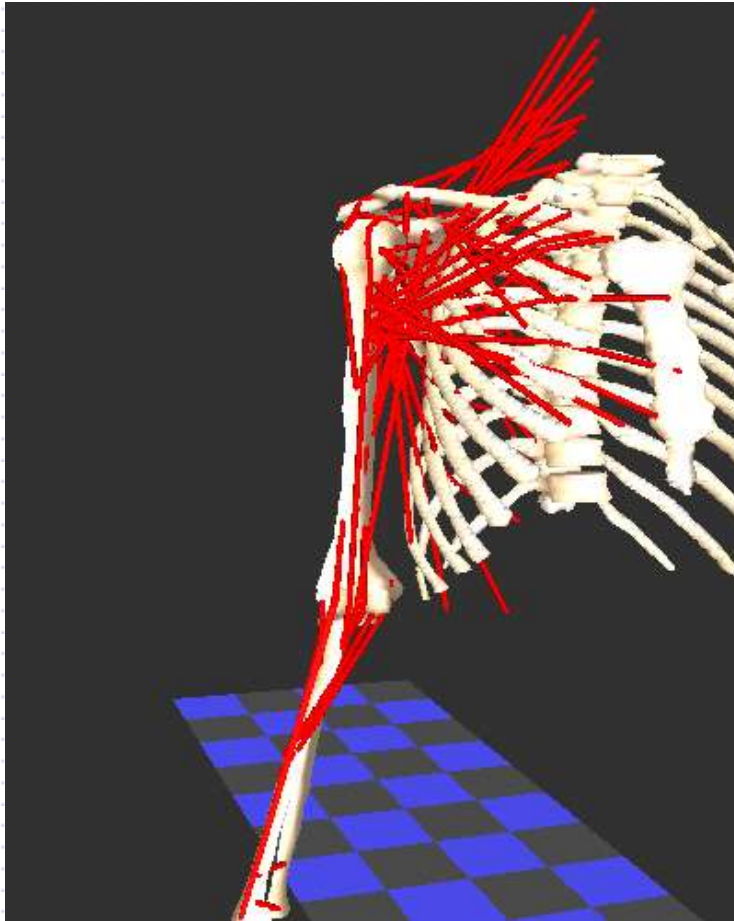


Rotator cuff muscles and long head of the biceps tendon (dynamic stabilizers)

- concavity-compression mechanism



Synchronous mobility of the scapula and humeral head



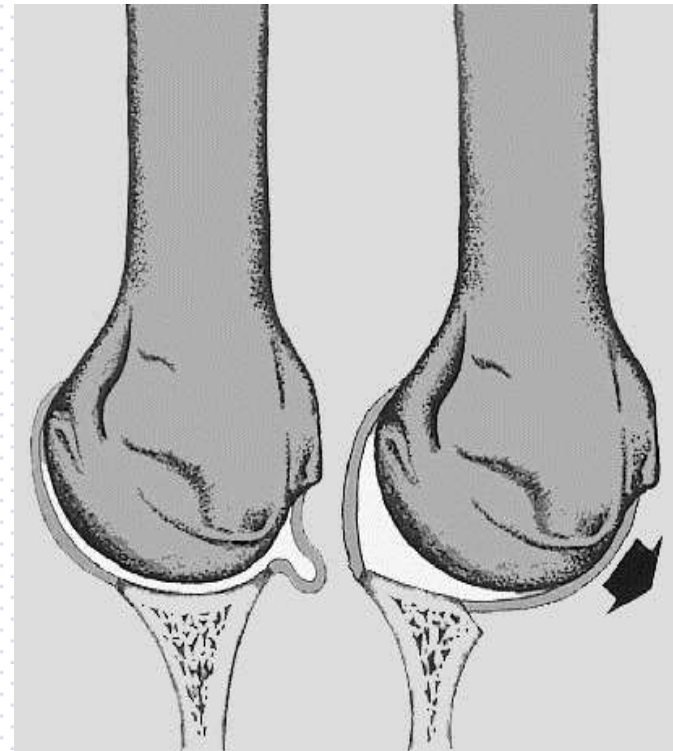
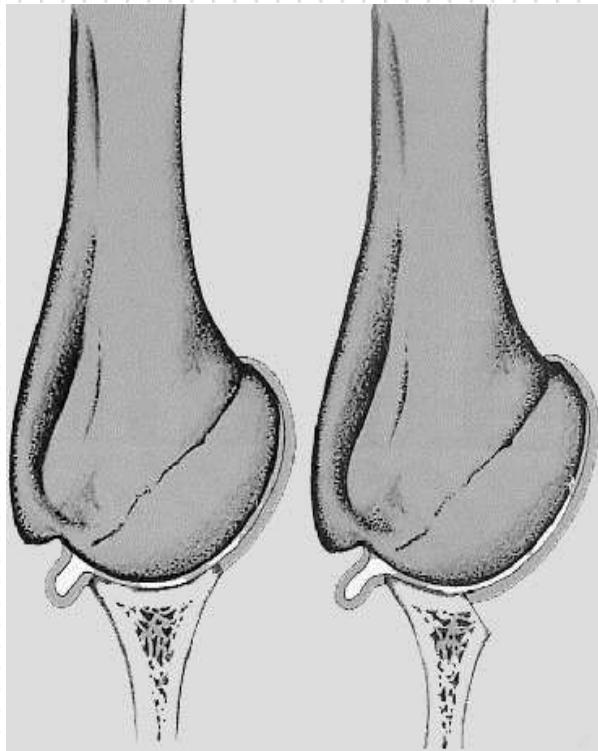
Pathology

- no essential pathological lesion
- Bankart lesion is most common pathological lesion (>80%)
- Excessive laxity of the shoulder capsule (>20%)
- Hill-Sachs lesion (a secondary pathological lesion)
- Glenoid rim fractures

Glenoid defect

Feb / 2000, J Bone Joint Surg (AM) :

Itoi E - The effect of Glenoid defect on anteroinferior stability of the shoulder after Bankart repair: a cadaveric study



Sugaya H.e.a : Glenoid rim morphology in recurrent anterior glenohumeral instability

J Bone Joint Surg Am. 2003 May

TABLE I Morphology of the Glenoid Rim in One Hundred Shoulders with Recurrent Anterior Glenohumeral Instability

Morphology of Glenoid Rim	Prevalence
Bone fragment	50%
Large fragment (>20%)	1%
Medium fragment (5%-20%)	27%
Small fragment (<5%)	22%
Erosion or compression fracture	40%
Normal	10%



laxity Test

- Sulcus sign
- Drawer Test



Farber AJ, Castillo R, Clough M, Bahk M, McFarland EG. Clinical assessment of three common tests for traumatic anterior shoulder instability. JBJS Am. 2006 Jul;88(7):1467-74.

Assessment of clinical value of :

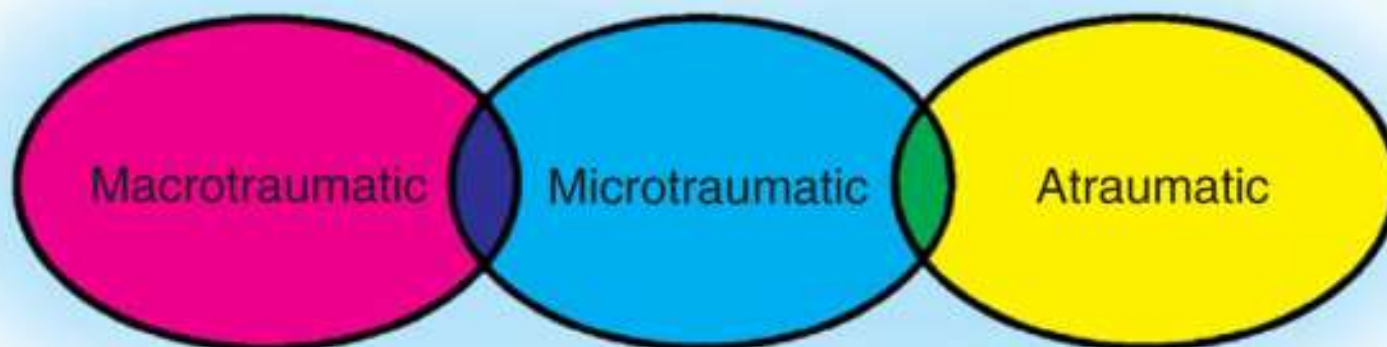
- Apprehension test
- Relocation test
- Ant. Drawer test



specific but not sensitive

use of apprehension rather than pain as the diagnostic criterion for instability

Matsen's classification system



TUBS or “Torn Loose”

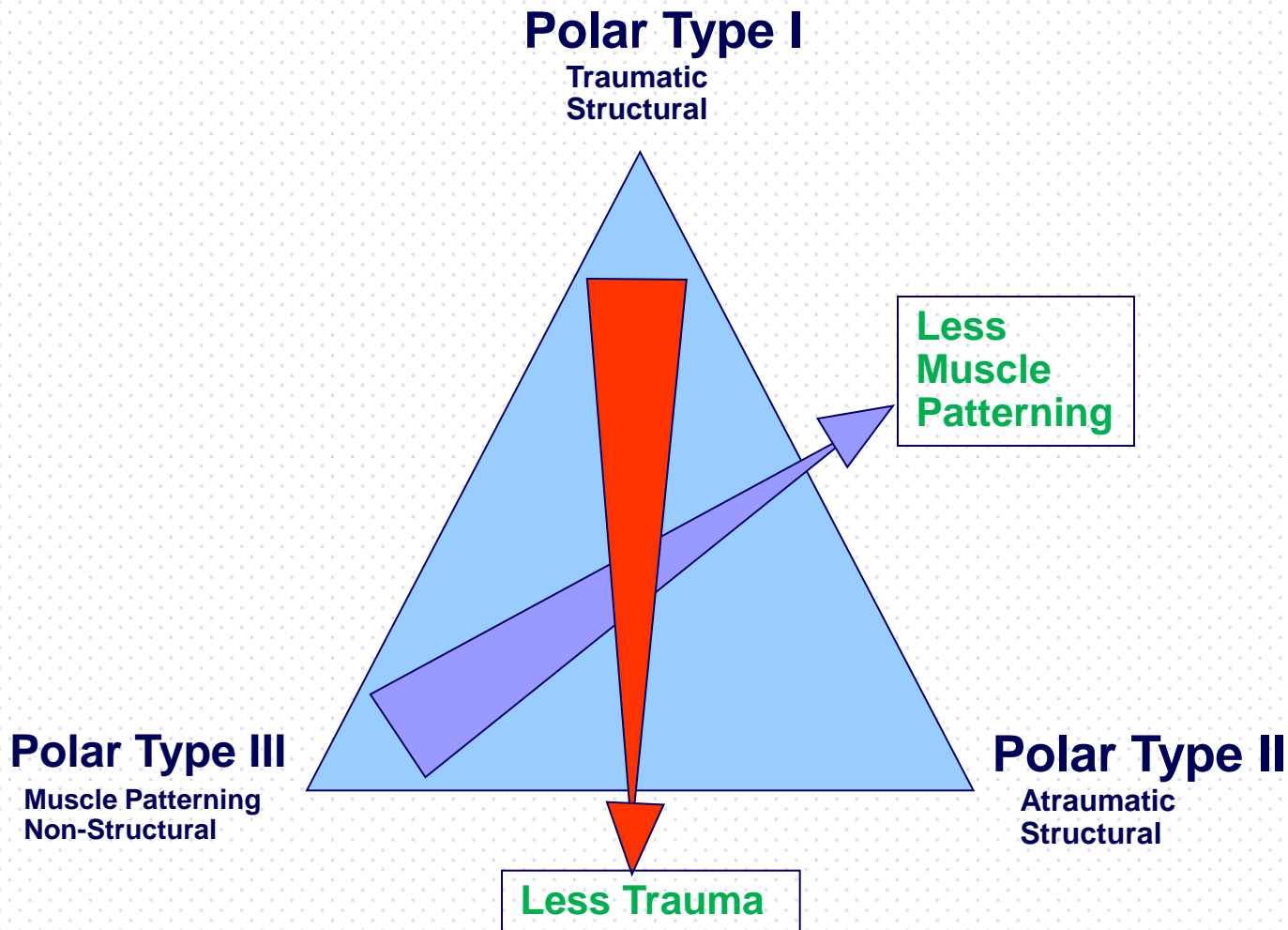
- Traumatic aetiology
- Unidirectional instability
- Bankart lesion is the pathology
- Surgery is required

AMBRI or “Born Loose”

- Atraumatic:
- Multidirectional instability
- Bilateral: asymptomatic shoulder is also loose
- Rehabilitation
- Inferior capsular shift: surgery required if conservative measures fail

Stanmore Classification (Bayley Triangle)

*Lewis, Kitamura & Bayley
Current Orthopaedics. 18:97-108. 2004*



Operative Treatment of Anterior Shoulder Instability

Soft tissue procedures:

- Subscapularis Muscle Procedures (Putti-Platt , Magnuson-Stack)
- Bankart Procedure
- Capsular Reconstruction (Neer capsular shift)

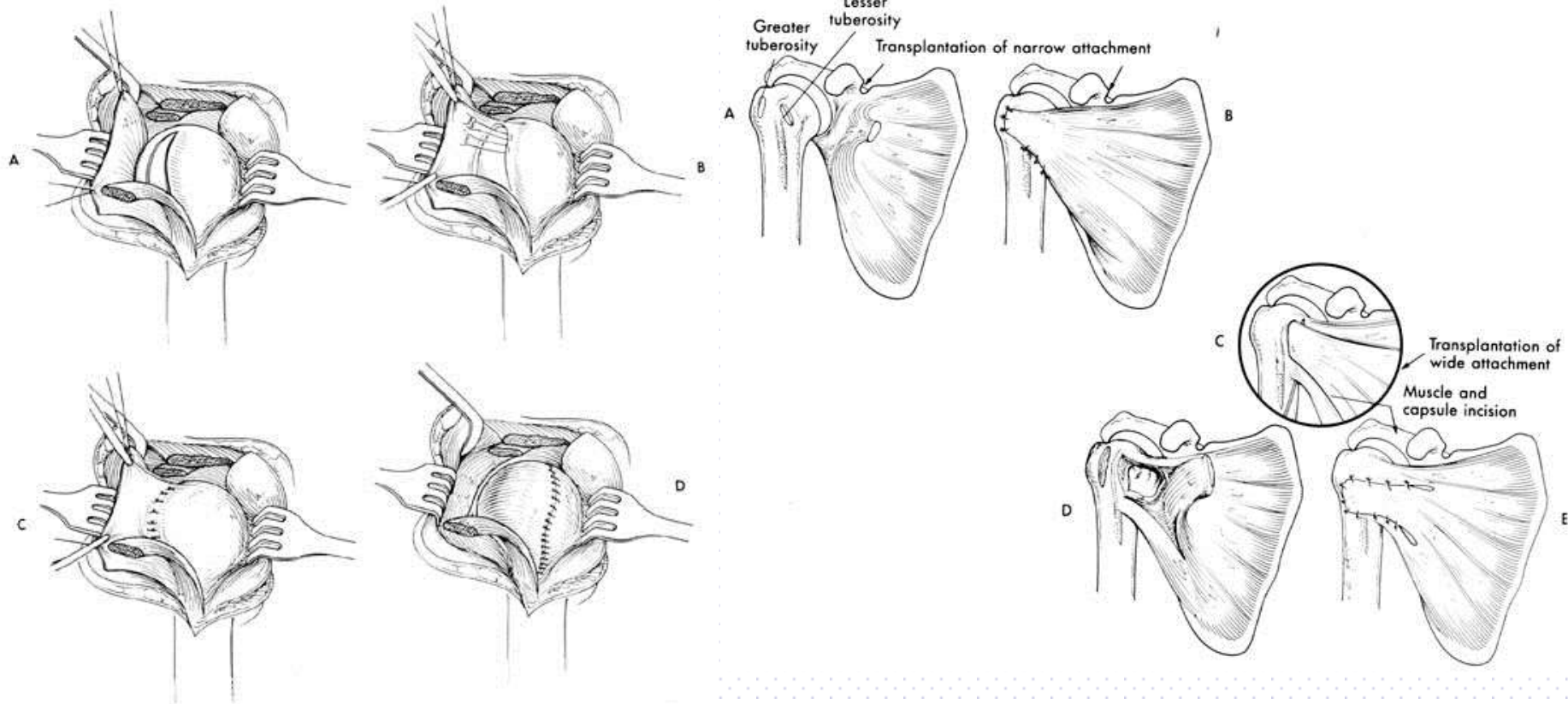
Bony procedures:

- Coracoid Transfer (Bristow-Latarjet Procedure)
- Osteotomy of the Proximal Humerus (Weber rotational osteotomy)
- Bone Block (Eden-Hybbinette Procedure)
- Osteotomy of the Neck of the Glenoid

Soft tissue procedures:

Subscapularis Muscle Procedures

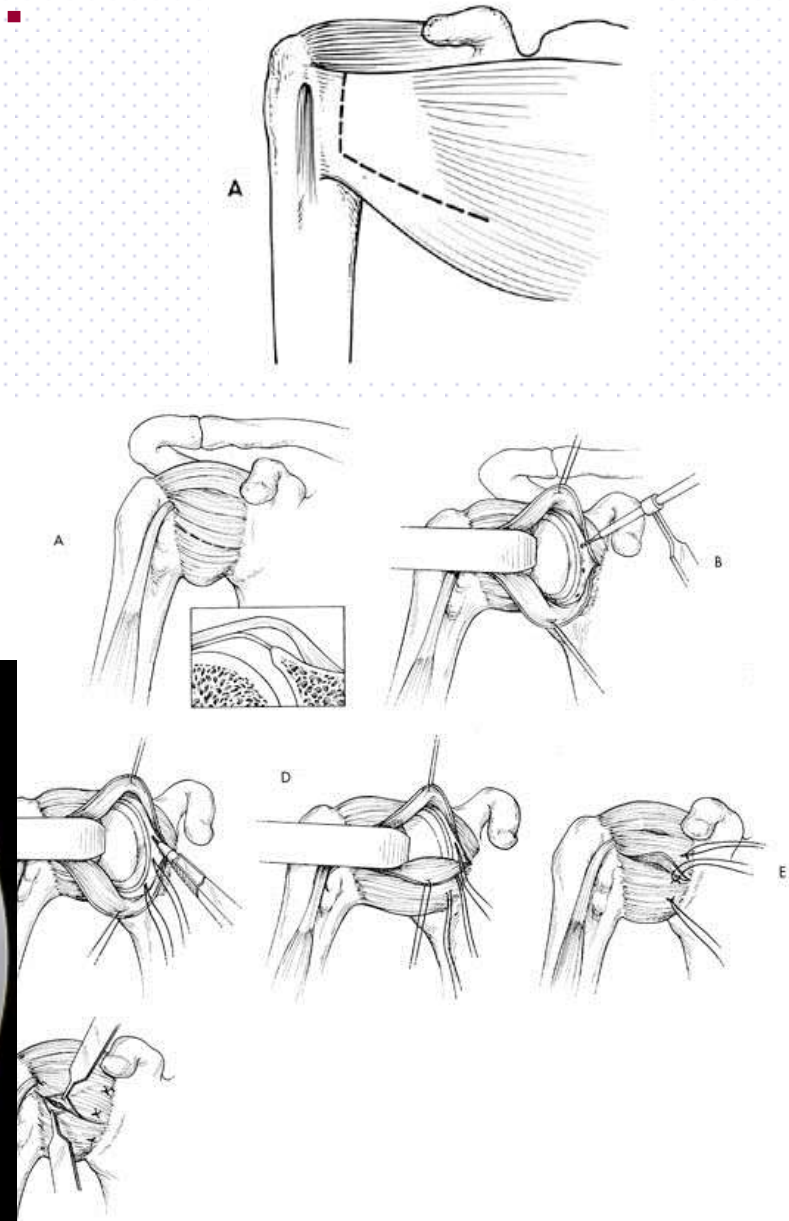
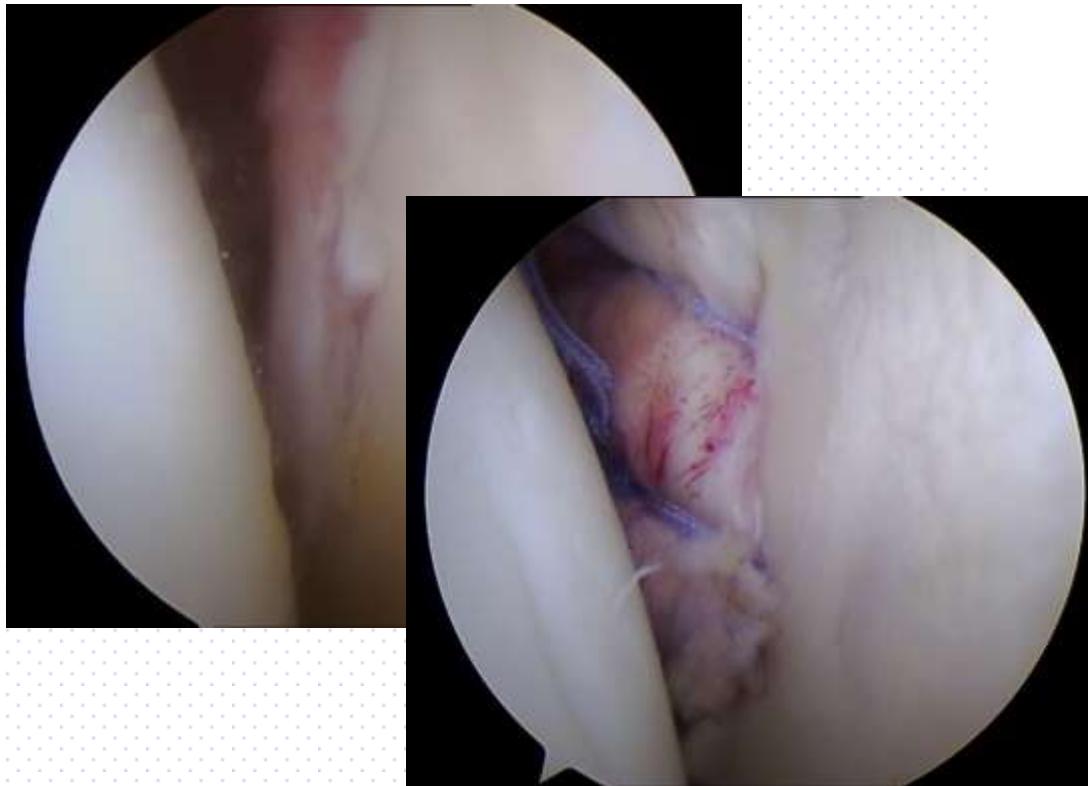
- Not correcting a labral or capsular defect
- Restriction of ER



Soft tissue procedures:

Bankart Procedure

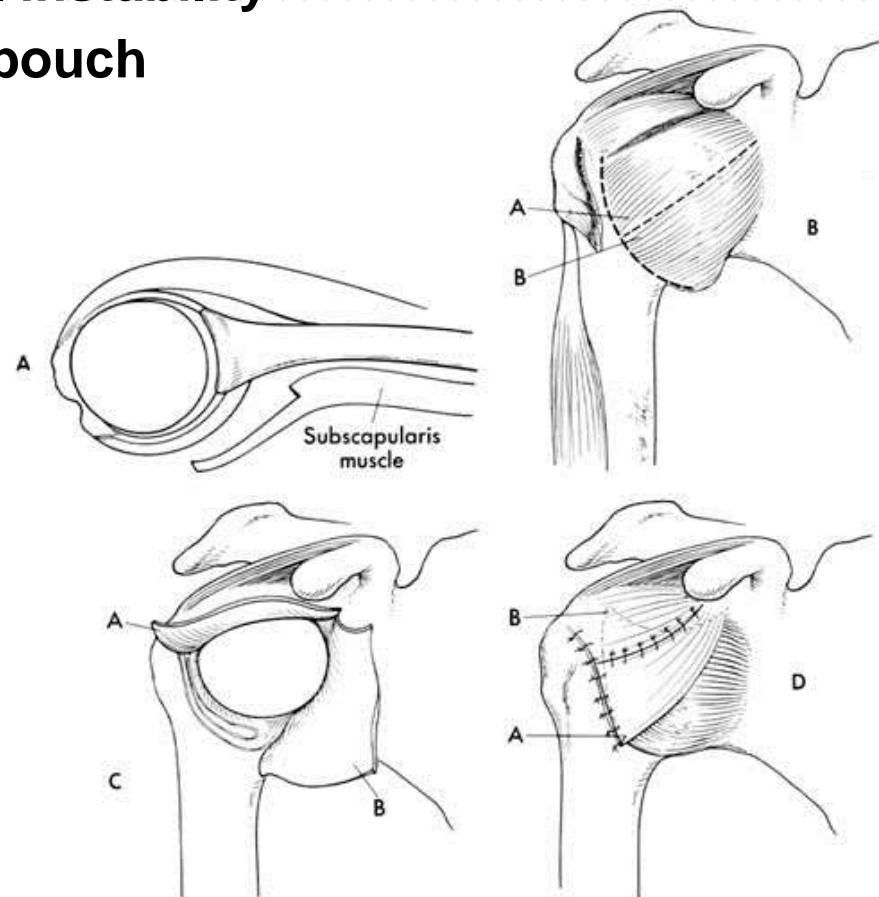
- gold standard
- recurrence rates from 3% to 10%
- Open or arthroscopic



Soft tissue procedures:

Capsular Reconstruction (Neer capsular shift)

- Procedure for multidirectional instability
- Correct loose ,redundant inf. pouch



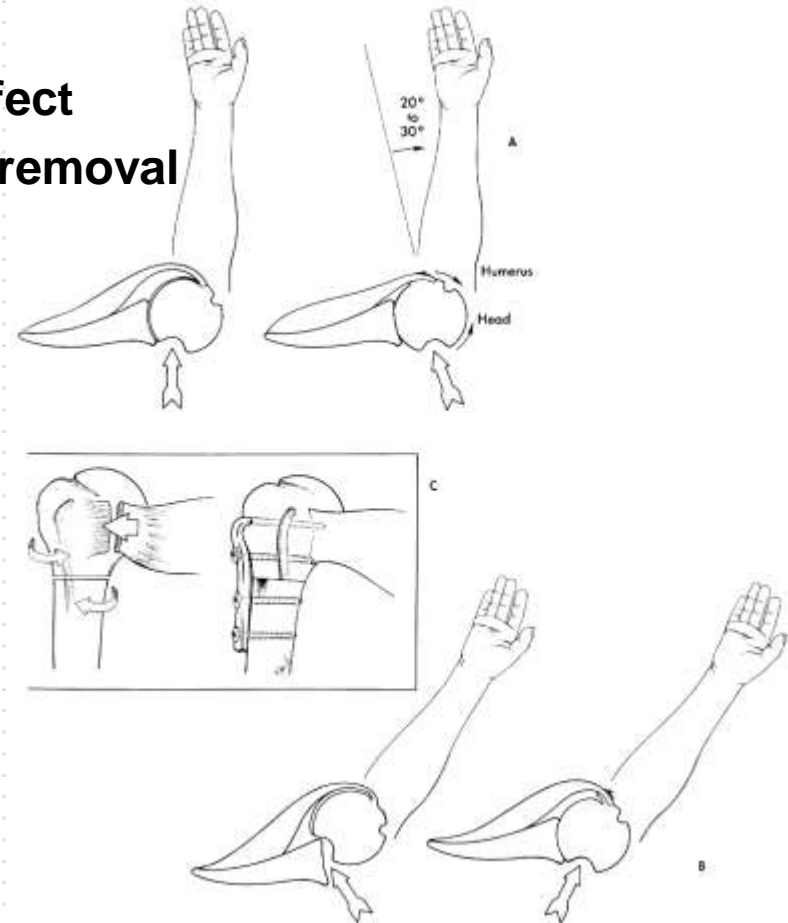
Capsular Plication (capsular shift)



Bony procedures:

Osteotomy of the Proximal Humerus (Weber subcapital osteotomy)

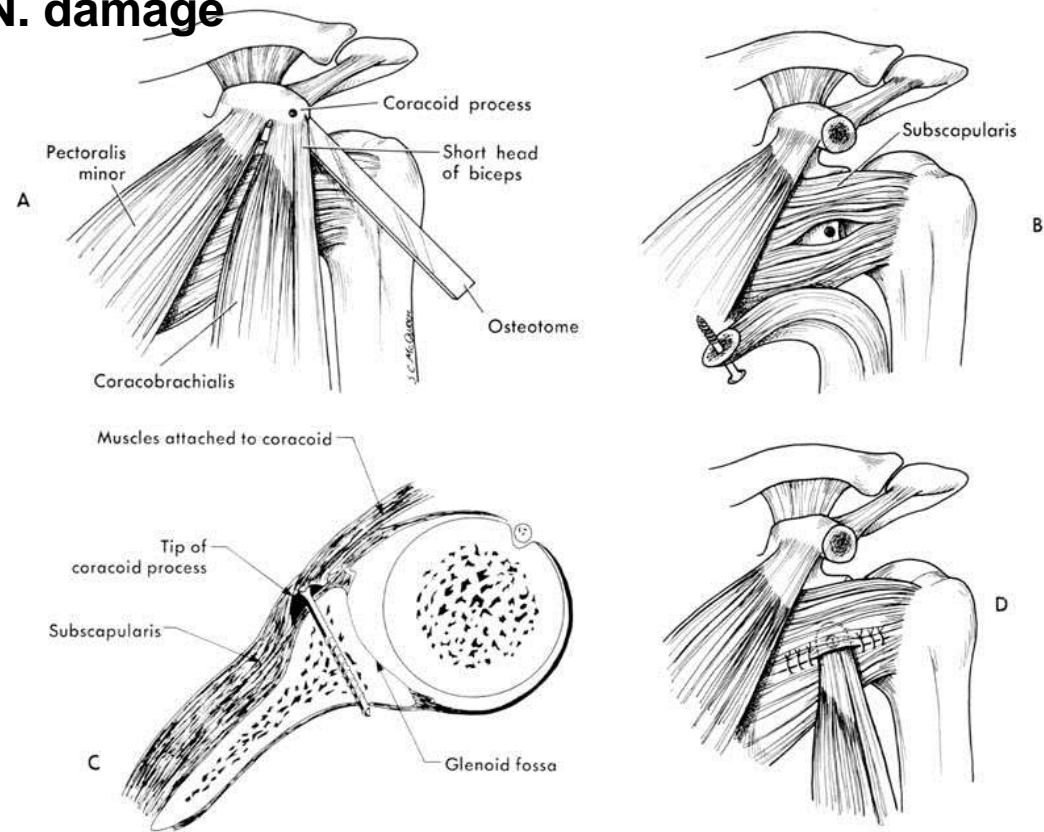
- increased the humeral head retroversion
- Indicated in posterolateral humeral head defect
- Requirement for second operation for plate removal



Bony procedures:

Coracoid Transfer (Bristow-Latarjet Procedure)

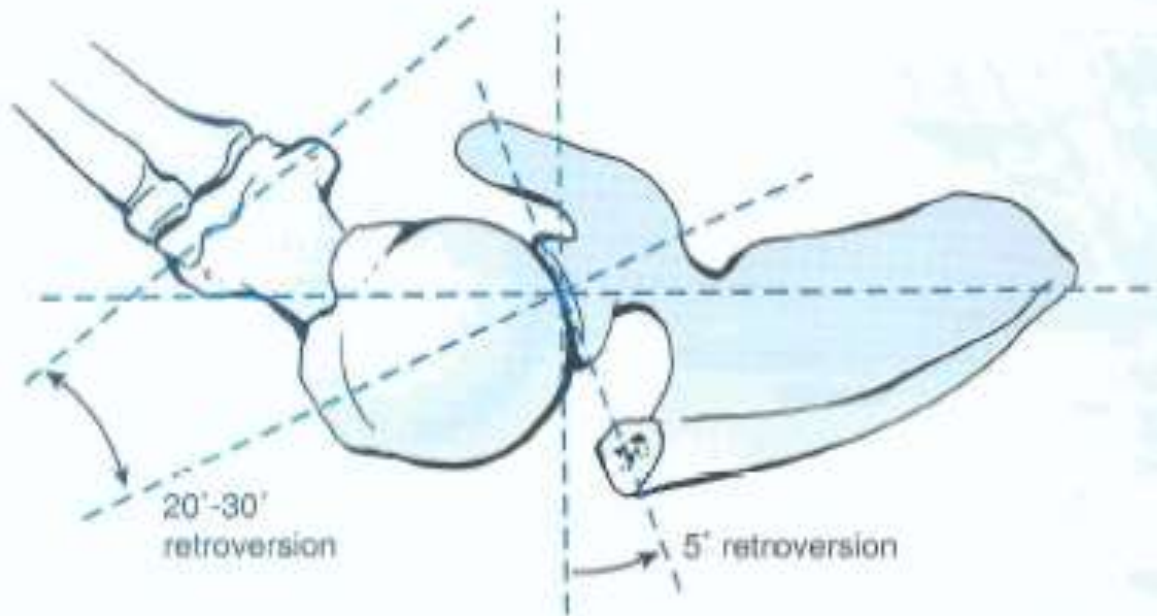
- Not correcting a labral or capsular defect
- Restriction of ER
- Possibility of musculocutaneous N. damage
- Decrease of IR power
- Osteoarthritis ↑



Bony procedures:

Osteotomy of the Neck of the Glenoid

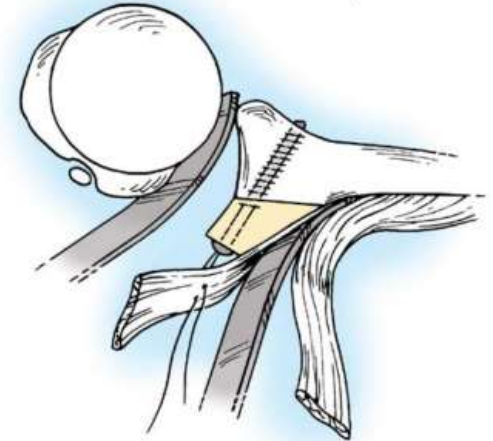
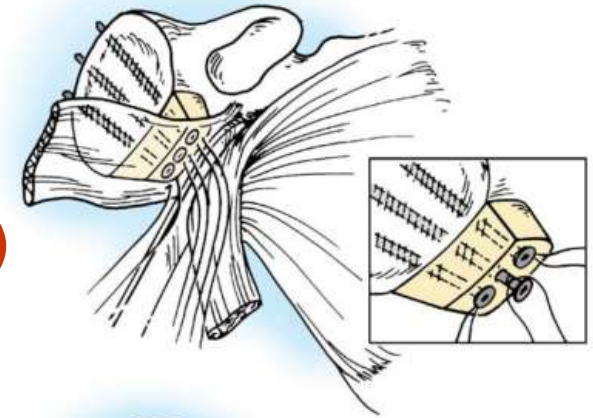
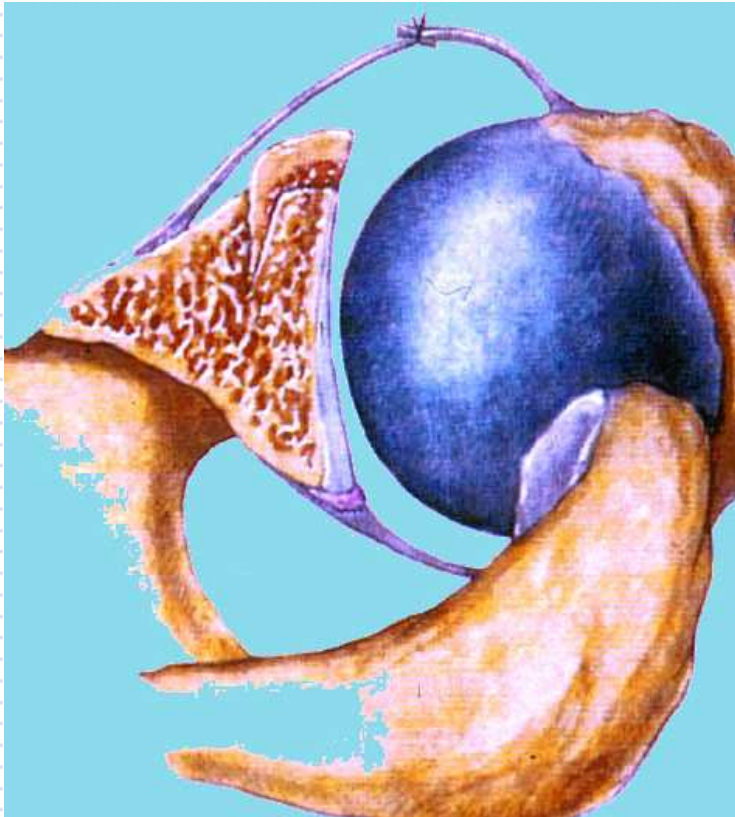
- Change the glenoid version
- posterior closing-wedge or anterior opening-wedge osteotomy
- too hazardous



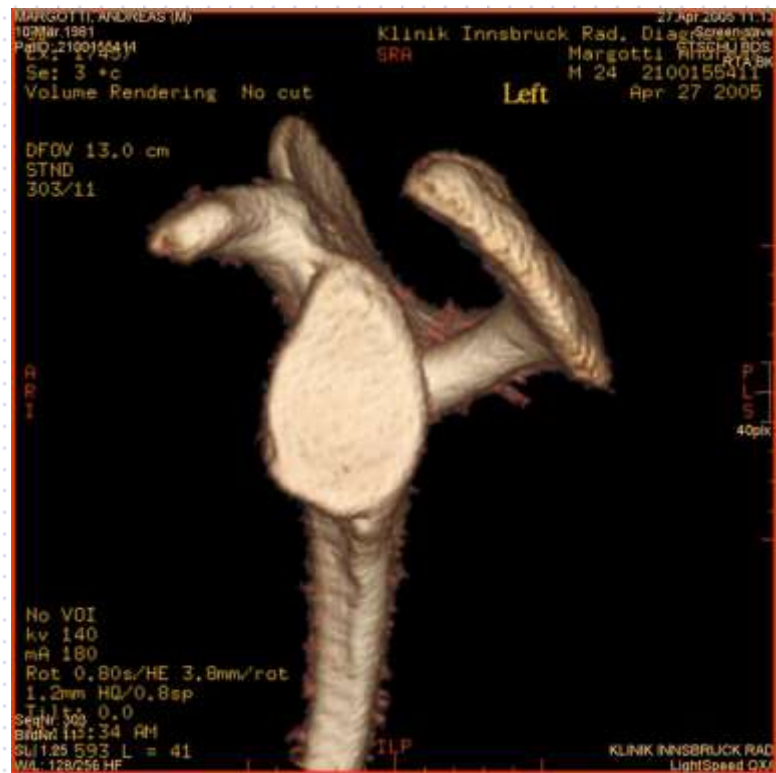
Bony procedures:

Bone Block (Eden-Hybbinette Procedure)

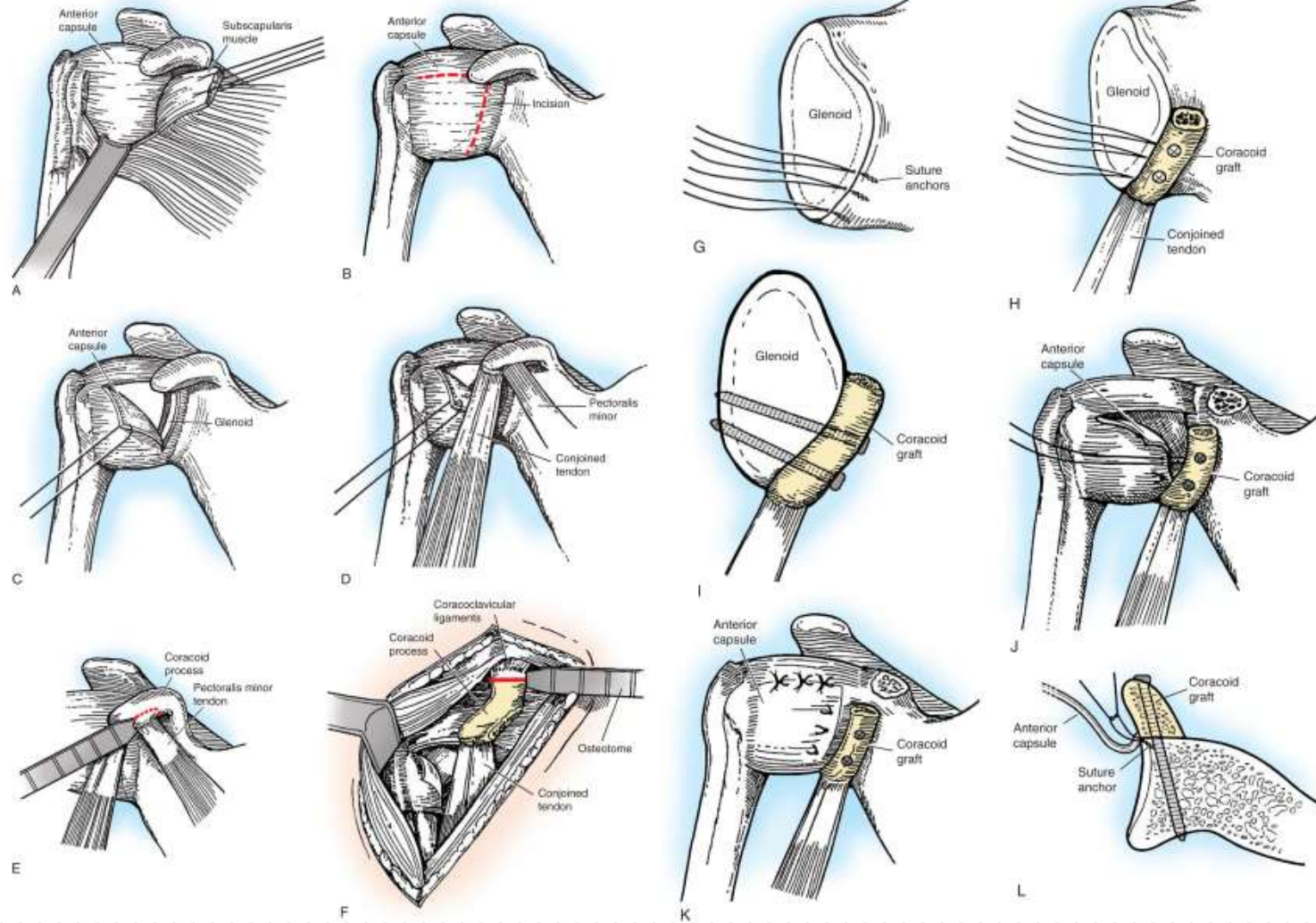
- Extend the anterior glenoid by iliac graft
- Postoperative degenerative change



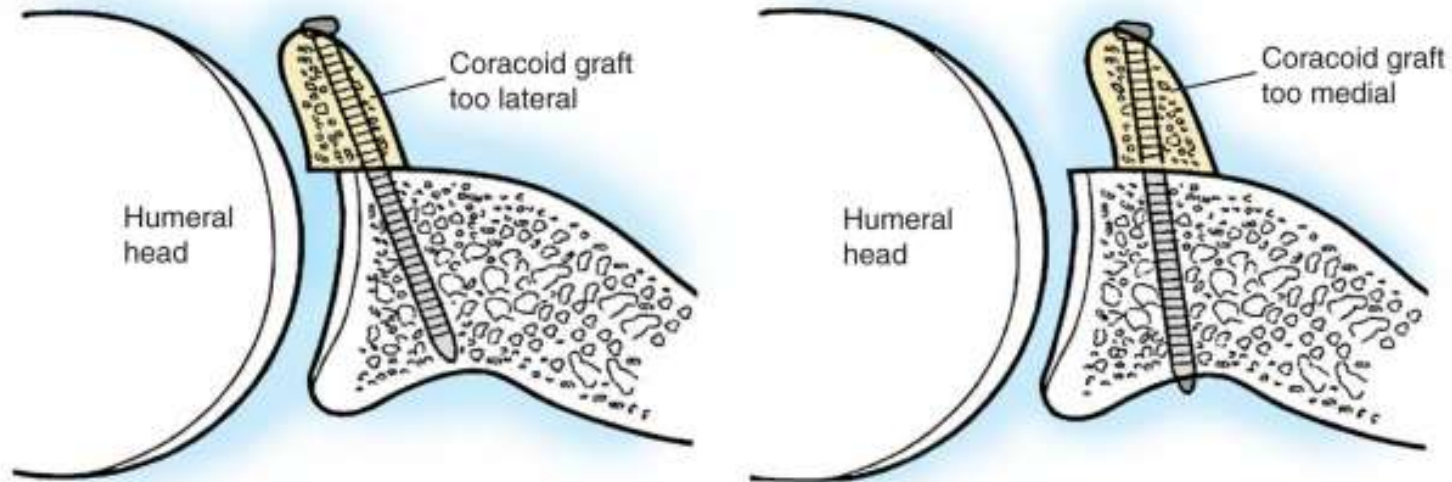
J-Span plasty / Resch



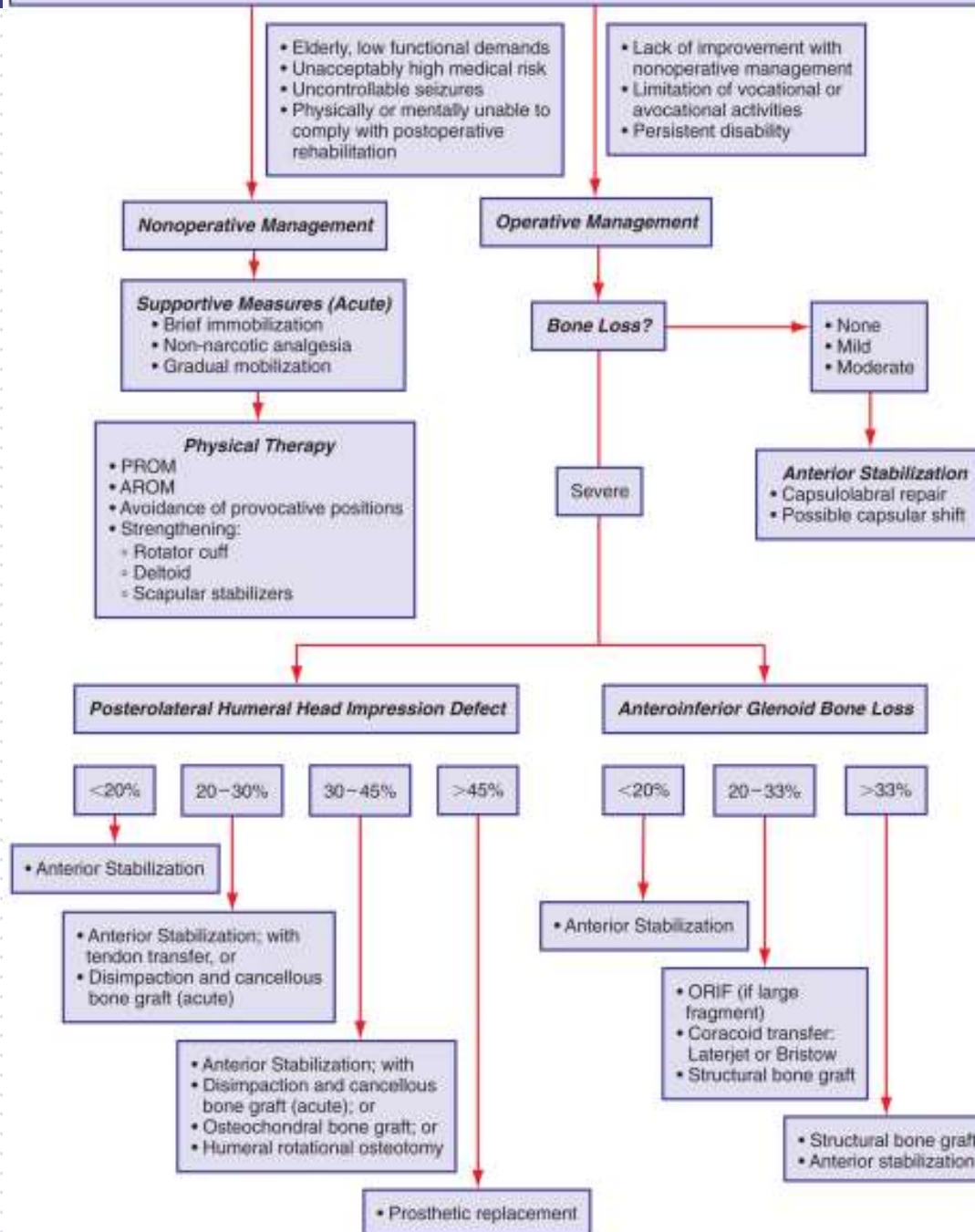
Burkhart SS, DeBeer JF. Arthroscopy 16:677, 2000.)



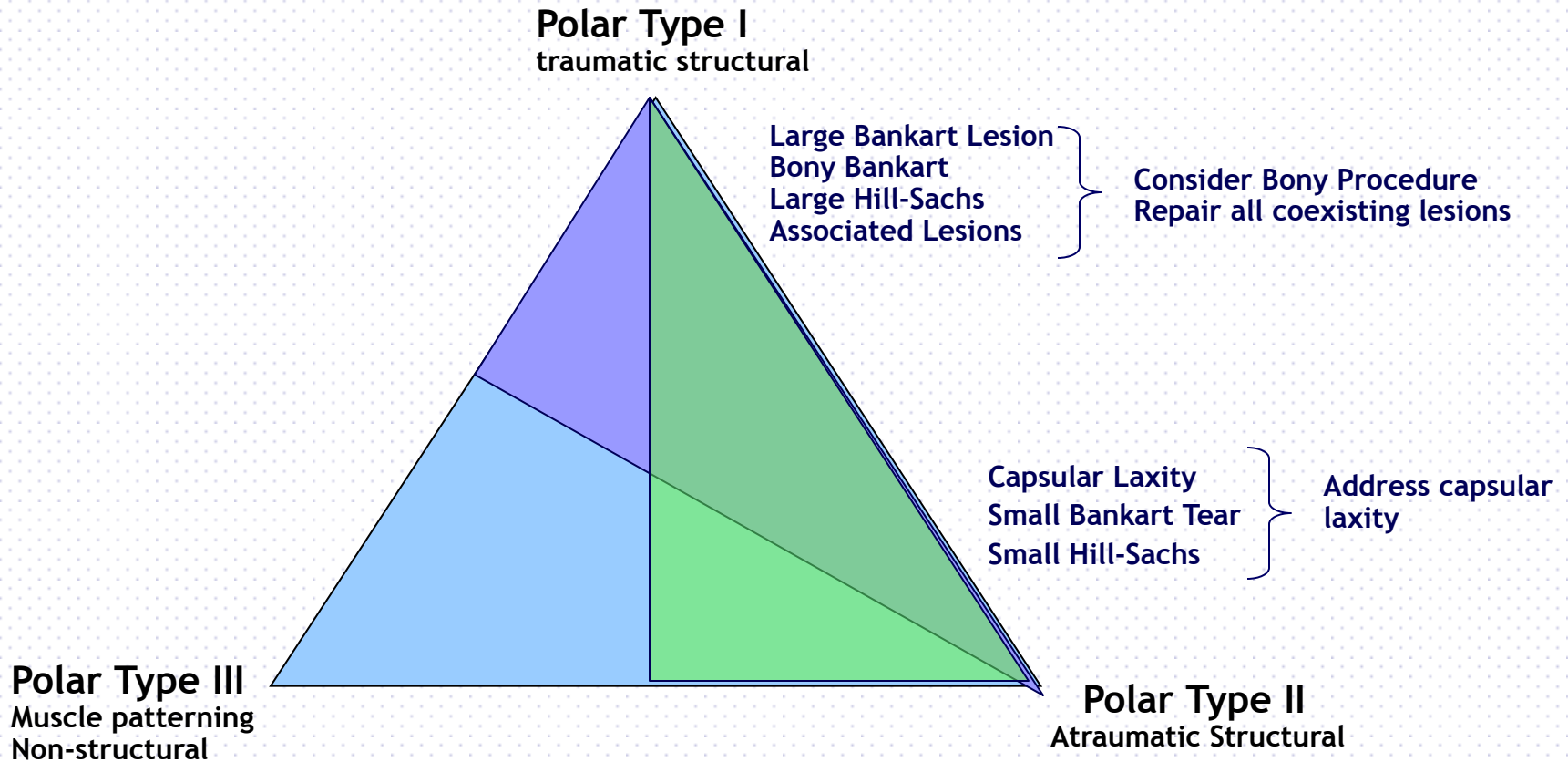
Burkhart SS, DeBeer JF. Arthroscopy 16:677, 2000.)



Recurrent Anterior Glenohumeral Instability



Summary



Thank you for attention