# shoulder Instability and capsulolabral pathology

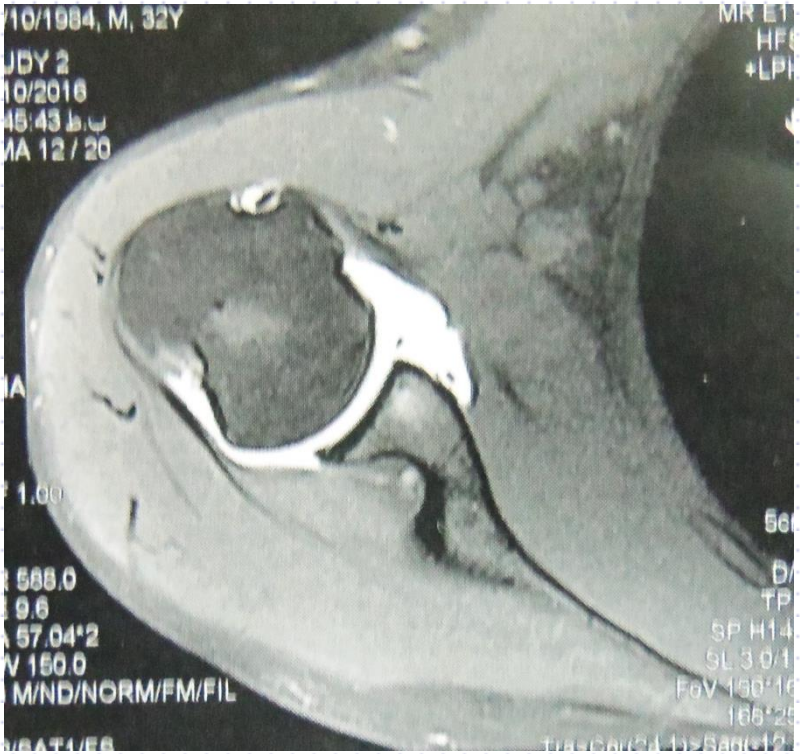
M.N. Naderi, MD

Fellowship in shoulder surgery

# Glenohumeral Instability

- unstable joint  (50% of all dislocation)
- Young age is a specific risk factor
- Anterior instability

  (>90% recurrent dislocations)



- Instability (symptom)

**vague sense of shoulder dysfunction** ⟷ **obvious fixed dislocation**

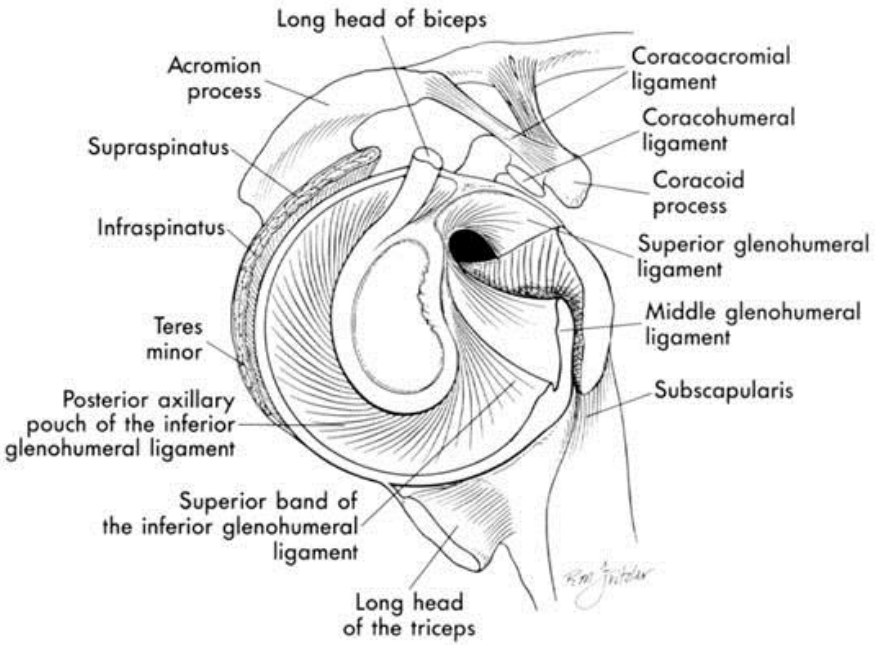
- Laxity (sign)

**Laxity ≠ Instability**

# Mobility ⟷ Stability

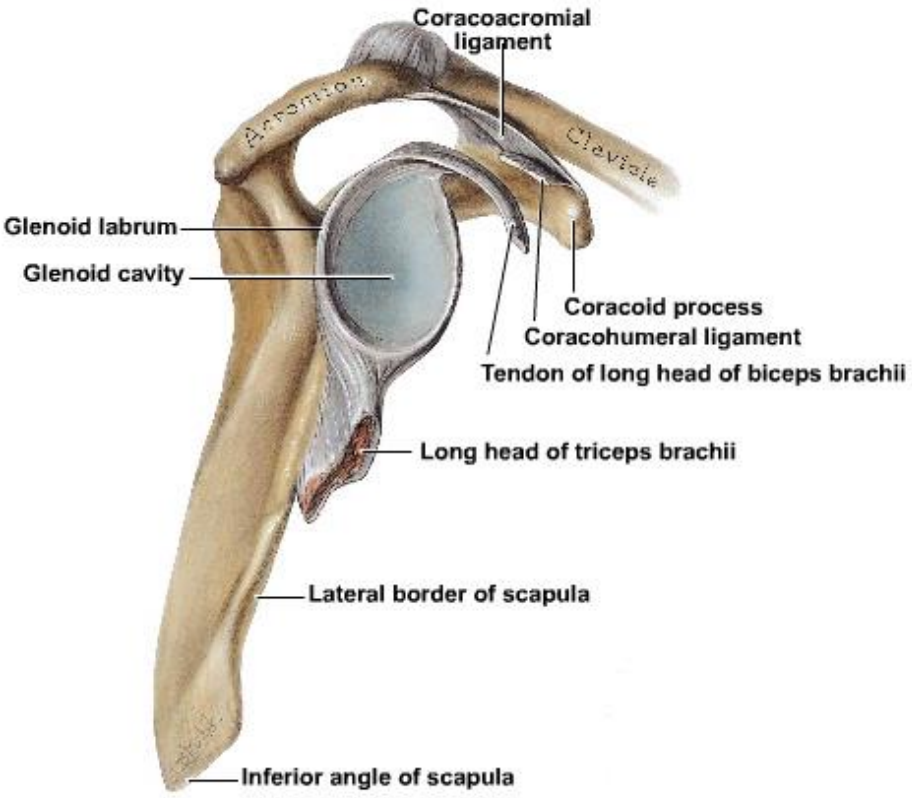
## Shoulder Joint Stabilizers

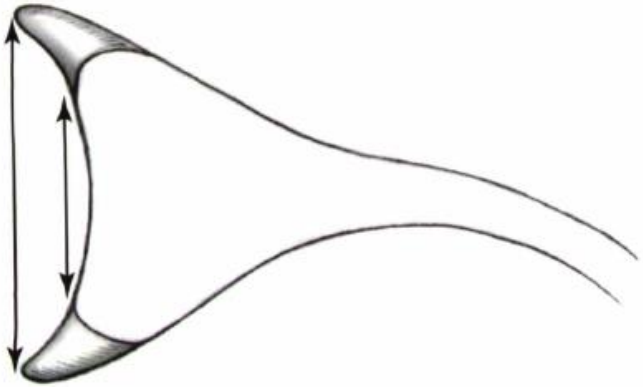
- Bony anatomy
- Glenoid labrum
- Joint capsule
- Rotator cuff muscles
- Glenoid version
- Negative intraarticular pressure
- Synchronous mobility of the scapula and humeral head

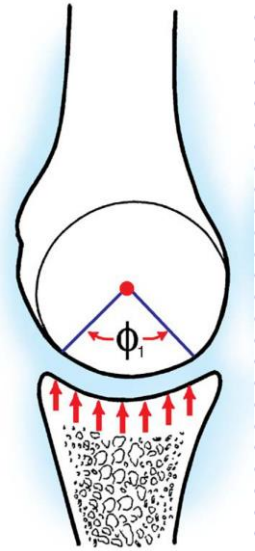


# Glenoid labrum (fibrocartilaginous ring)

- ⬆ surface area and depth of glenoid cavity (50%)
- point of attachment for GH ligaments and long head of biceps
- chock block" to humeral head translation

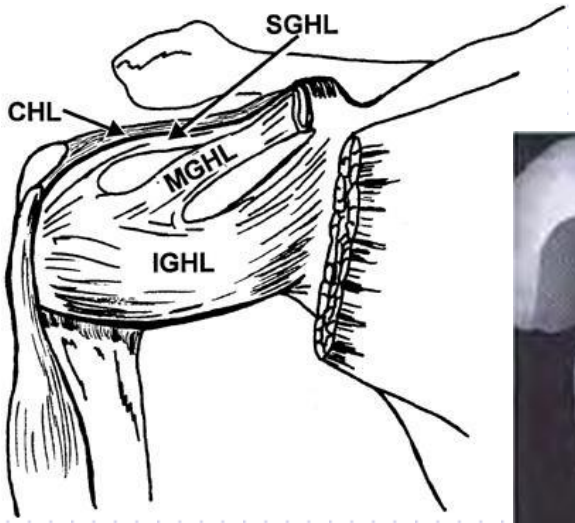


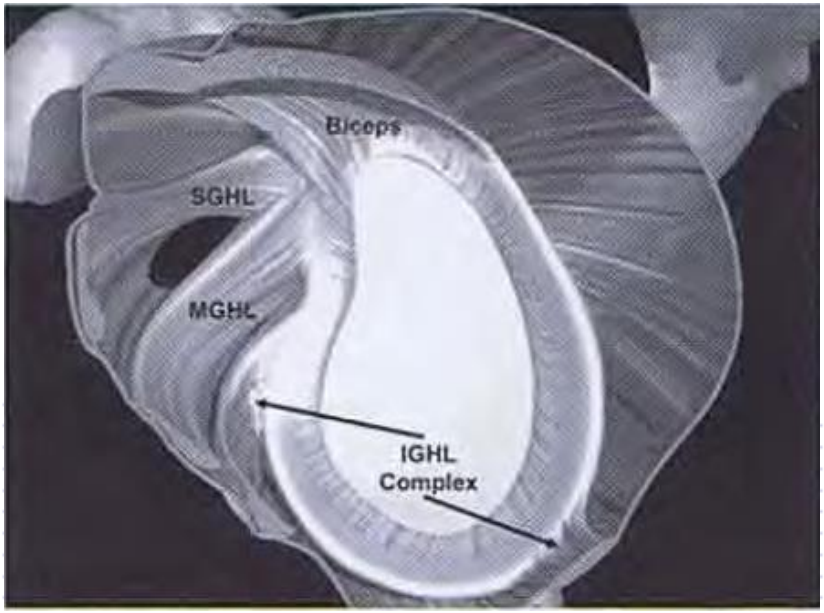



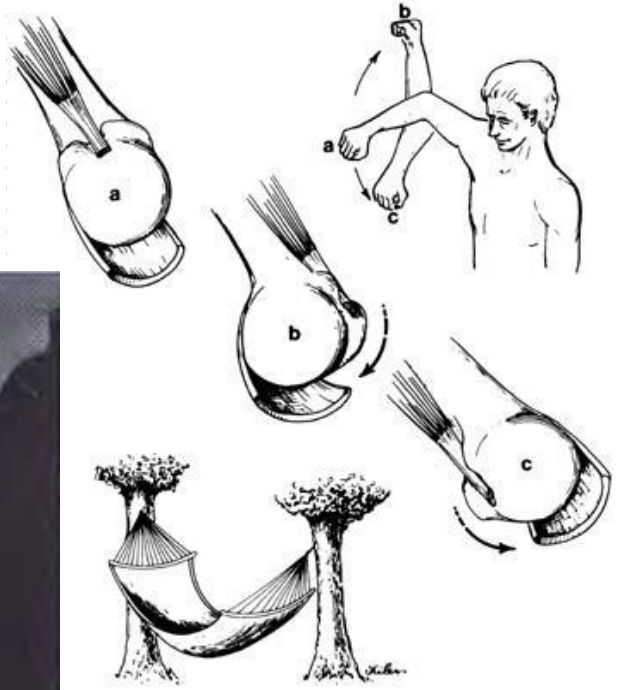


# Joint capsule (capsuloligamentous complex)

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

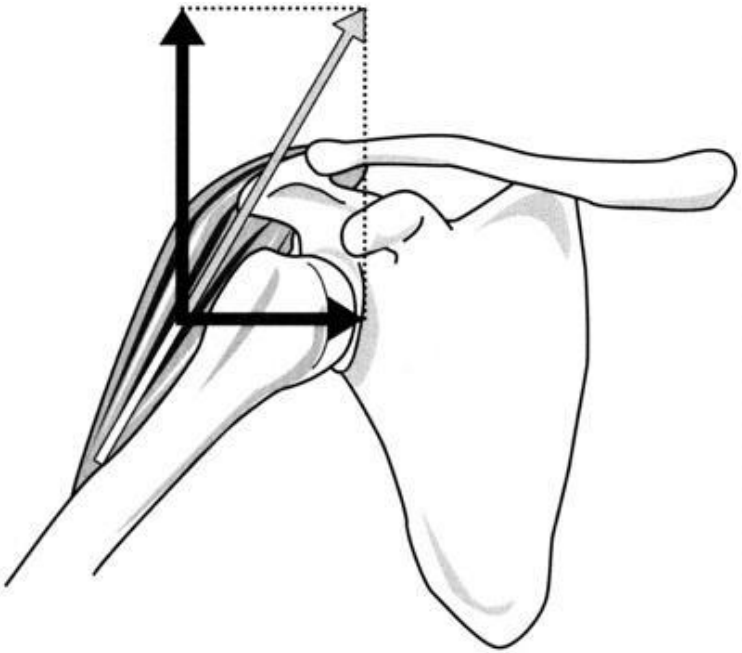


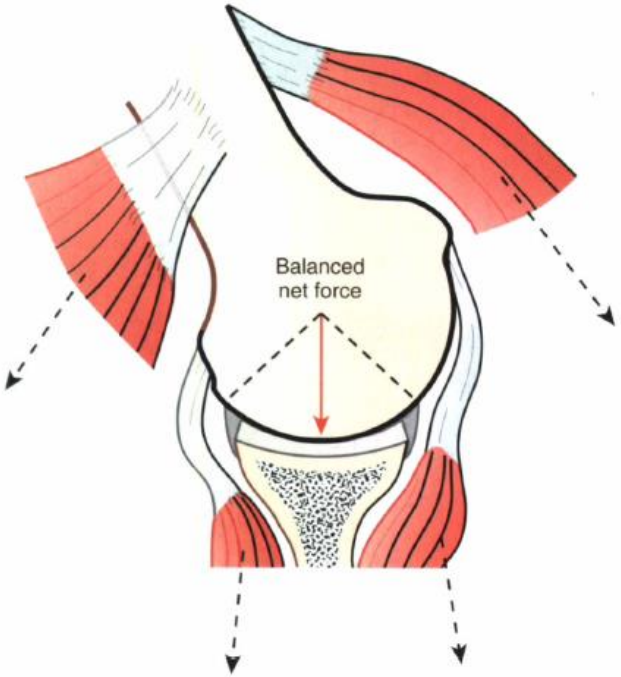



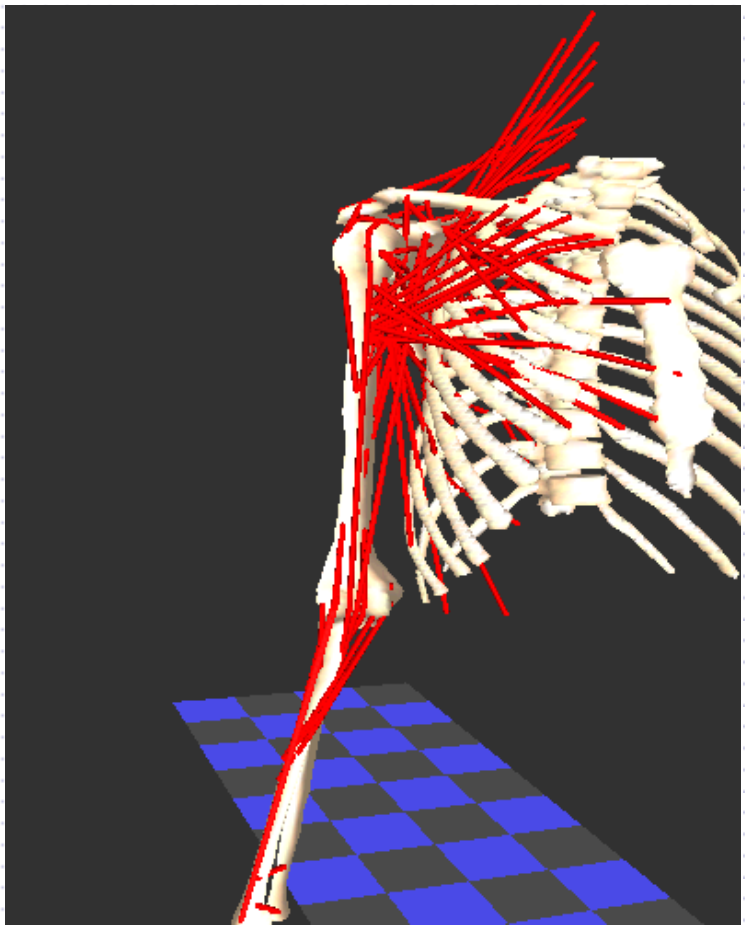
# RC , deltoid, scapular muscles & long head of the biceps (Dynamic stabilizers)

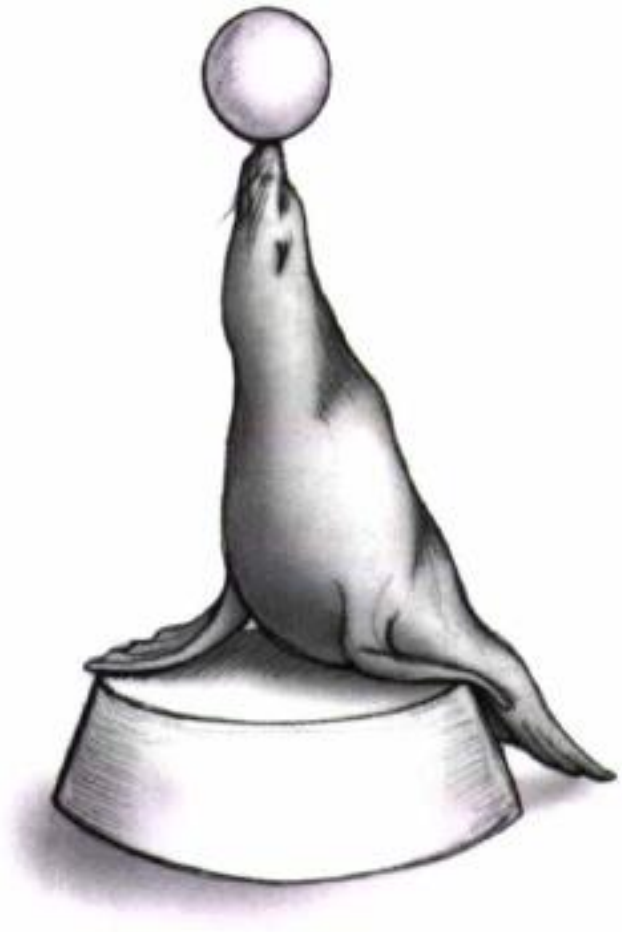
- **concavity-compression mechanism**



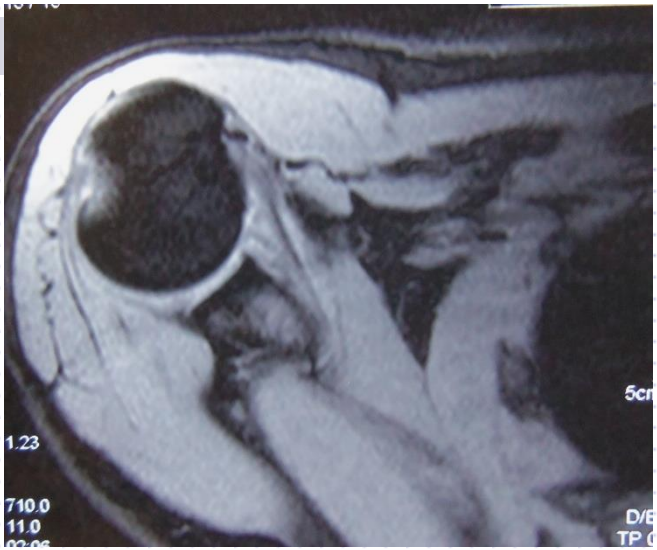


# Synchronous mobility of the scapula and humeral head

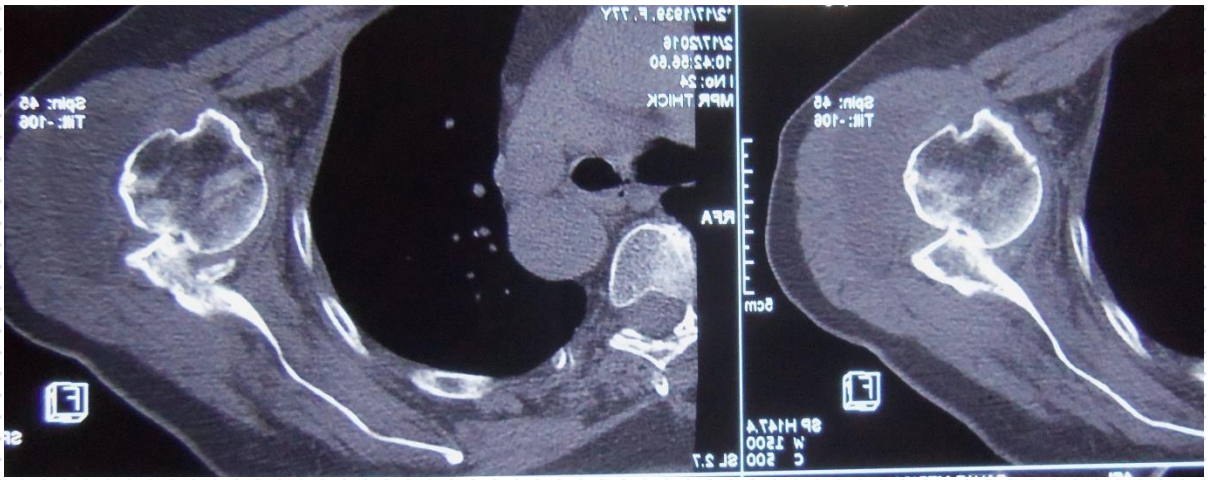




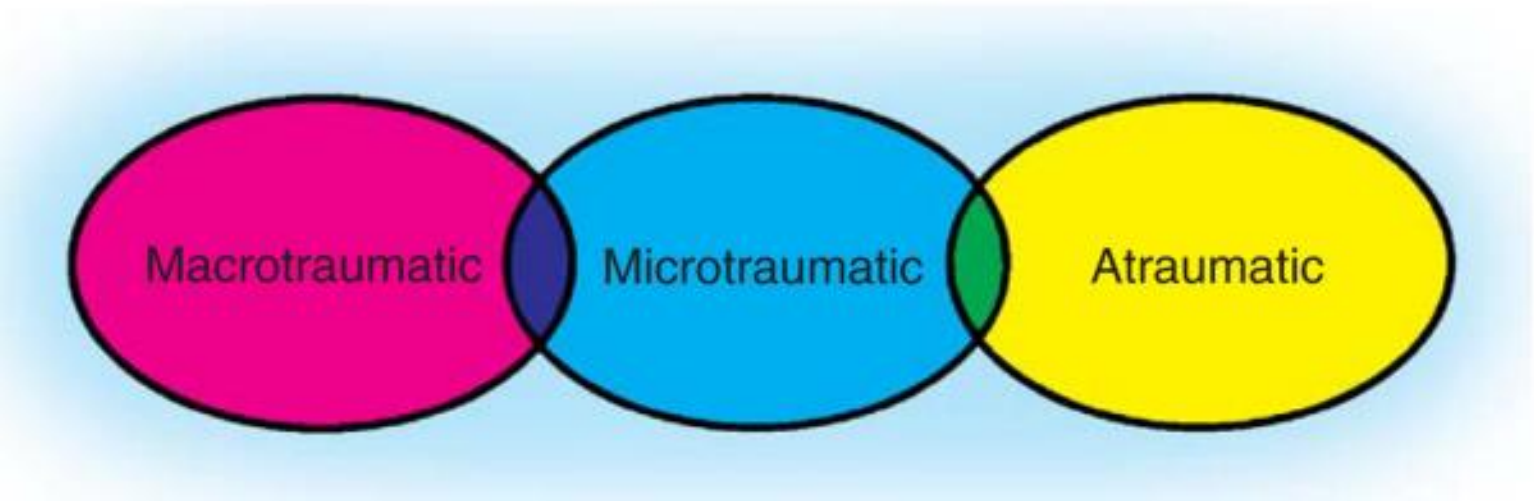
# Pathology



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



# Matsen's classification system




## TUBS or "Torn Loose"

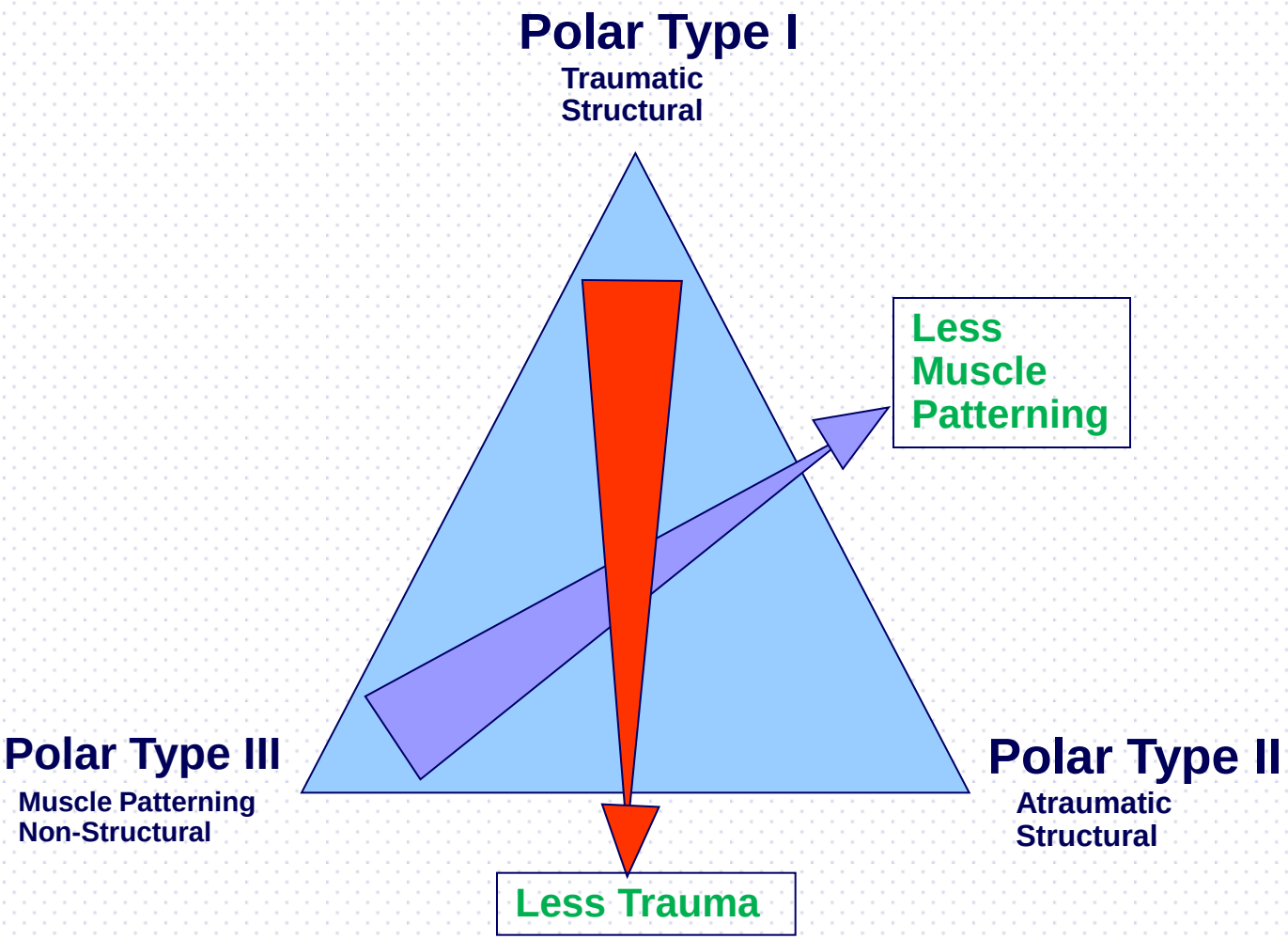
- **T**raumatic aetiology
- **U**nidirectional instability
- **B**ankart lesion is the pathology
- **S**urgery is required

## AMBRI or "Born Loose"

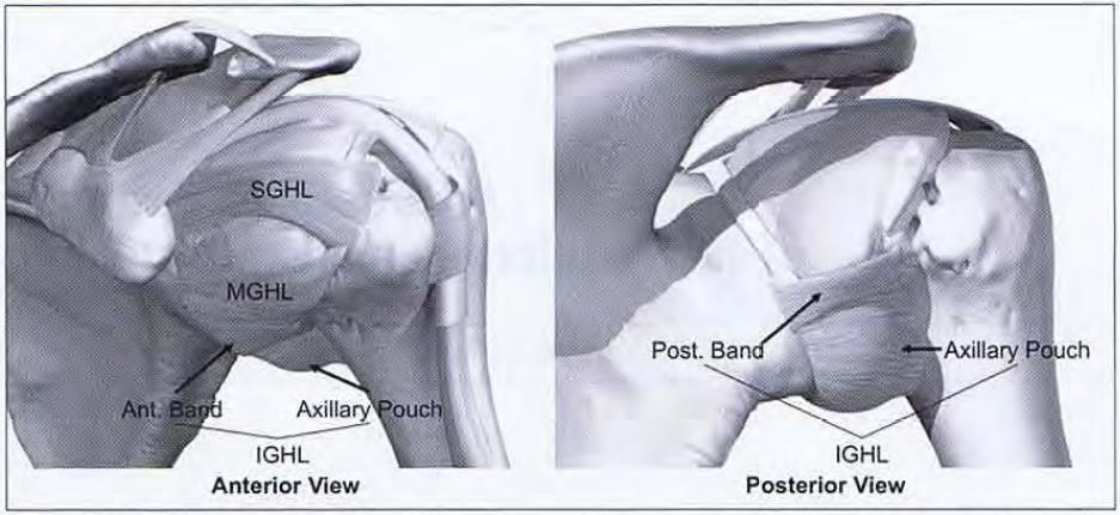
- **A**traumatic:
- **M**ultidirectional instability
- **B**ilateral: asymptomatic shoulder is also loose
- **R**ehabilitation
- **I**nferior capsular shift: surgery required if conservative measures fail

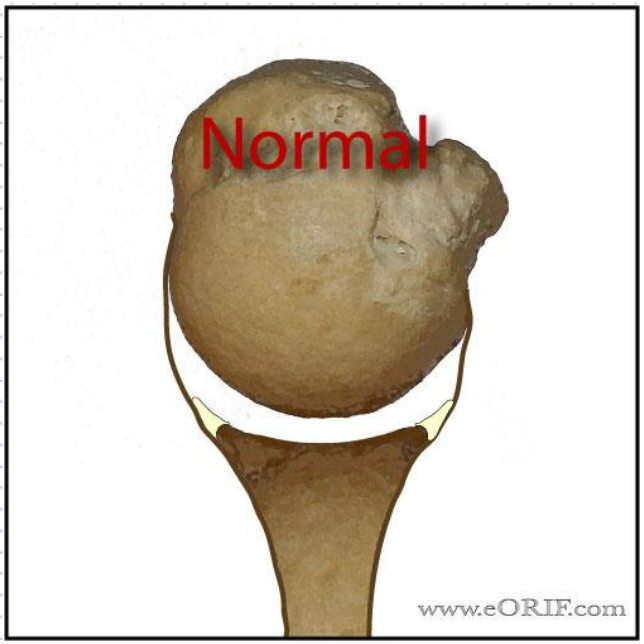
# Stanmore Classification (Bayley Triangle)

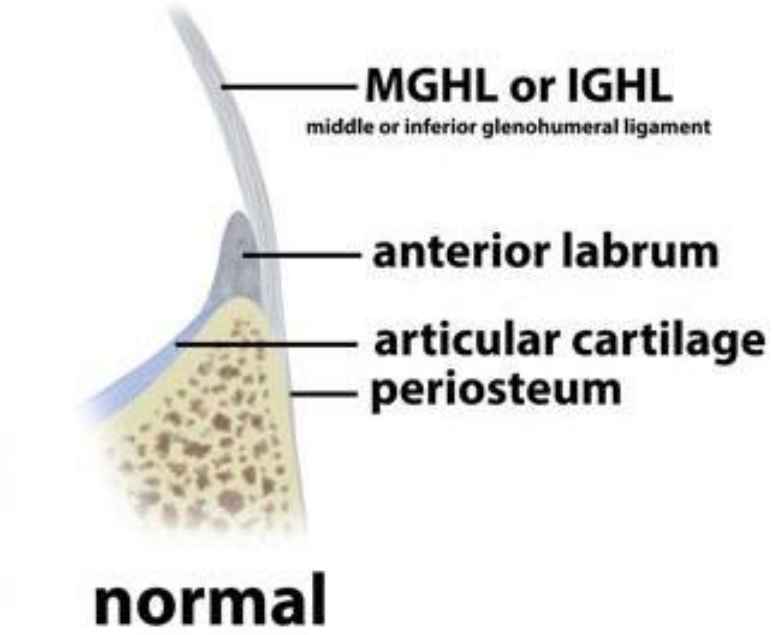
*Lewis, Kitamura & Bayley*
*Current Orthopaedics. 18:97-108. 2004*



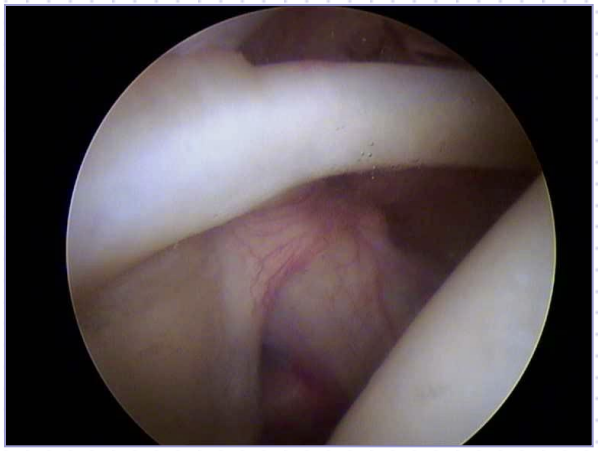
# Normal capsulolabral



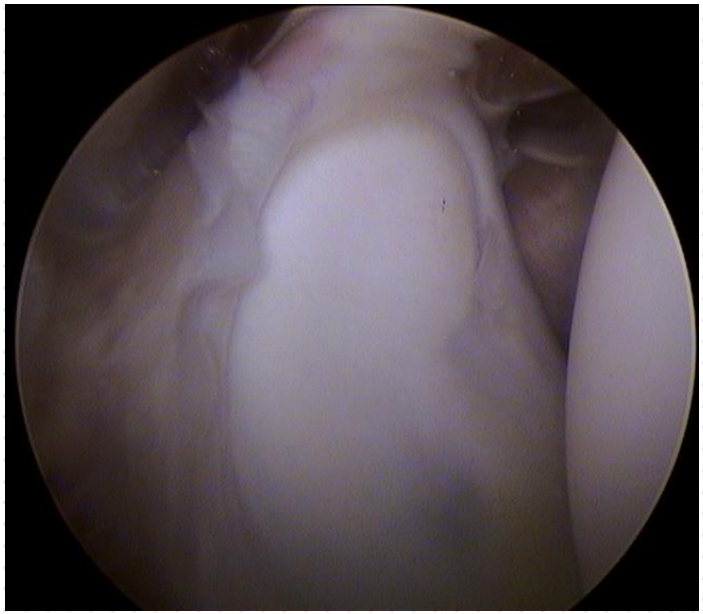



- **Shoulder arthroscopy** evolved our understanding of the anatomy and pathophysiology of the capsulolabral



## Glenoid Labrum

- **Loosely Attached:**
  - **Superior**
  - **Anterosuperior**
- **Firmly Attached:**
  - **Inferior**



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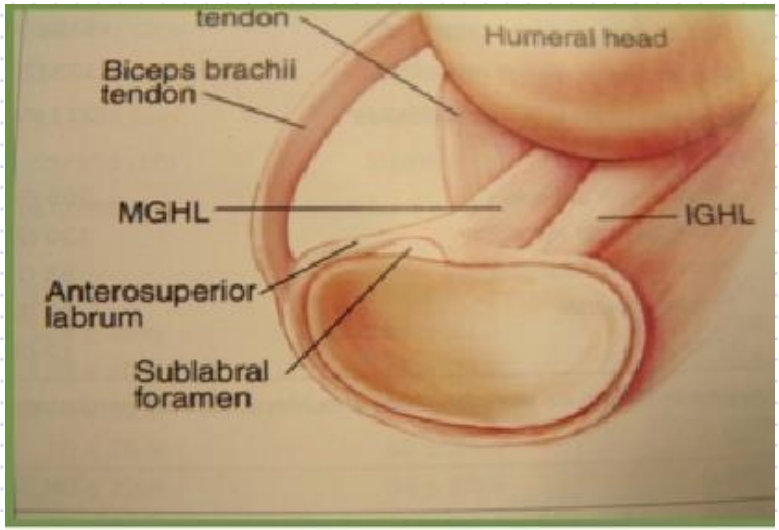
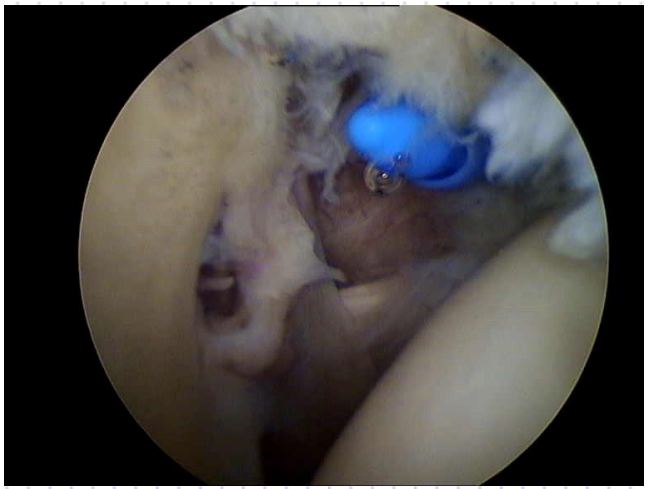
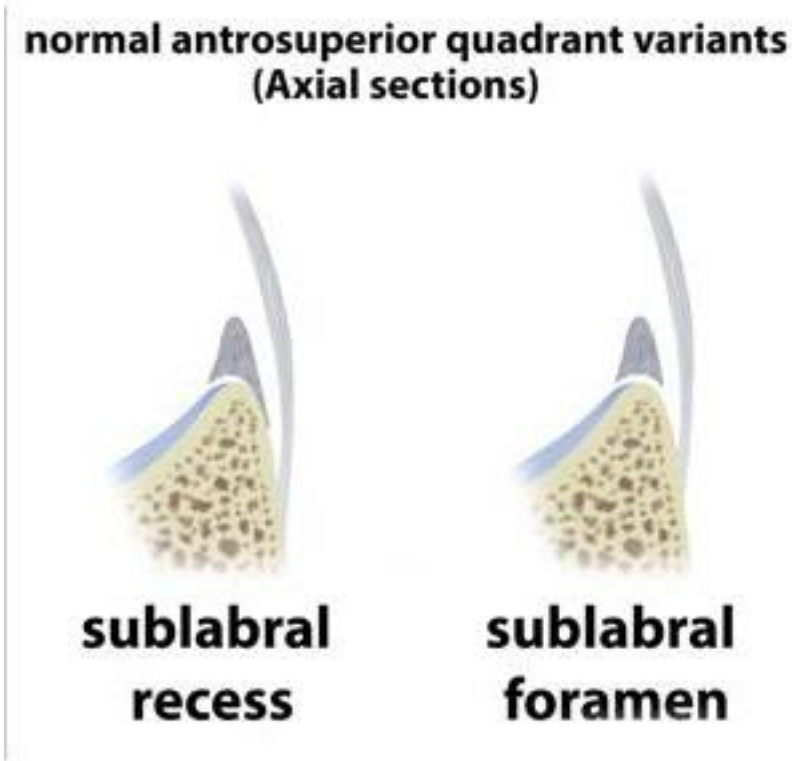
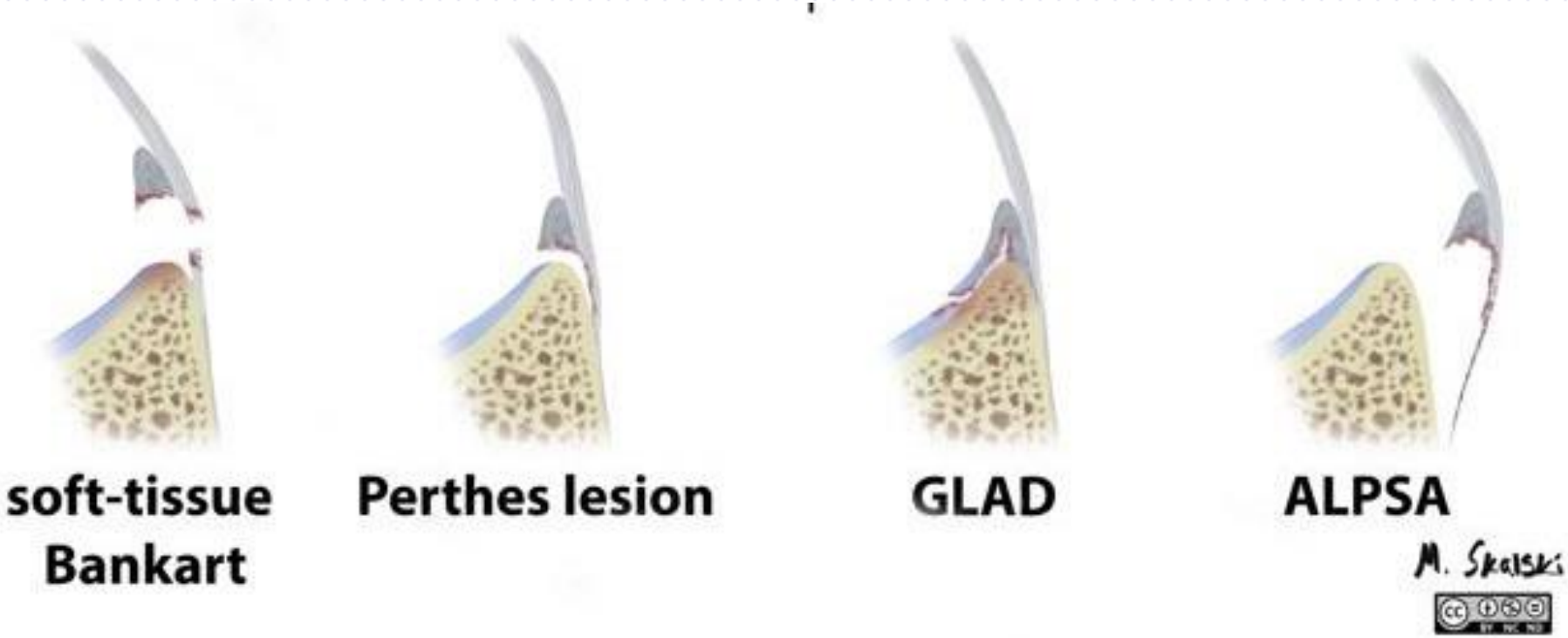




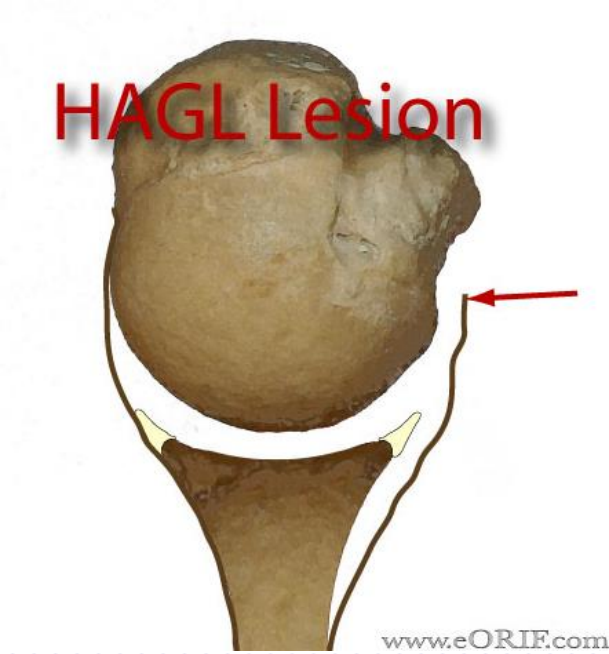
# Labral pathology



# Capsular pathology

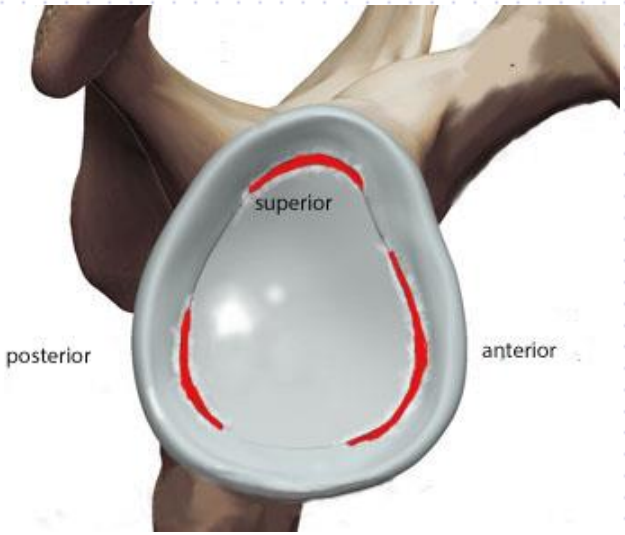
**HAGL lesion**

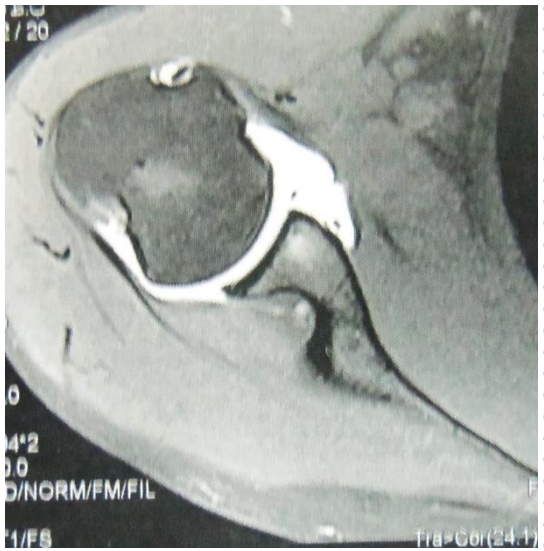
(Humeral Avulsion Glenohumeral Ligament)



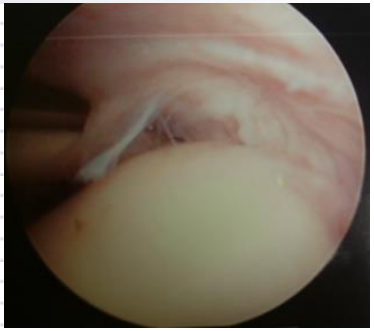

# Associated injuries in ant. shoulder instability

- Bony bankart Lesion
- Glenoid bone loss (inverted pear glenoid)
- Hill-Sachs lesions
  - Engaging
  - Non engaging
- Other Labral lesion
  - SLAP
  - Post. bankart
- Rotator cuff tear



# Pathological Lesions



SLAP Tear

Rotator Cuff Tear

Bony Bankart

Bankart Tear

Posterior Labral Tear

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# Operative Treatment of Anterior Shoulder Instability

## Soft tissue procedures:

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

## Bony procedures:

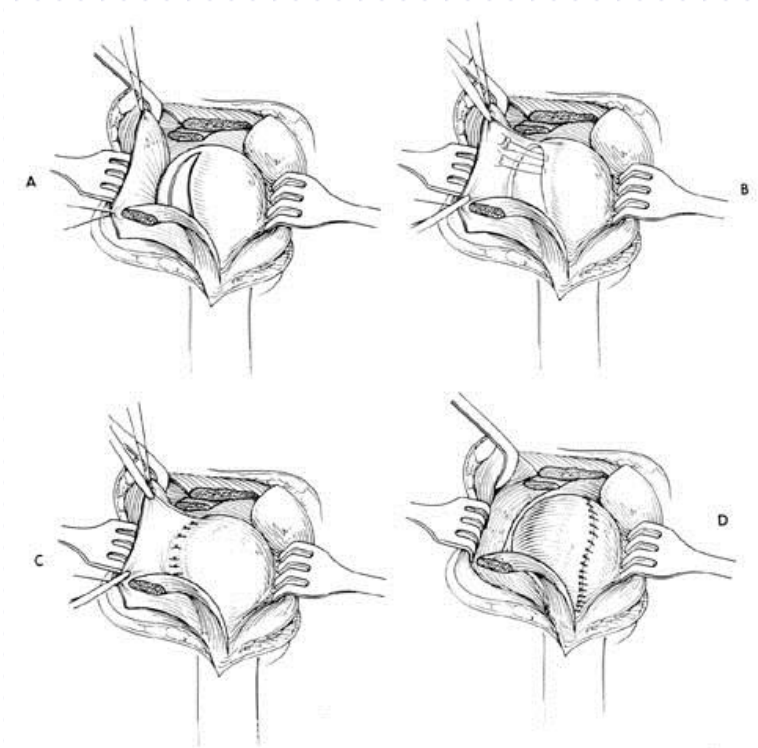
- Coracoid Transfer (Bristow-Latarjet Procedure)
- Bone Block (Eden-Hybbinette Procedure )

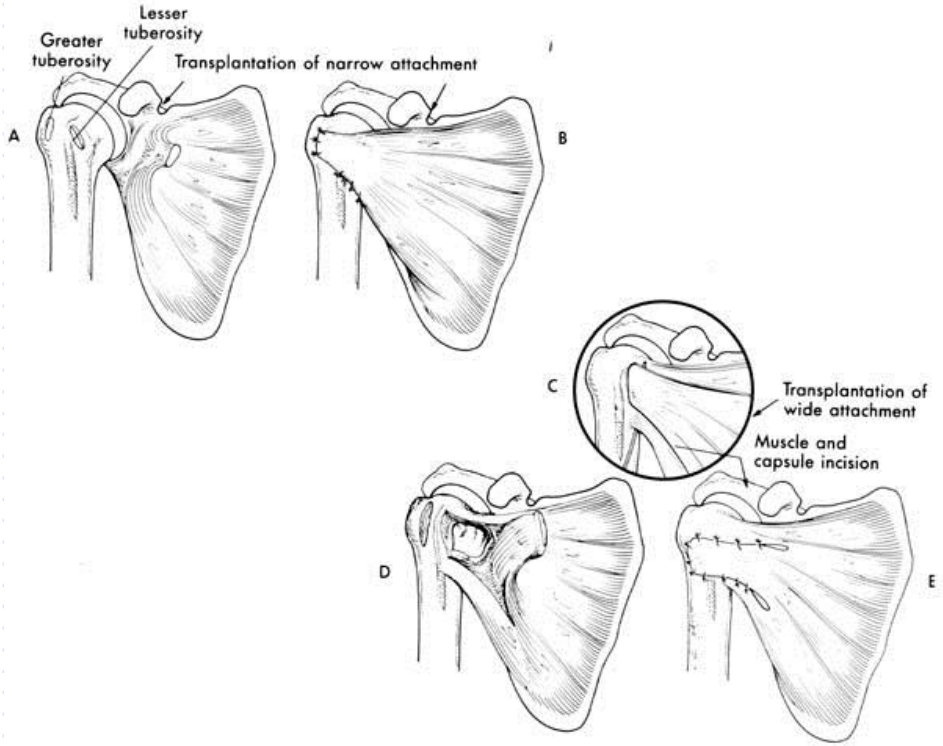
# Soft tissue procedures:

## Subscapularis Muscle Procedures

History

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

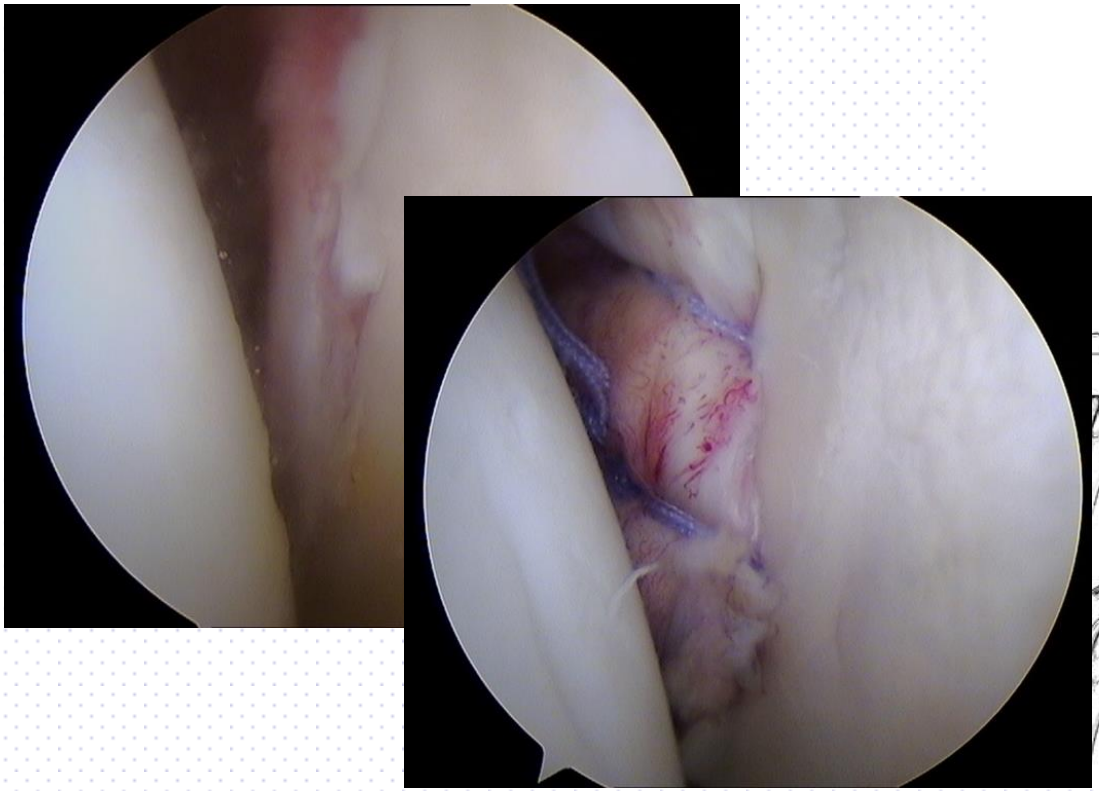


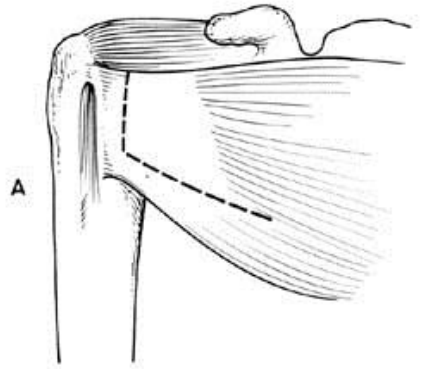



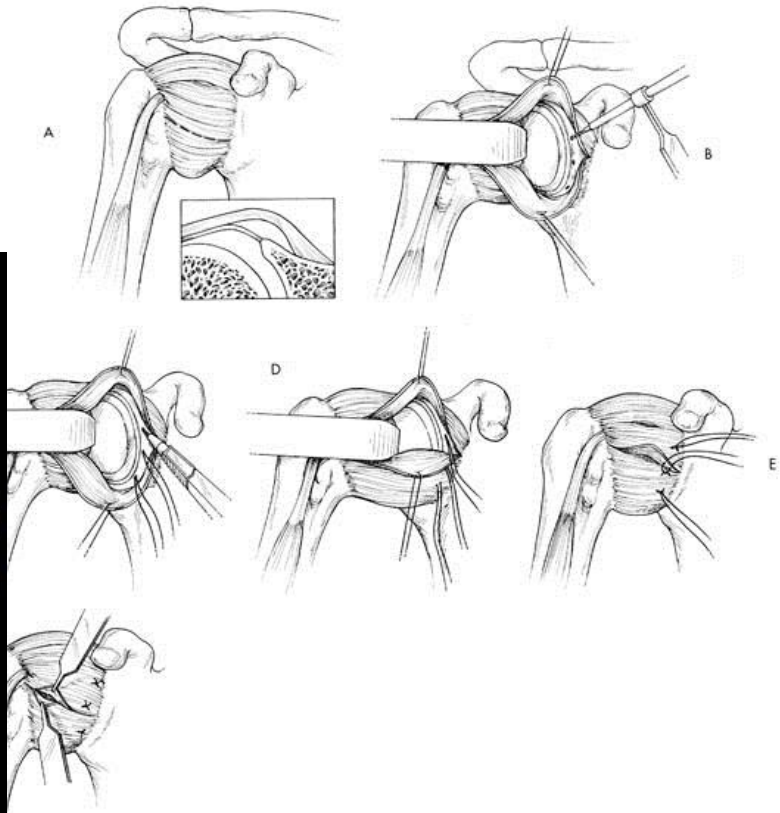
# Soft tissue procedures:

## Bankart Procedure

- gold standard
- recurrence rates from 5% to 10%
- Open or arthroscopic



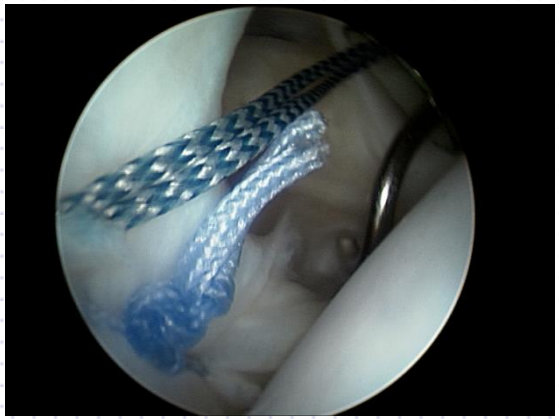


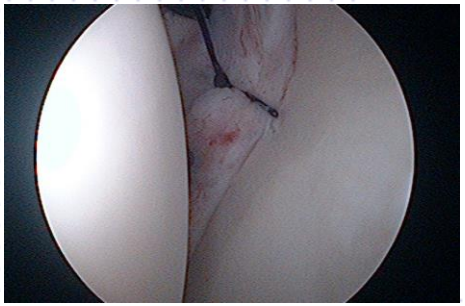



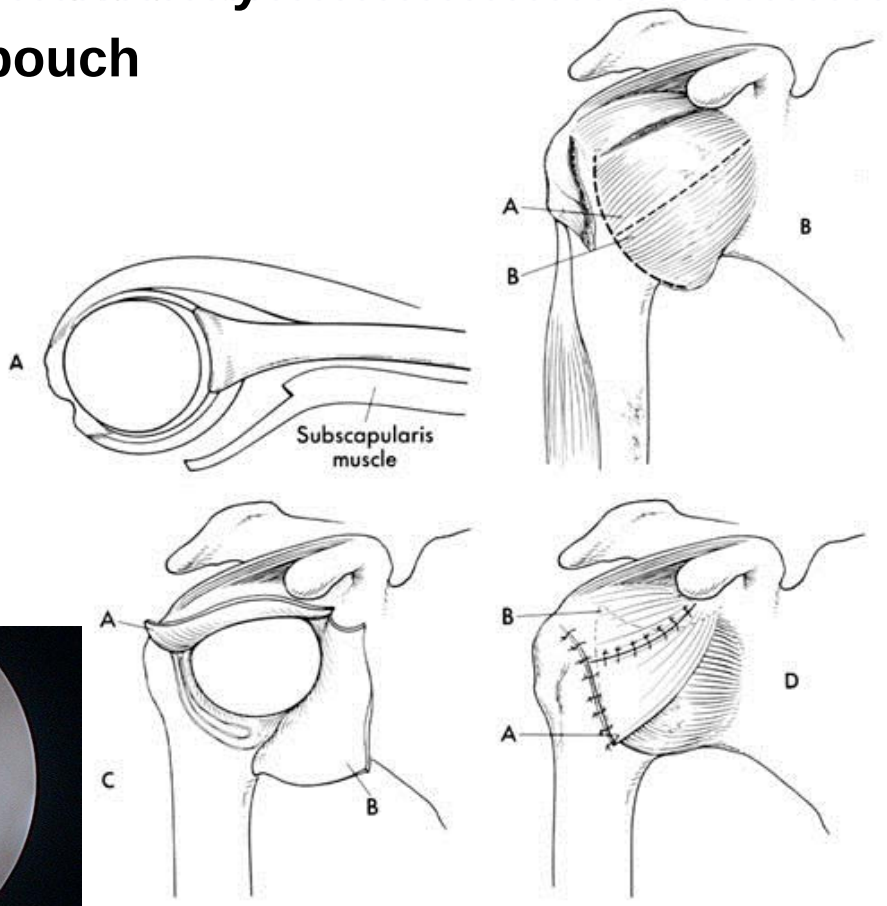
# Soft tissue procedures:

## Capsular Reconstruction (Neer capsular shift)

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



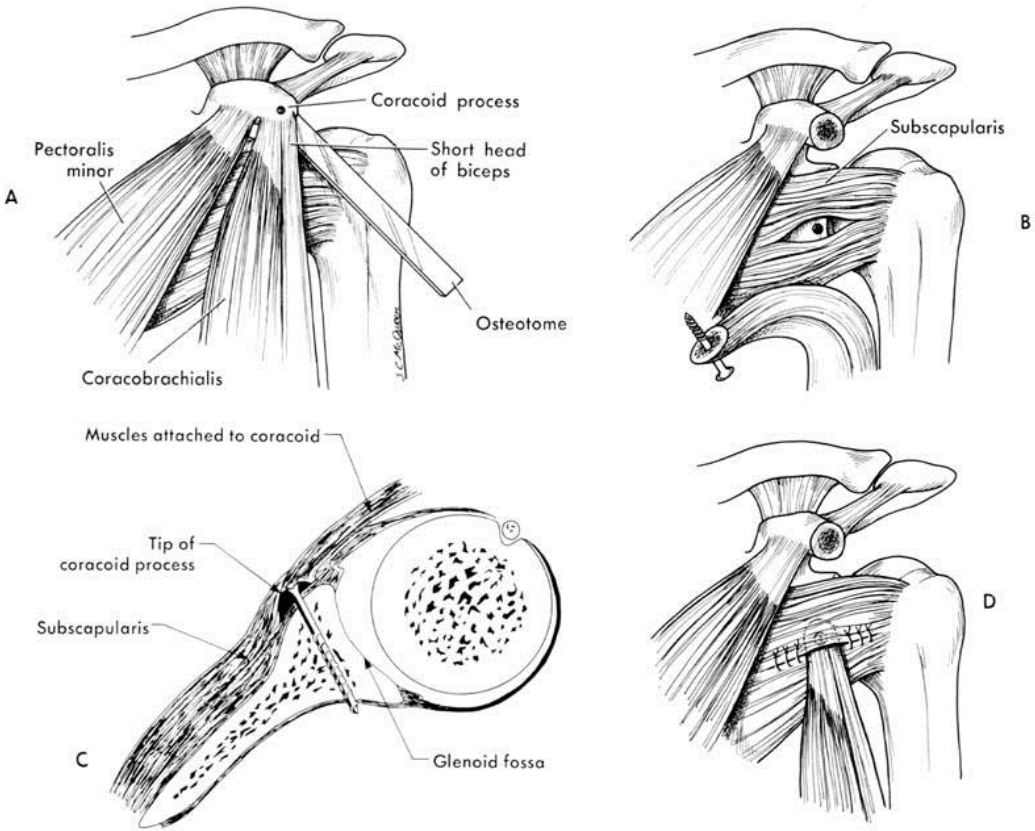




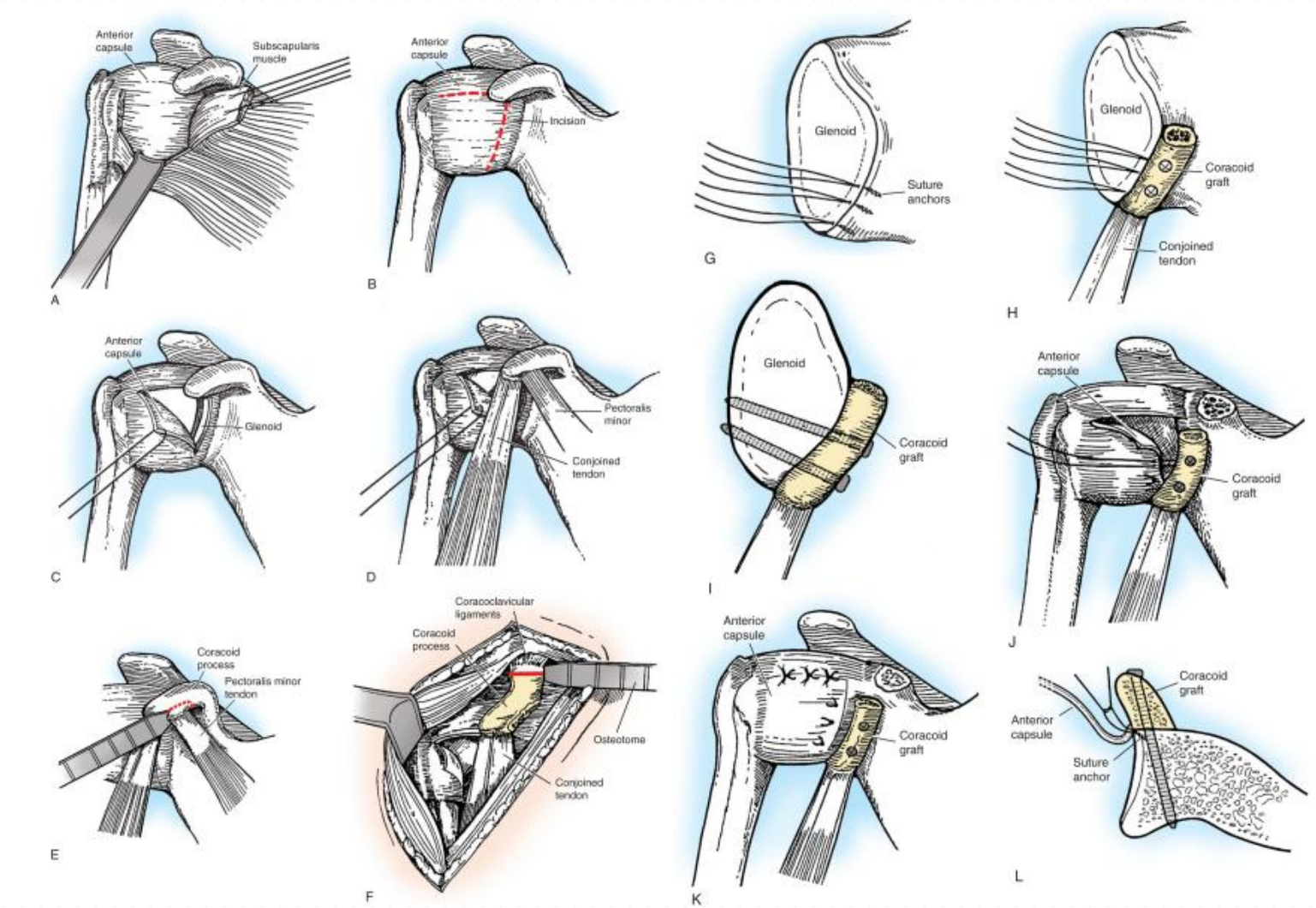
# Bony procedures:

## Coracoid Transfer (Bristow-Latarjet Procedure)

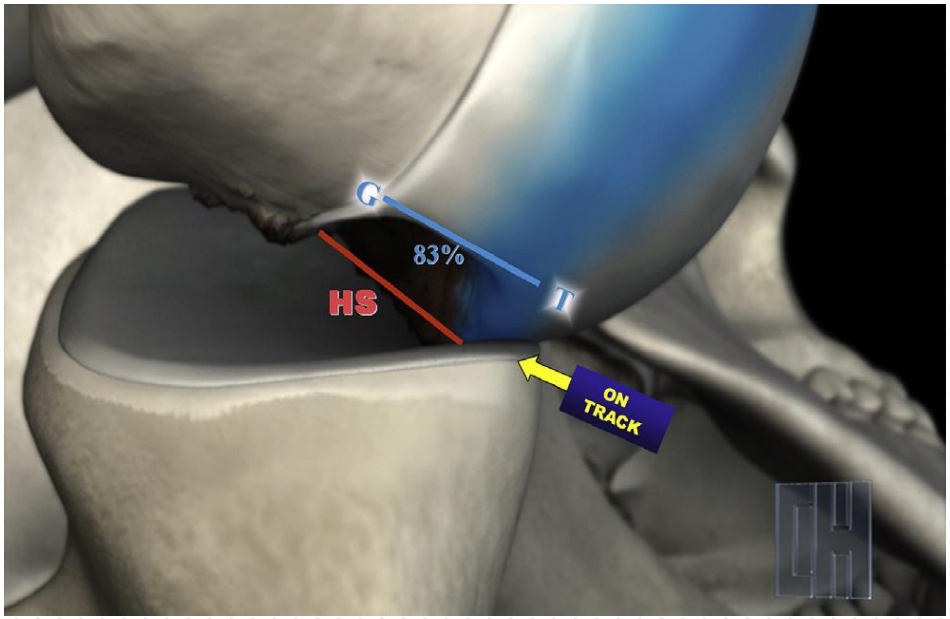
- Not correcting a labral or capsular defect
- Restriction of ER
- Possibility of nerve damage
- Decrease of IR power
- Osteoarthritis ↑

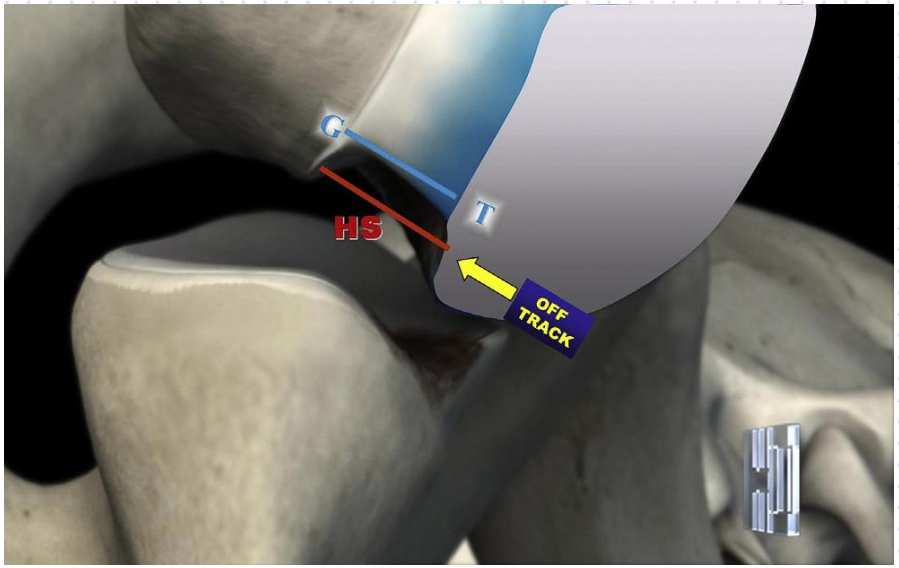


***Burkhart SS, DeBeer JF. Arthroscopy 16:677, 2000.)***



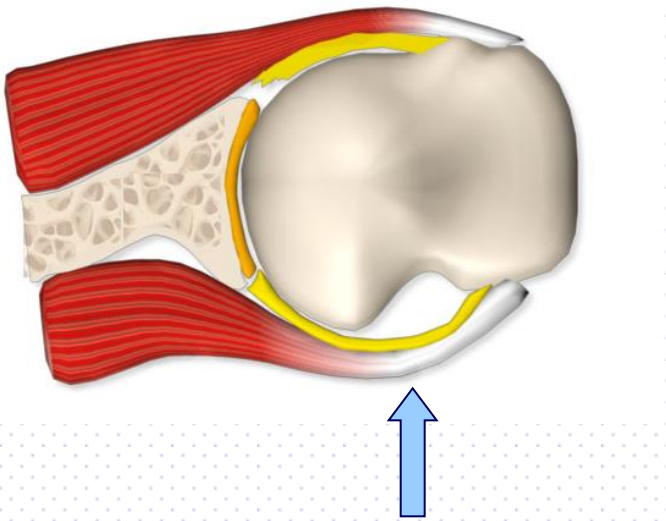
**Di Giacomo G, Itoi E, Burkhart SS**. Evolving concept of bipolar bone loss and the Hill-Sachs lesion: from "engaging/non-engaging" lesion to "on-track/off-track" lesion. **Arthroscopy 2014;30:90-98**

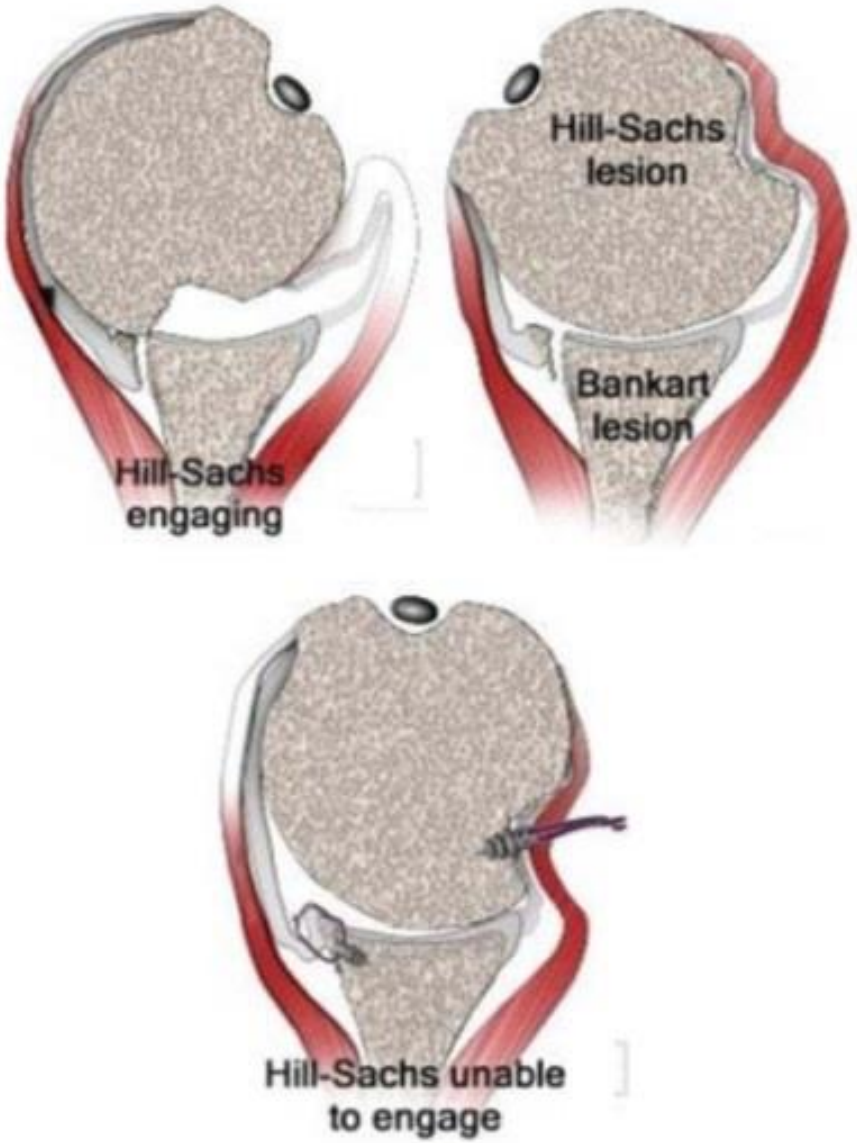


# Engaging Hill-Sachs Lesion

→ **Remplissage**





# Summary

- Advancement in arthroscopic techniques
  - development new instrument & implants
- Surgeons knowledge and experience


**Recognition and proper treatment of instability pathology**

**Thank you for attention**