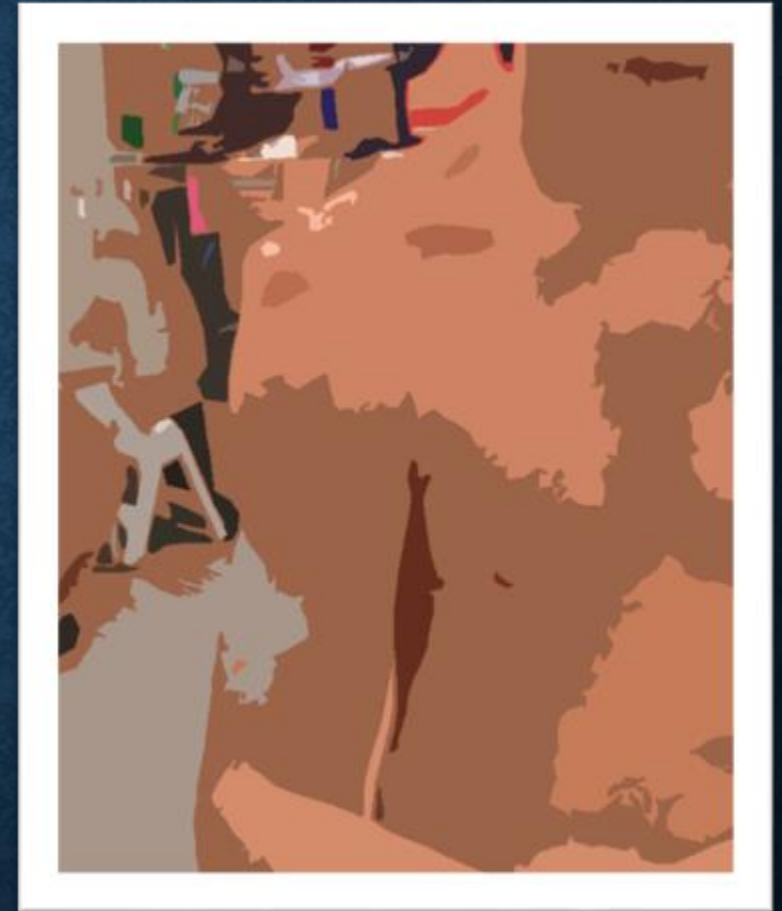


# SHOULDER INSTABILITY

Josh Bowler, MD

Magic City Sports Medicine Conference

May 20, 2023

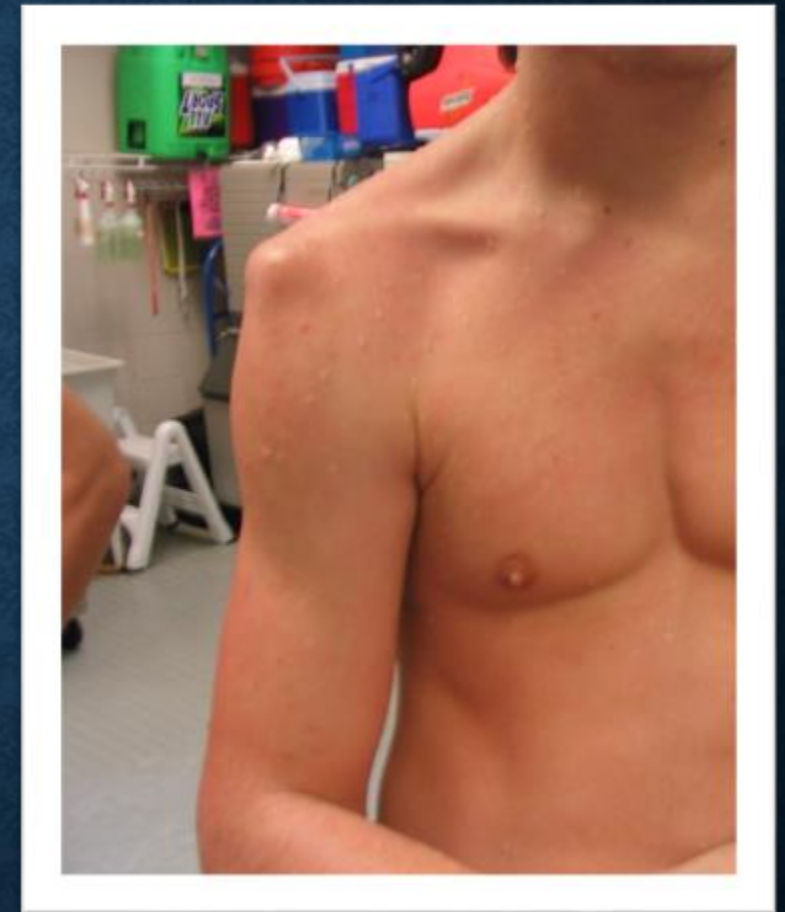


# SHOULDER INSTABILITY

Josh Bowler, MD

Magic City Sports Medicine Conference

May 20, 2023





18 M - RHD

Football injury

2 Previous Dislocations

Unable to be reduced and sent to ER



# RADIOGRAPHY

G1.2G#0.60+0.10,MDT1.5AM0.4,C\*1.0\*1.0



G1.2G#0.60+0.10,MDT1.5AM0.4,C\*1.0\*1.0

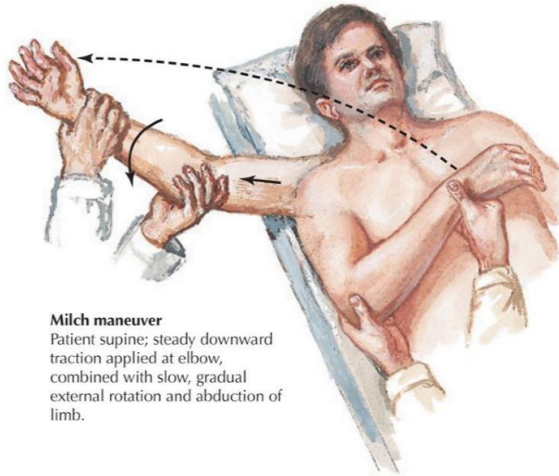


Reduction of Anterior Dislocation of Glenohumeral Joint



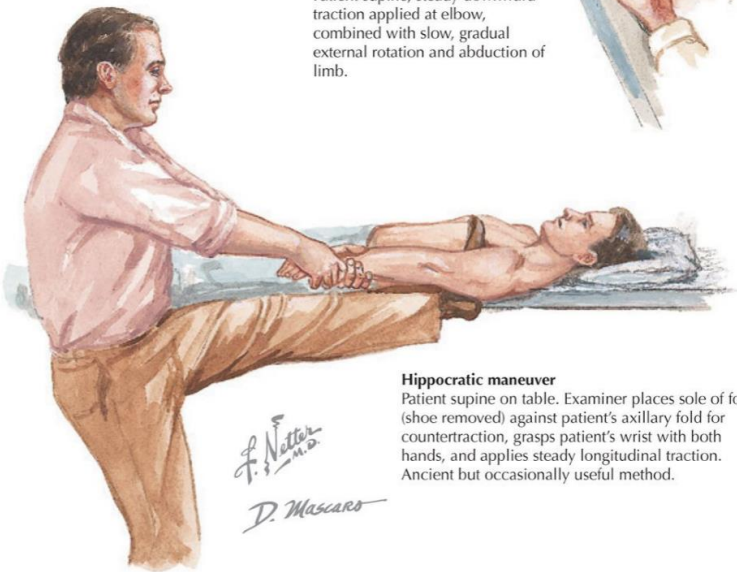
**Stimson maneuver**

Patient prone on table with affected limb hanging freely over edge; 10–15-lb weight suspended from wrist. Gradual traction overcomes muscle spasm and in most cases achieves reduction in 20–25 minutes.



**Milch maneuver**

Patient supine; steady downward traction applied at elbow, combined with slow, gradual external rotation and abduction of limb.



**Hippocratic maneuver**

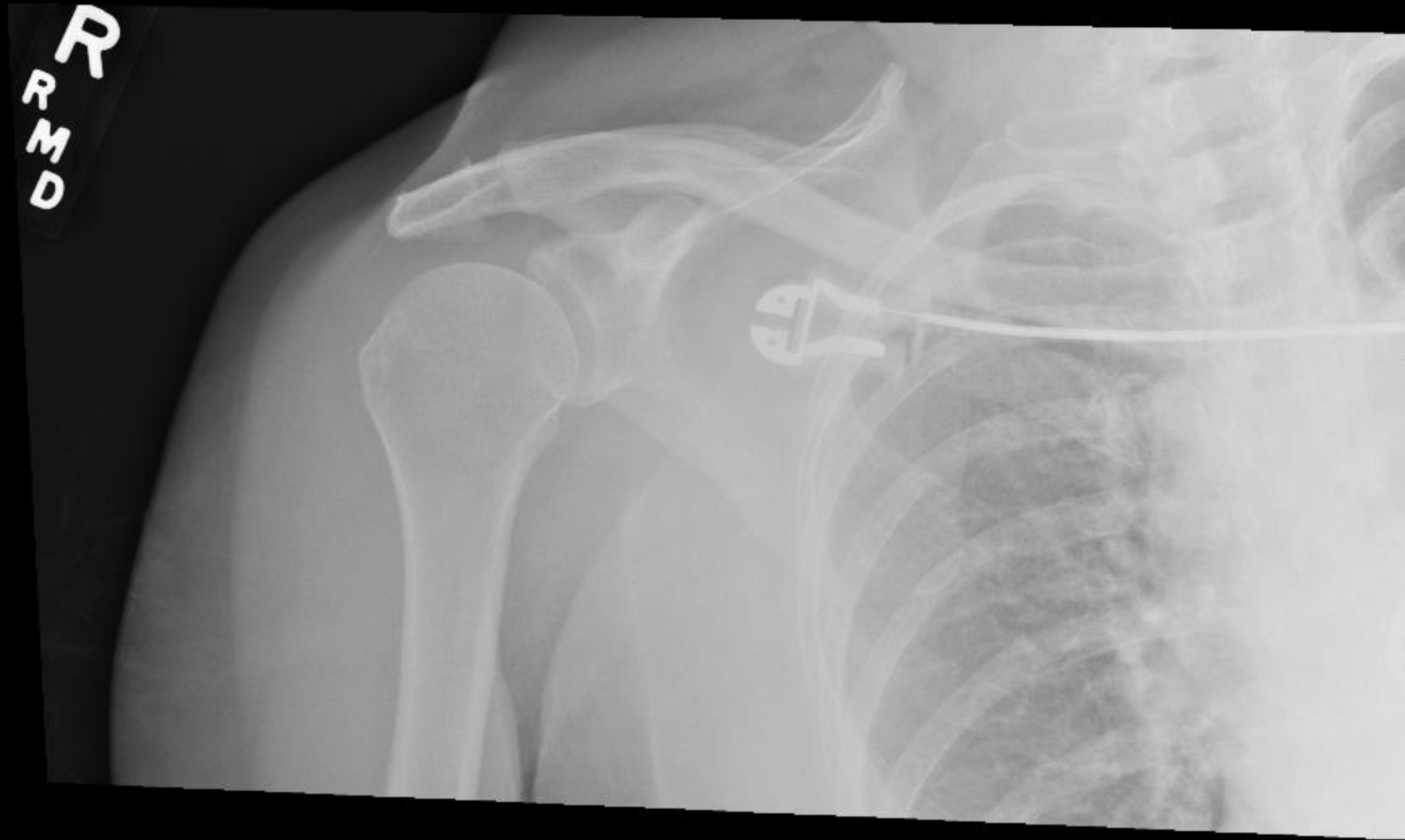
Patient supine on table. Examiner places sole of foot (shoe removed) against patient's axillary fold for countertraction, grasps patient's wrist with both hands, and applies steady longitudinal traction. Ancient but occasionally useful method.

*F. Netter M.D.*  
*D. Mascaro*

# REDUCTION TECHNIQUES

- Stimson – prone with 10-15 lbs. of weight hanging from hand (20-25 minutes)
- Milch – supine; downward traction at the elbow combined with gradual external rotation and abduction
- Hippocratic – supine; sole of examiner's foot into axillary fold for counter-traction then applies longitudinal traction to patient's arm

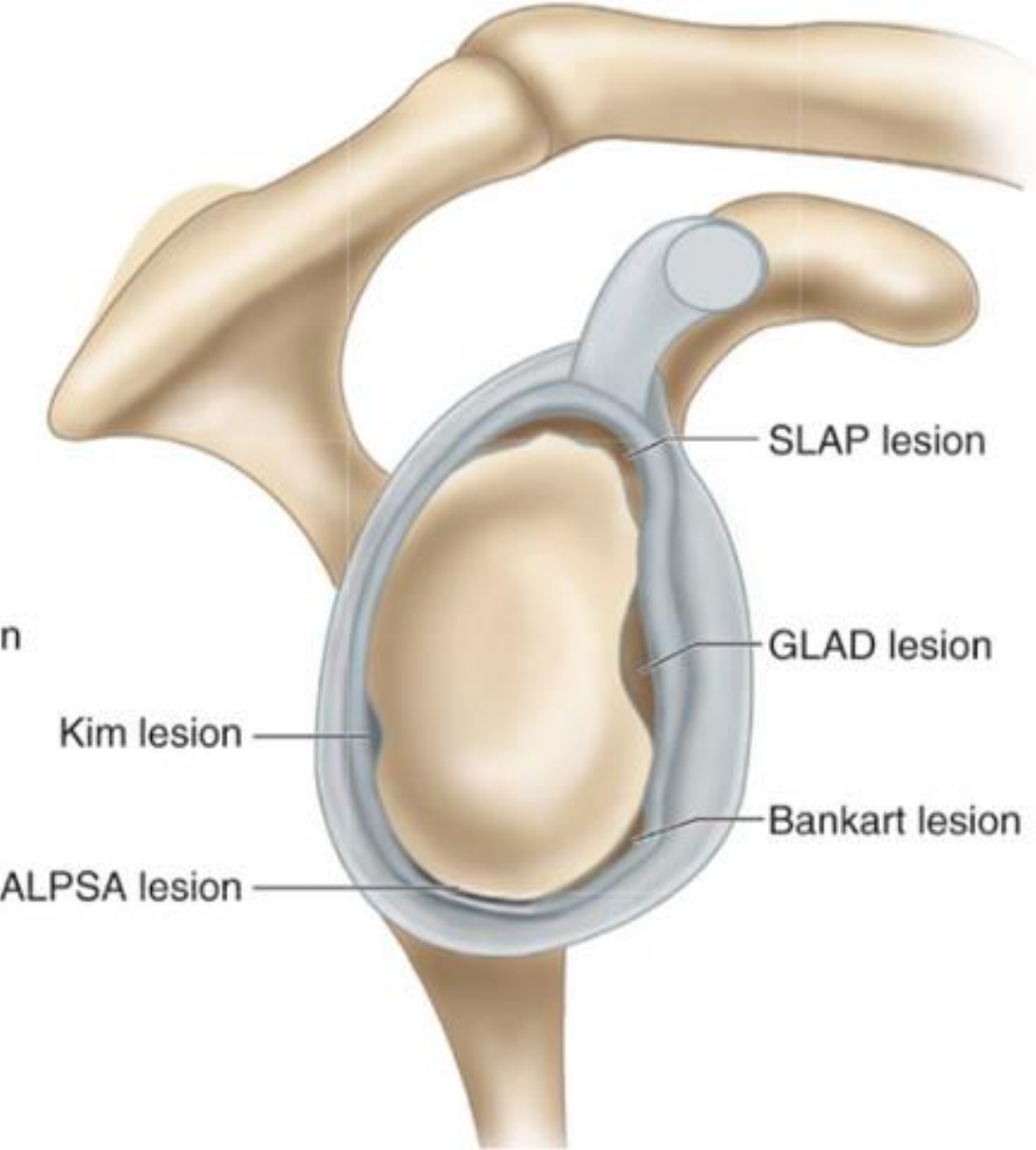
# IMMEDIATE POST-REDUCTION



# EPIDEMIOLOGY

- Incidence: Traumatic anterior shoulder instability is approximately 1.7% annually.
- Recurrence rates: AGE of index injury is most important factor in recurrence rate; inversely related to age:
  - 90% recurrence if younger than 20; 60% recurrence if 20 to 40; less than 10% recurrence if older than 40.
  - Long-term studies with 10-year follow-up showed a 66% if < 22 y/o; 56% if 23-29, and 20% if 30-40.





# ANATOMY

- **Static Stabilizers**
  - **Glenoid**
  - **Labrum**
  - **Glenohumeral Ligaments**
    - SGHL – 0 degrees Abduction
    - MGHL – 45 degrees
    - IGHL – 90 degrees and ER (anterior band) or IR (posterior band)
- **Dynamic Stabilizers**
  - **Rotator Cuff**
  - **Scapulothoracic Musculature**
  - **Proprioception and Neuromuscular Control**

# ANATOMY

- Static Stabilizers

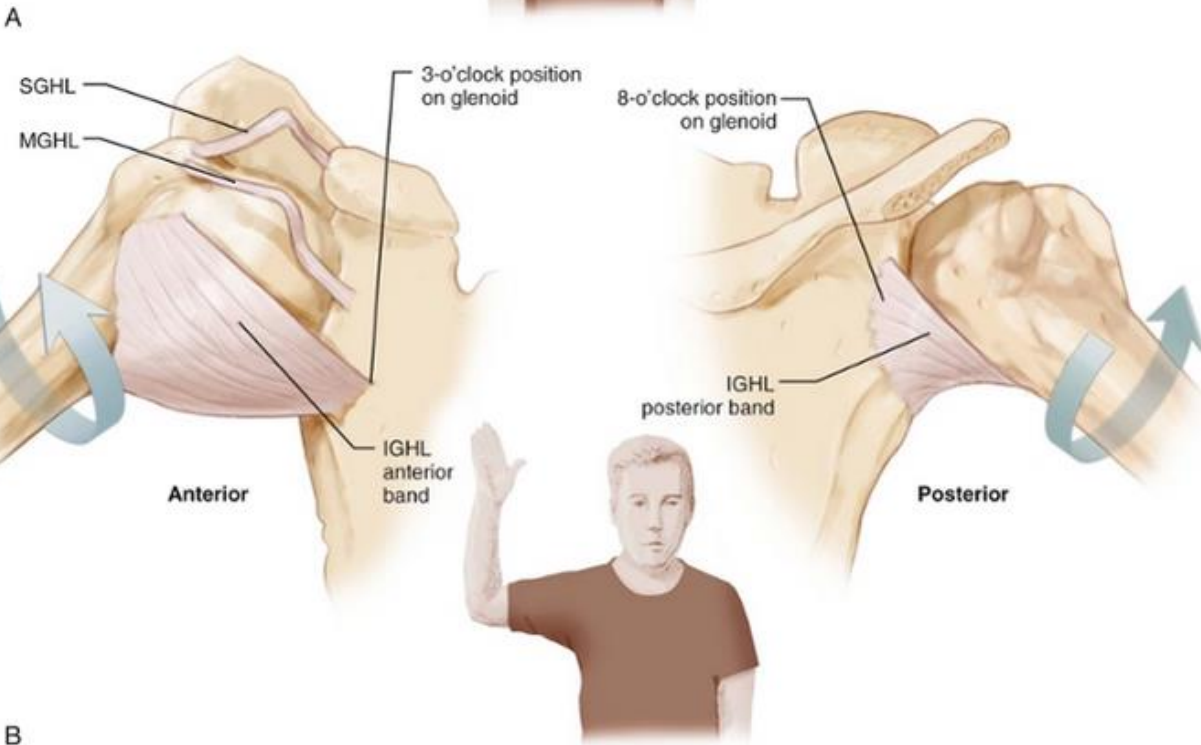
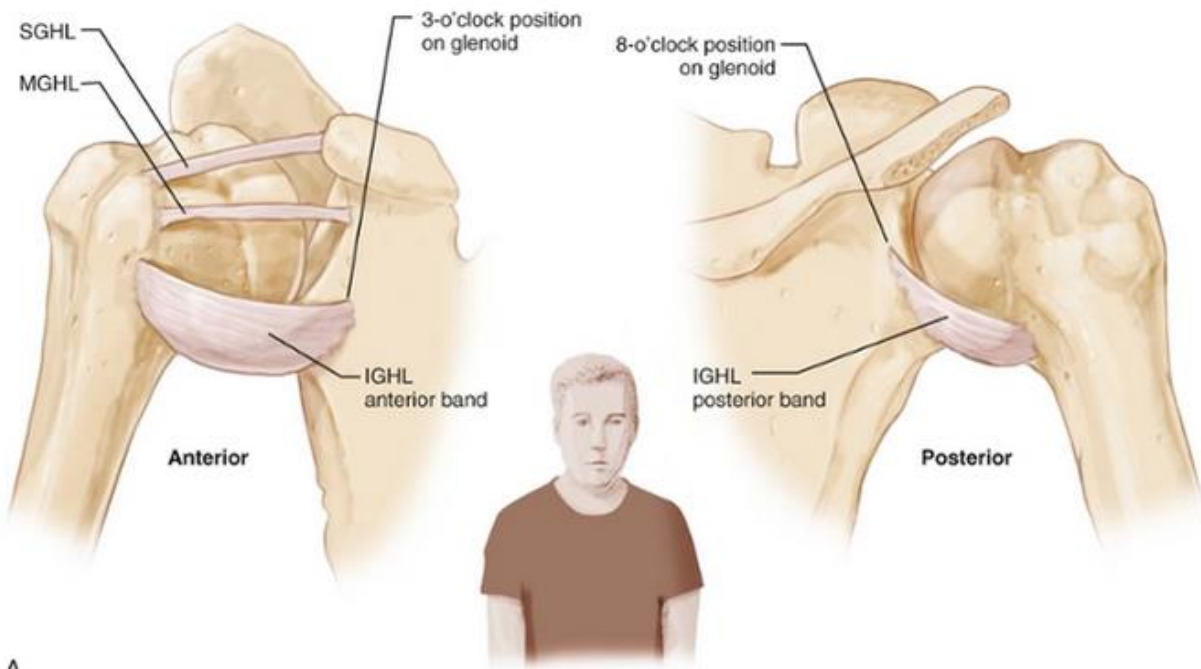
- Glenoid
- Labrum

- **Glenohumeral Ligaments**

- **SGHL – 0 degrees Abduction**
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- Dynamic Stabilizers

- Rotator Cuff
- Scapulothoracic Musculature
- Proprioception and Neuromuscular Control



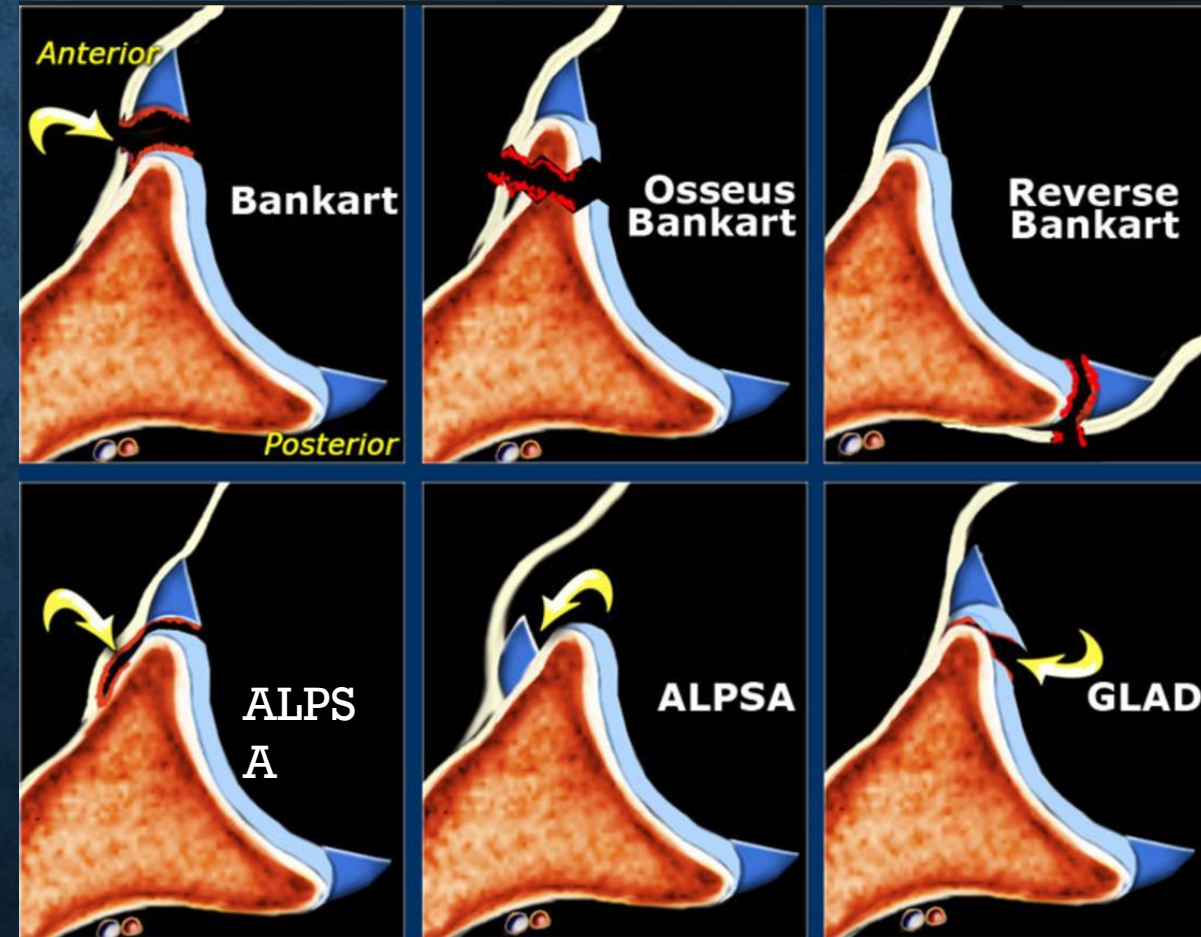
B



# **ALPHABET SOUP**

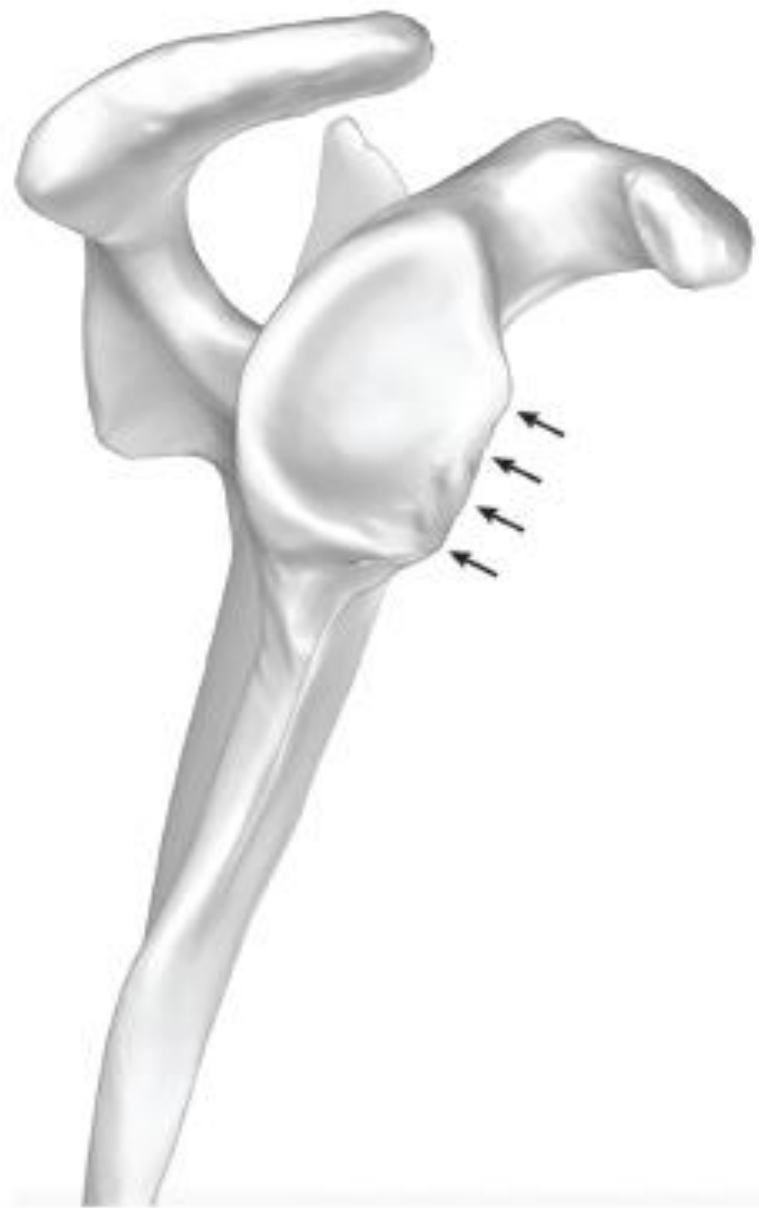
- TUBS
- AMBRI
- HAGL
- GLAD
- ALPSA
- PERTHES
- BANKART
- BONY BANKART
- REVERSE BANKART

# ALPHABET SOUP, BOWL 2



# PATHOANATOMY

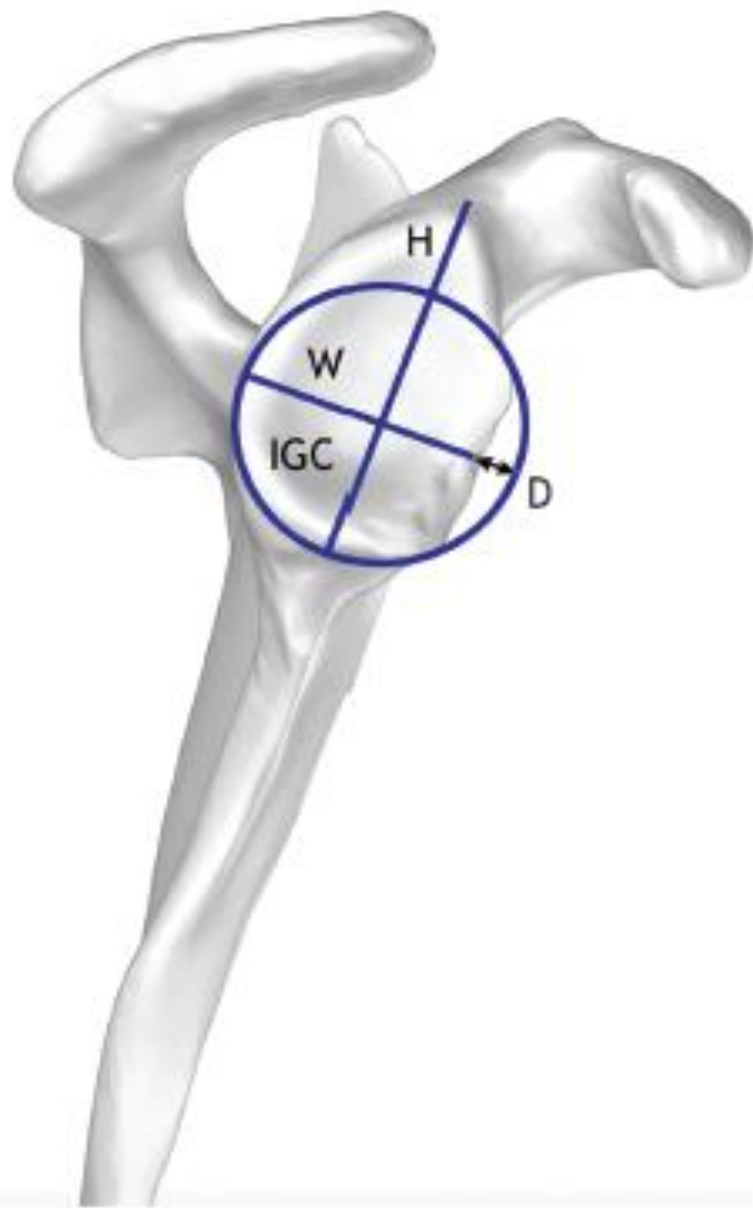
- **Bony Lesions**
  - Bankart Fracture (bony Bankart) – up to 49% of recurrent dislocations
  - Hill-Sachs Lesion – up to 80%
- **Soft Tissue Lesions**
  - Bankart Lesion – up to 90%
  - HAGL , ALPSA, etc.
  - Rotator Cuff Tears – about 30% in younger patients, 80% if over 60;
- **Axillary Nerve Injury** – about 5%;



A



B



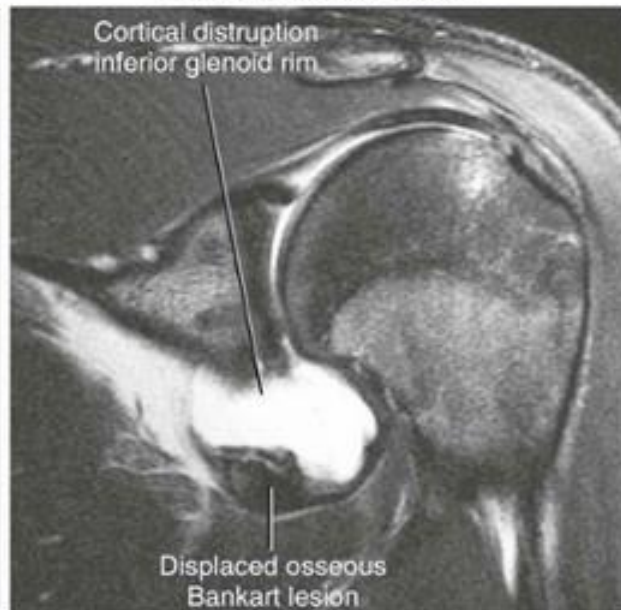
C



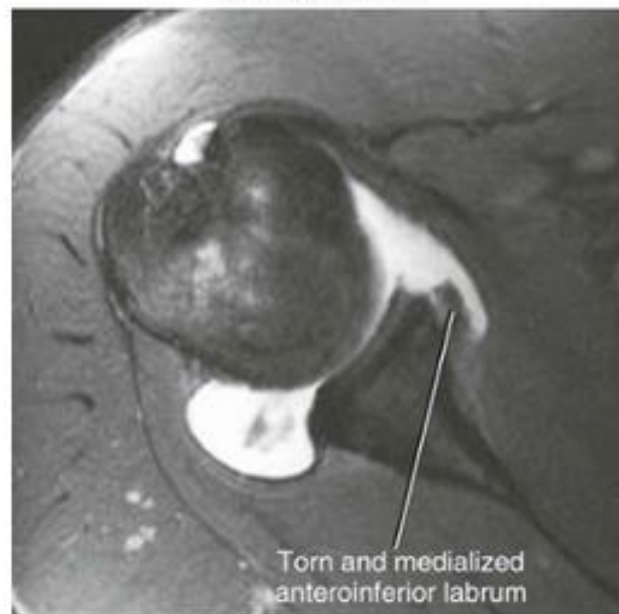
**Bankart Lesion**



**Osseous Bankart Lesion**



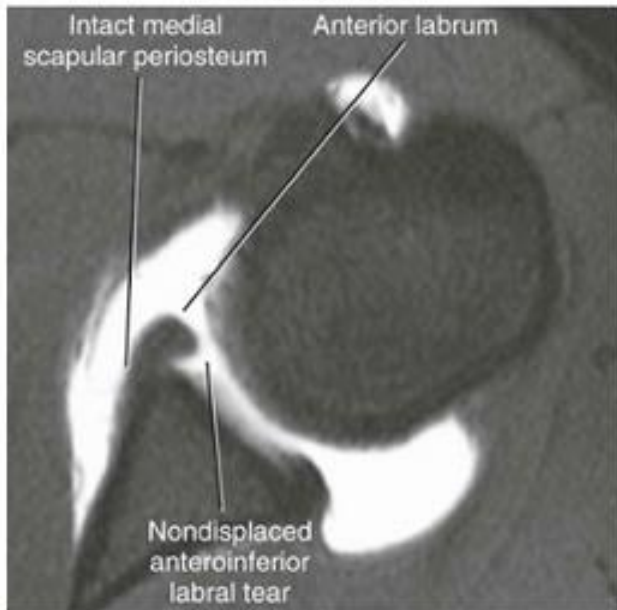
**ALPSA Lesion**



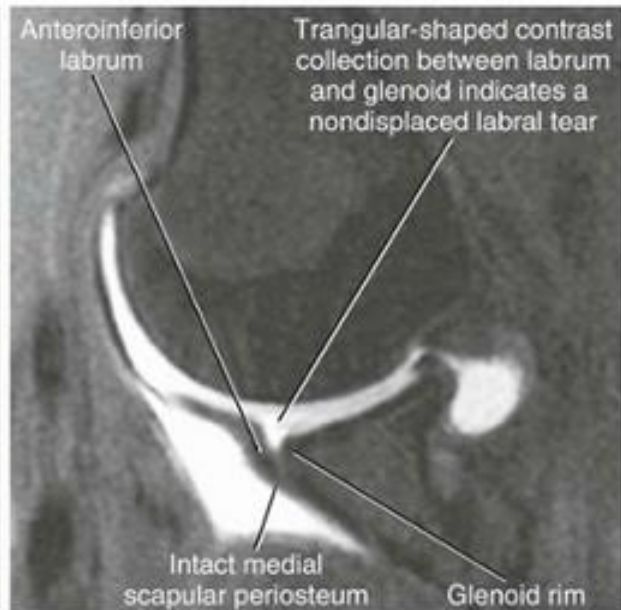
**Reverse Bankart Lesion**



**Perthes Lesion**



**Perthes Lesion in ABER View**



**HAGL Lesion**



**HAGL Lesion**





# PHYSICAL EXAM

- Skin
- Glenohumeral crepitus and TTP;
- ROM often decreased due to pain
- Rotator cuff strength testing
- Neer, Hawkin's
- Apprehension, Crank, and Relocation tests
- NVI distally

# INSTABILITY TESTING

Test	Position	Movement	Result	Source
Neer's	Scapular Plane	Forced Elevation	Pain at 70-110°	GT impinges on acromion
Hawkin's	90° Flexion/90° Elbow Flexion	Forced IR	Pain	GT impinges under CA Lig
Apprehension	90° Abd/90° ER	To 90/90	Apprehension of Anterior Dislocation	Instability
Relocation	90° Abd/90° ER	Force Posterior at Shoulder	Apprehension Relieved	Instability
Crank	90 Abd/Axial Load	Force IR	Pain/Instability/Clunk	Instability

# TREATMENT

- Non-Operative?
  - Sling?
  - PT?
  - Brace?
  - Return to sports?
- Surgery?
  - When?
  - What?
  - What else do you want to know?

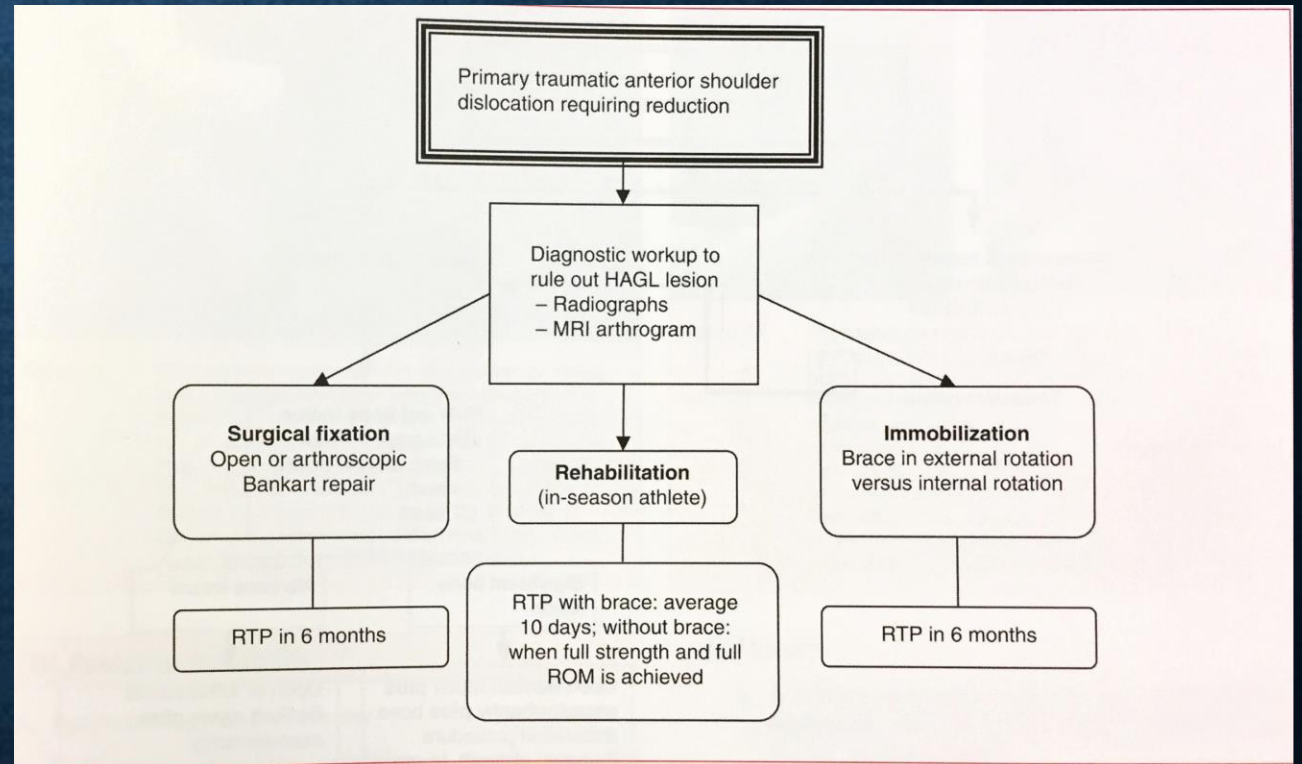


Figure 8

Algorithm demonstrates the management of anterior shoulder instability secondary to primary traumatic anterior shoulder dislocation. HAGL = humeral avulsion of the glenohumeral ligaments, ROM = range of motion, RTP = return to play. (Adapted with permission from Bicos J, Mazzocca AD, Arciero RA: Anterior instability of the shoulder, in Schepsis AA, Busconi BD, eds: *Sports Medicine: Orthopaedic Surgery Essentials*. Philadelphia, PA, Lippincott Williams & Wilkins, 2006, p 221.)

# SURGICAL INDICATIONS FOLLOWING INITIAL DISLOCATION

- Nonsurgical treatment
  - For uncomplicated anterior shoulder dislocation.
  - Brief period of immobilization followed by ROM exercises and rotator cuff and periscapular strengthening.
  - A brace or harness to limit external rotation may help in-season athletes return to activity.
  - Return to sport when strength and ROM are full.
- Surgical indications
  - Failure of nonsurgical management with recurrent episodes of anterior shoulder instability
  - Young athletes with Bankart Lesion
  - Notable bony injury or rotator cuff tears

# WILL IT HAPPEN AGAIN?

- Instability Severity Index Score:
  - Preoperative questionnaire
  - Clinical examination
  - Radiographs.
- A score >6 indicates high risk for recurrent instability with arthroscopic Bankart repair

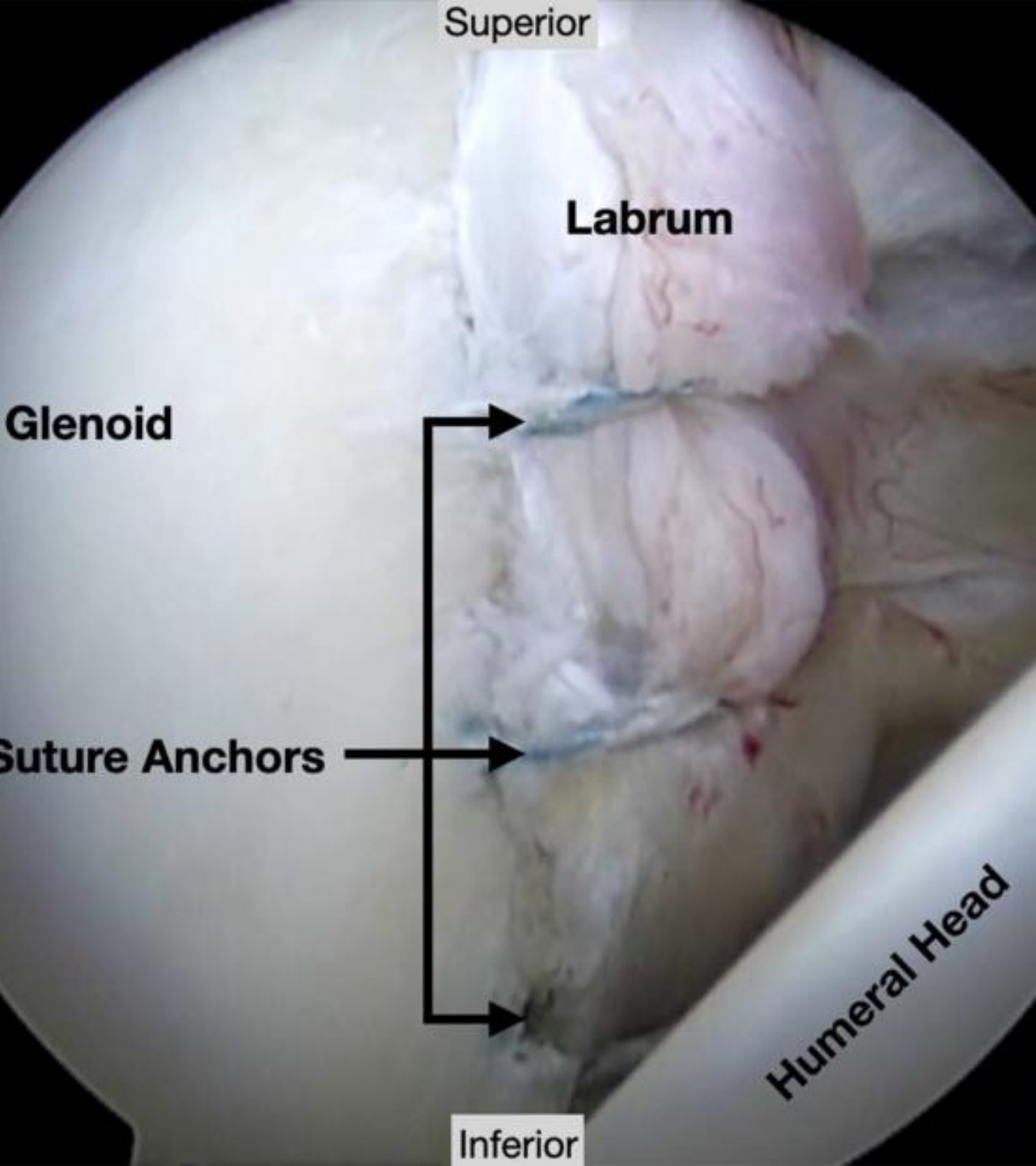
Prognostic factors	Points
Age at surgery (yrs)	
≤ 20	2
> 20	0
Degree of sport participation (pre-operative)	
Competitive	2
Recreational or none	0
Type of sport (pre-operative)	
Contact or forced overhead	1
Other	0
Shoulder hyperlaxity	
Shoulder hyperlaxity (anterior or inferior)	1
Normal laxity	0
Hill-Sachs on AP* radiograph	
Visible in external rotation	2
Not visible in external rotation	0
Glenoid loss of contour on AP radiograph	
Loss of contour	2
No lesion	0
Total (points)	10

\* AP, anteroposterior



## **SURGERY**

- Arthroscopic Bankart Repair
- Open Bankart with capsulorrhaphy
- Coracoid Process Transfer (Laterjet)
- Distal Tibial Allograft



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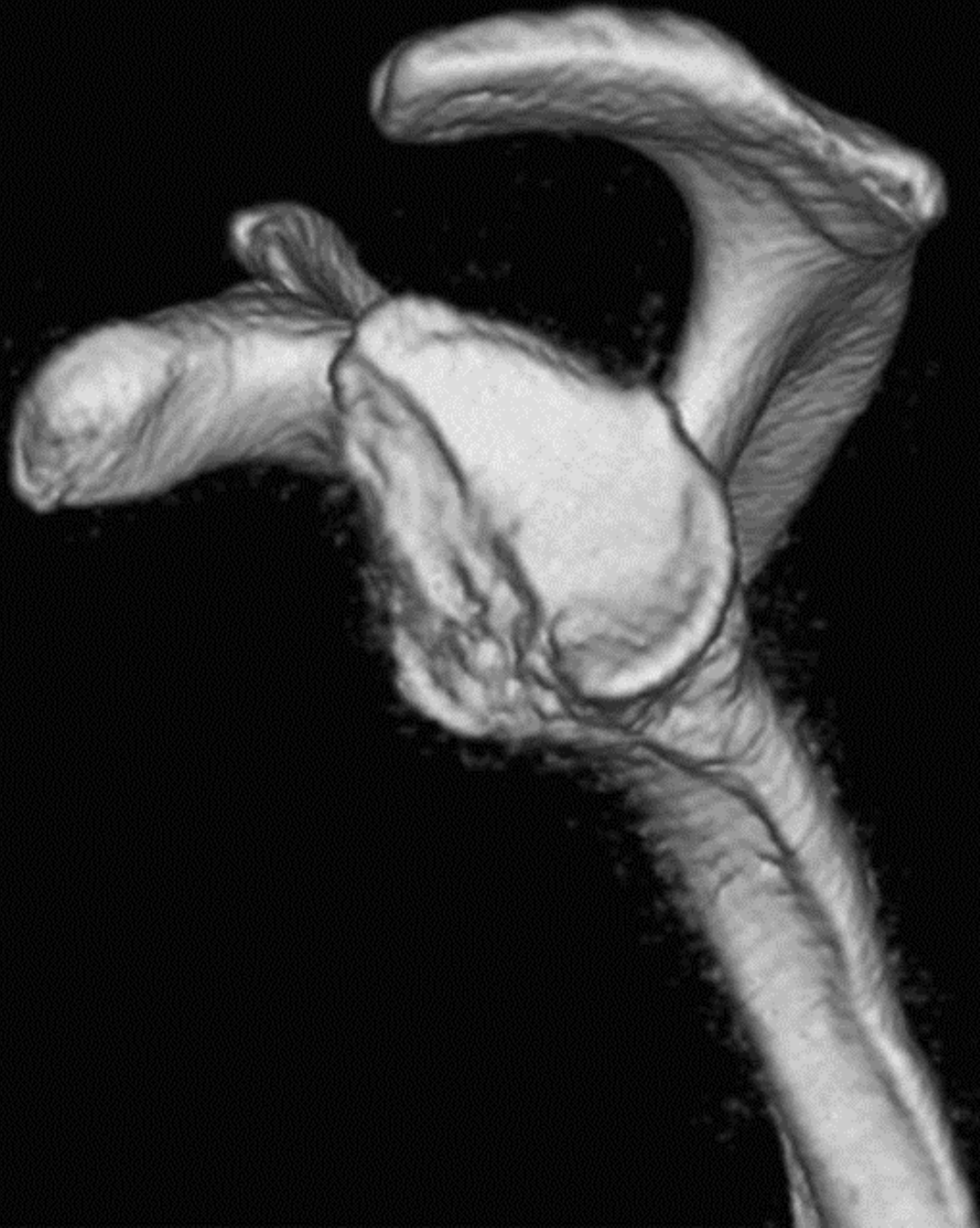
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- **Distal Tibial Allograft**

# QUESTIONS

- Thanks for you attention!

# POST-OP PLANNING

- Sling x 6 weeks
- Early ROM
- Return to sport testing beginning at 4.5 months
- Typical return to full sport activity by about 6 months