

Shoulder Dyslexia: The Alphabet Soup

Alison Nguyen
4/13/06

Mystery Cases

The background is a solid blue color. On the right side, there is a large, dark blue, curved shape that resembles a stylized letter 'C' or a partial circle, extending from the top right towards the bottom right.

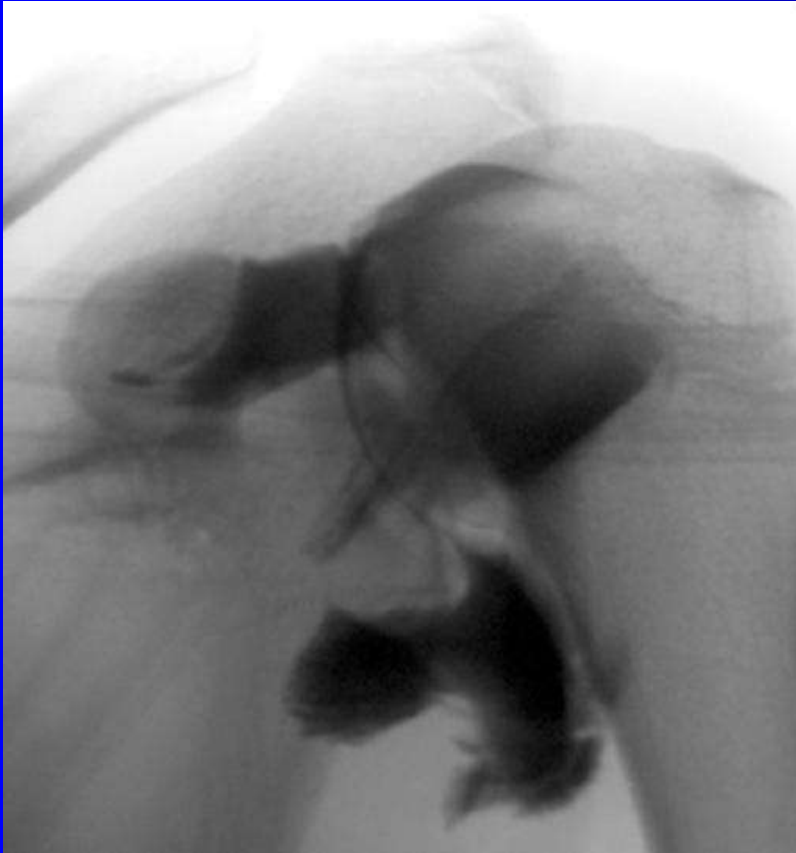
Case 1



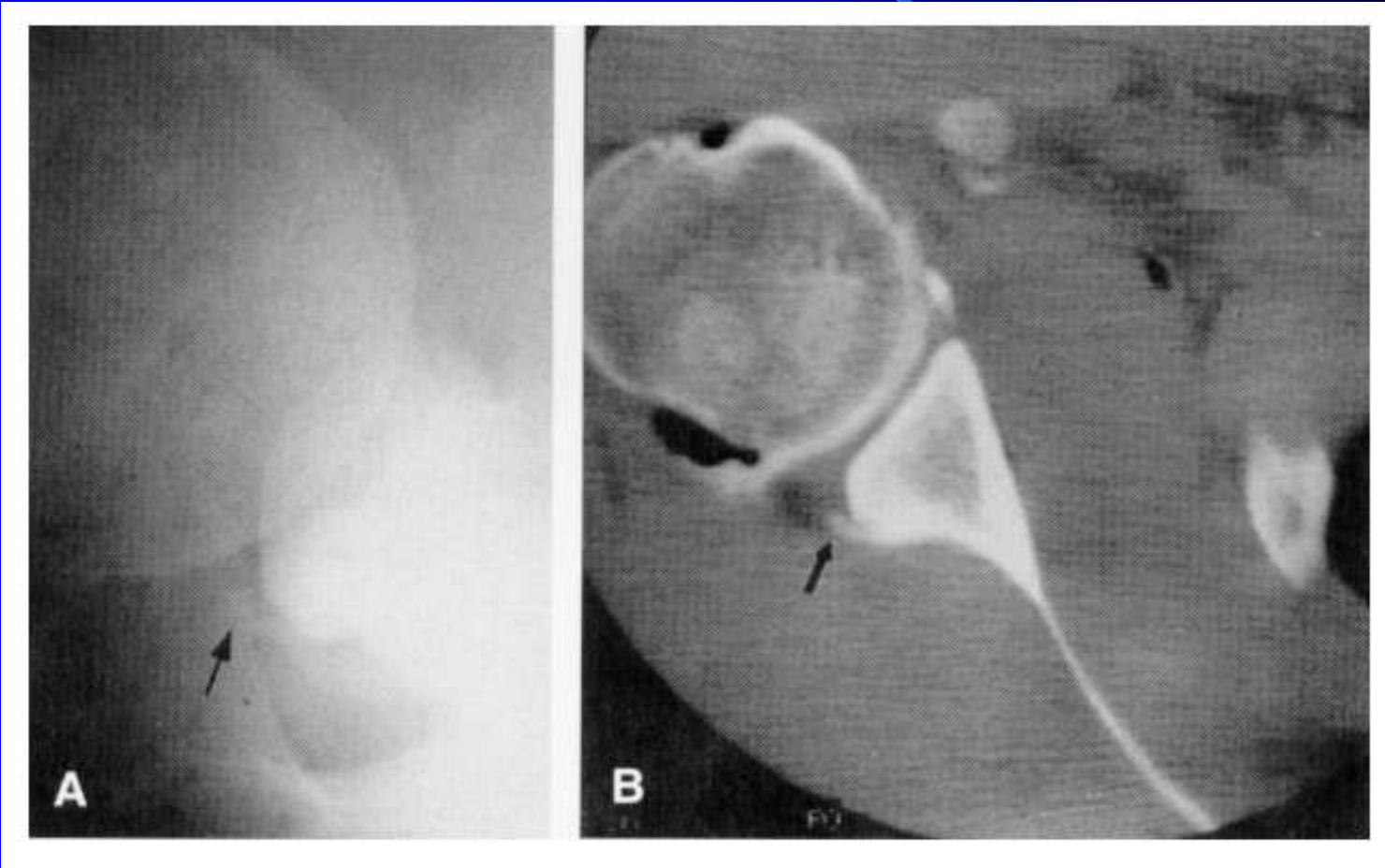
Case 2



Case 3



Case 4



Shoulder Dyslexia: The Alphabet Soup



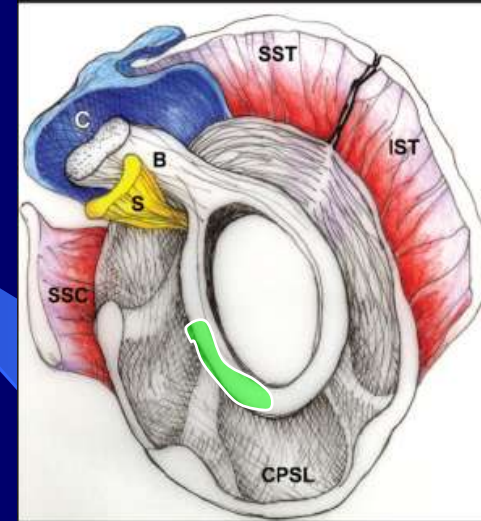
Shoulder dyslexia: addressing the endless alphabet soup

- **Ant-inf labrum:**
 - Bankart, Perthes, ALPSA, GLAD
- **Inferior capsule:**
 - HAGL, PHAGL, Axillary pouch injuries
- **Posterior labrum:**
 - GARD, GIRD, Kim's lesion, Bennett lesion

Shoulder dyslexia: Part 1

Ant-Inf Labrum

Anterior inferior labral pathology:
Consider in anterior shoulder dislocations



GLAD

Glenoid labral articular
disruption

Torn labrum, torn periosteum

Bankart

Torn labrum, stripped but intact periosteum

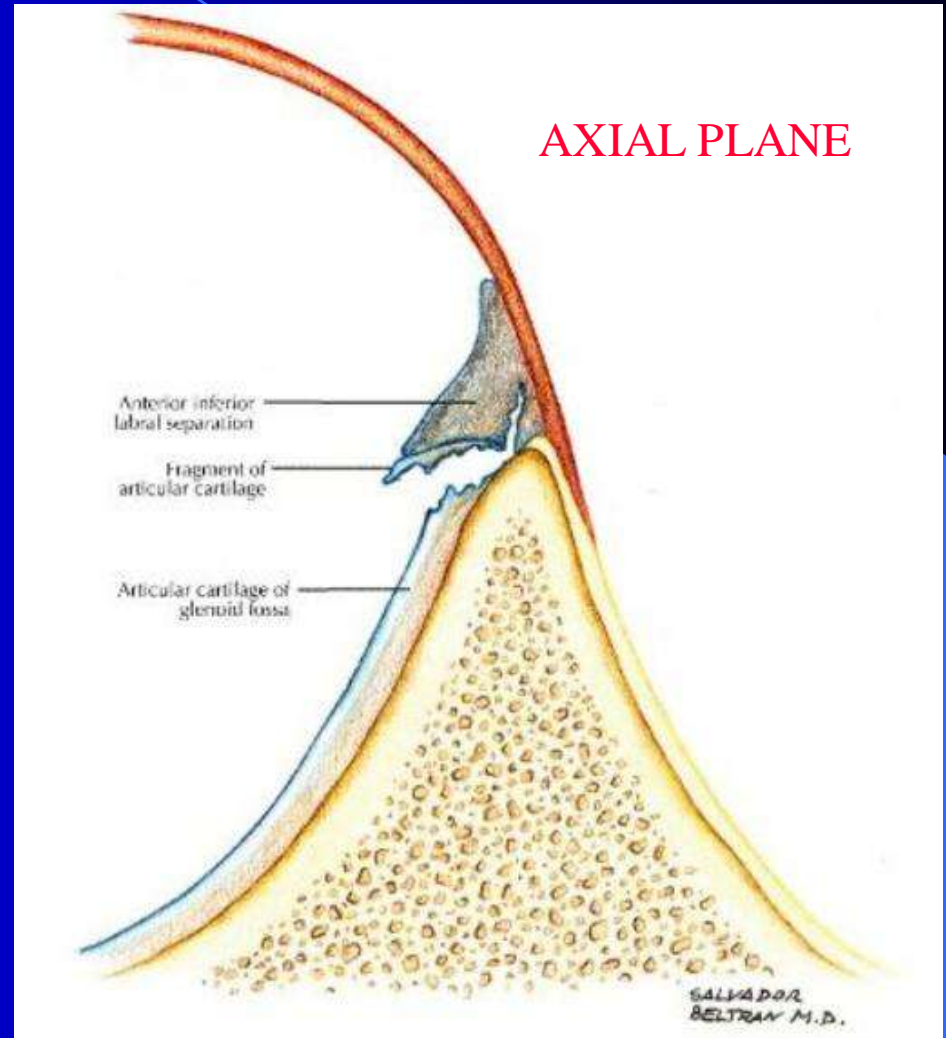
Perthes

“Medialized” labrum, intact periosteum

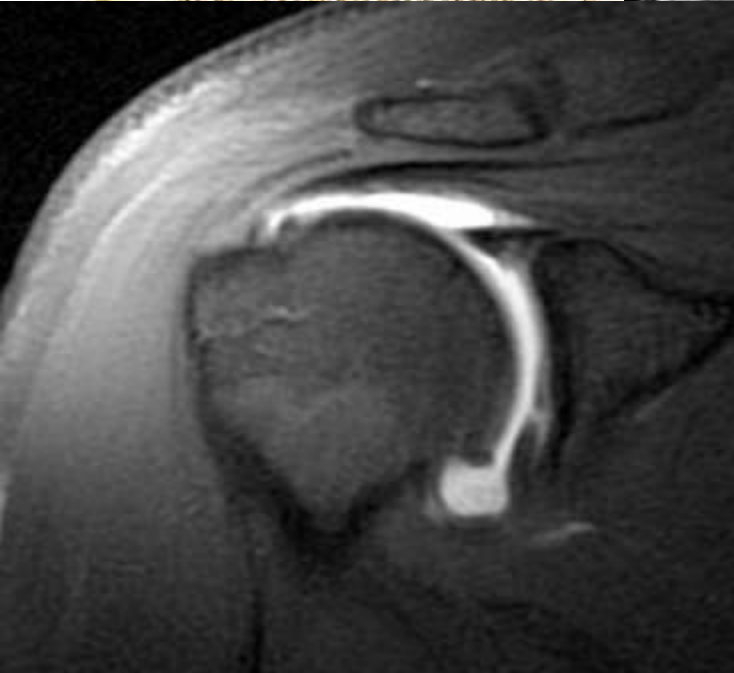
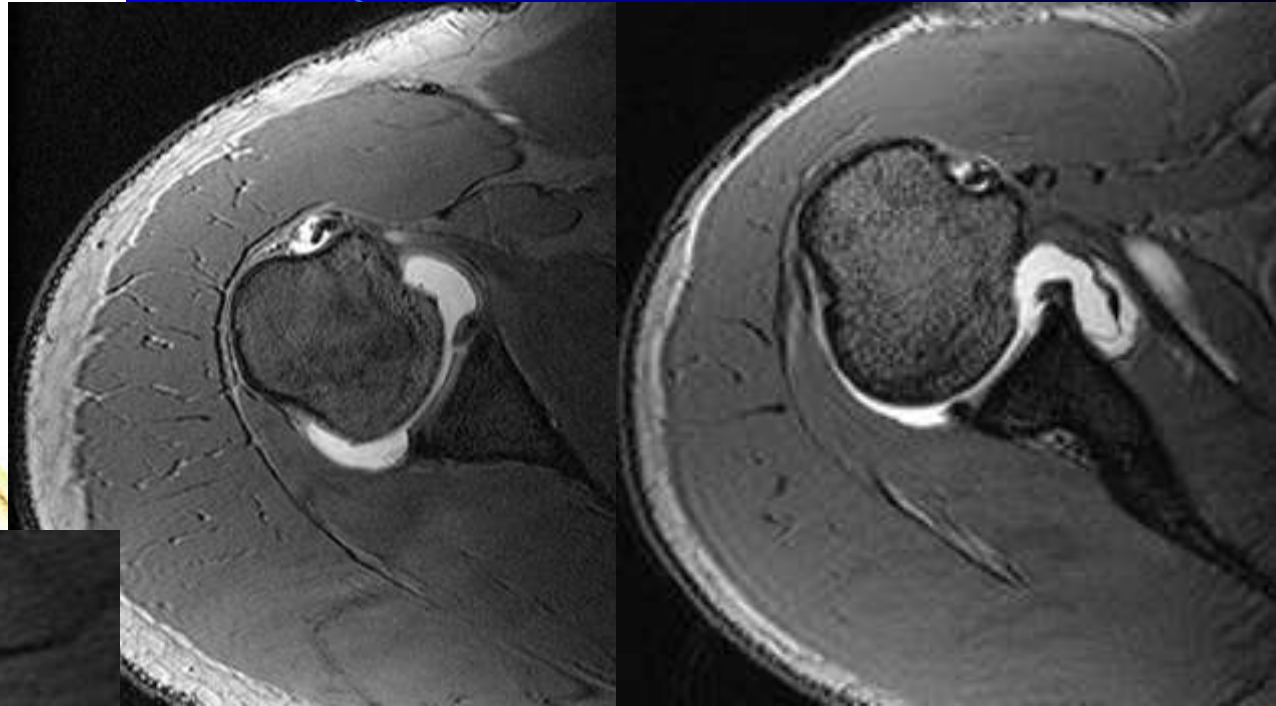
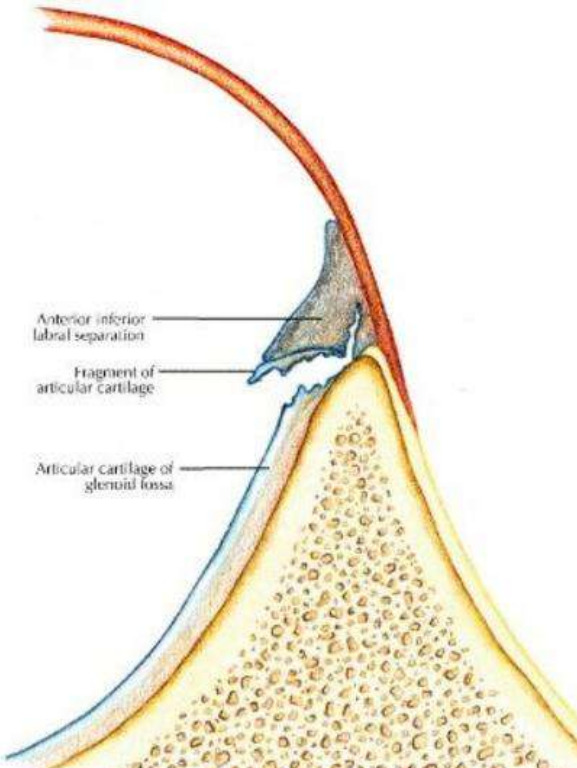
ALPSA

GLAD lesion

- Glenoid Labral Articular Disruption
- Anterior-inferior labral tear involving the adjacent articular cartilage



GLAD



Clue: look for disrupted articular cartilage

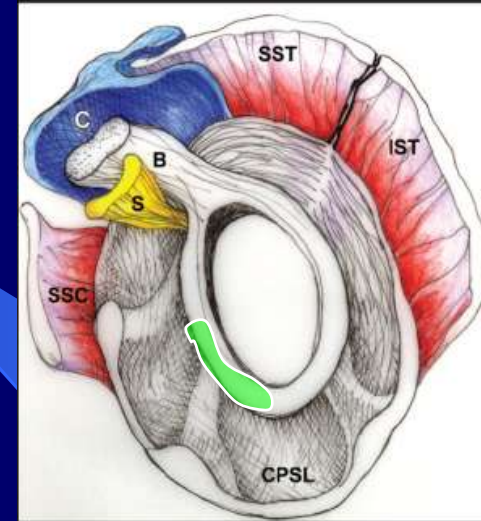
Not associated w/ ant shoulder disloc/subluxation

Mechanism: Forced adduction of shoulder in ABER position with impaction of HH against glenoid fossa

Shoulder dyslexia: Part 1

Ant-Inf Labrum

Anterior inferior labral pathology:
Consider in anterior shoulder dislocations



GLAD

Glenoid labral articular
disruption

Torn labrum, torn periosteum

Bankart

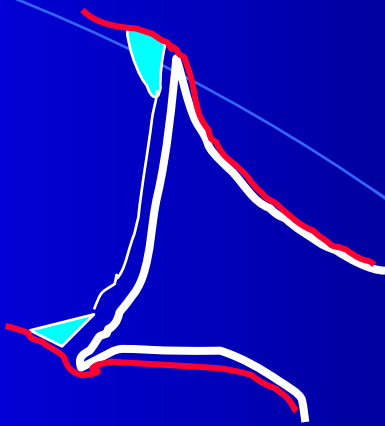
Torn labrum, stripped but intact periosteum

Perthes

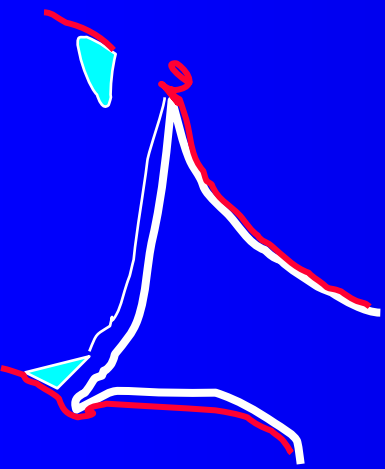
“Medialized” labrum, intact periosteum

ALPSA

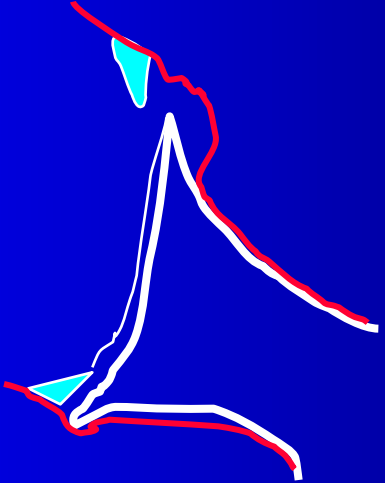
Normal Axial Plane



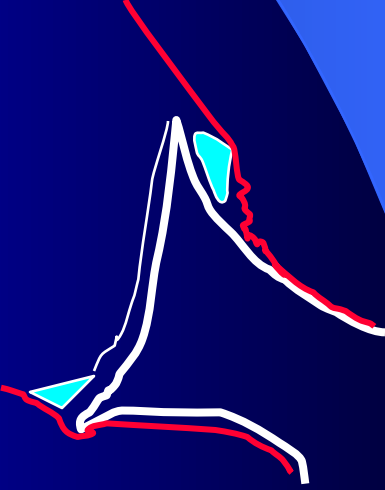
Bankart Lesion



Perthes Lesion



ALPSA Lesion



Hill-Sachs and Bankart Lesions



18 yo w/ acute shoulder dislocation

Classic Bankart lesion (case 2)



- Detached ant-inf labrum
- Detached periosteum

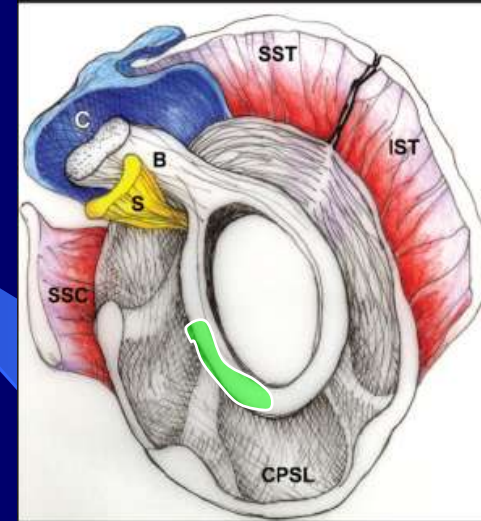
GLOM (glenoid labral ovoid mass) in setting of Bankart lesion



Shoulder dyslexia: Part 1

Ant-Inf Labrum

Anterior inferior labral pathology:
Consider in anterior shoulder dislocations



GLAD

Glenoid labral articular
disruption

Torn labrum, torn periosteum

Bankart

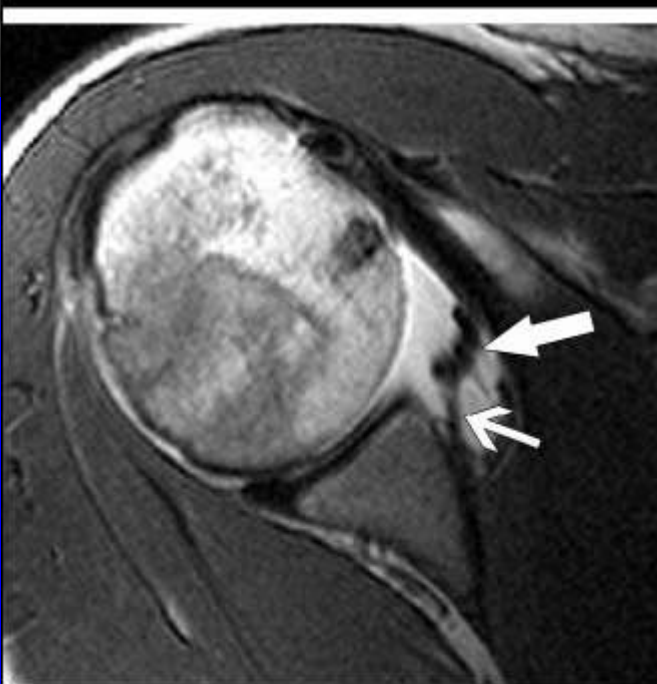
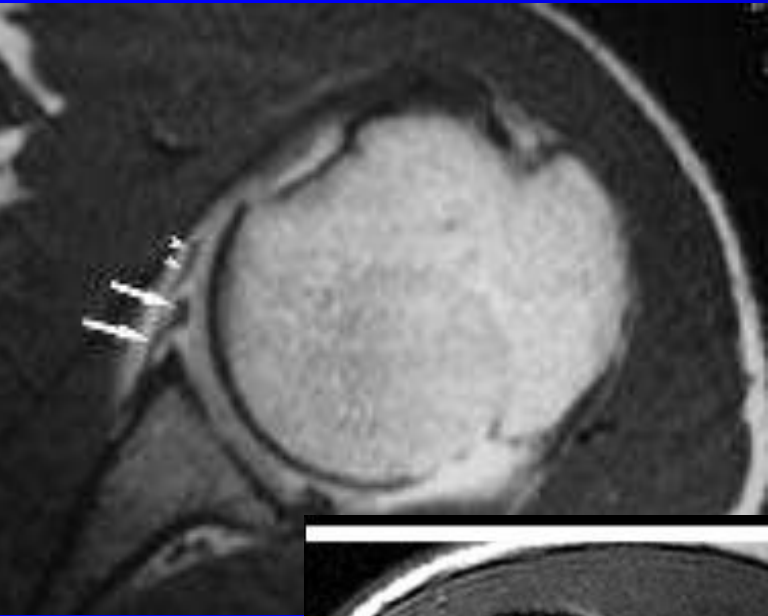
Torn labrum, stripped but intact periosteum

Perthes

“Medialized” labrum, intact periosteum

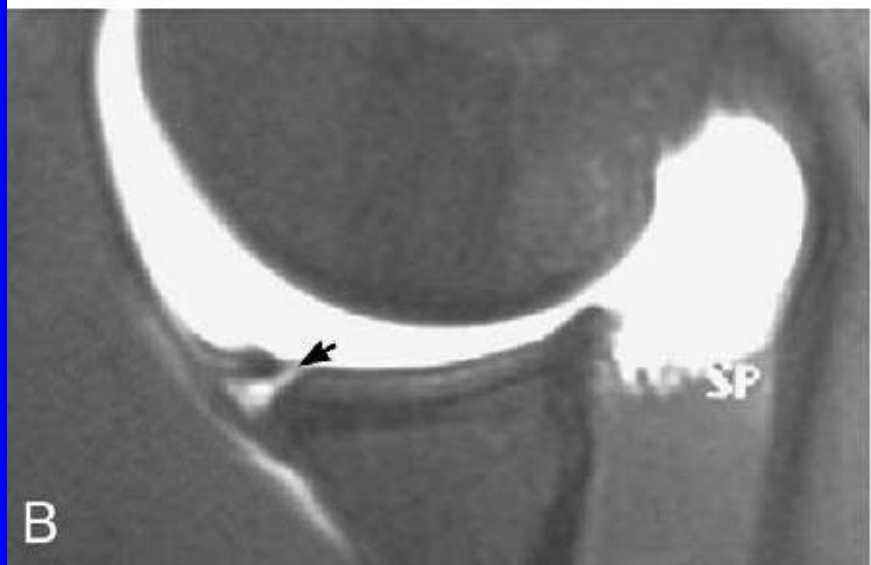
ALPSA

Perthes Lesion



- Detached, labro-ligamentous complex
- Medial stripping of anterior scapular periosteum

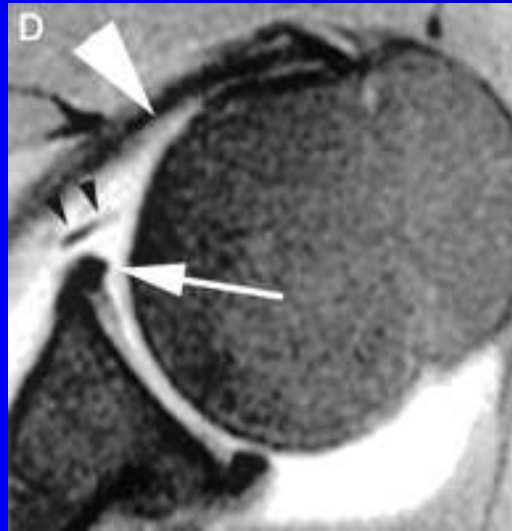
Perthes Lesion



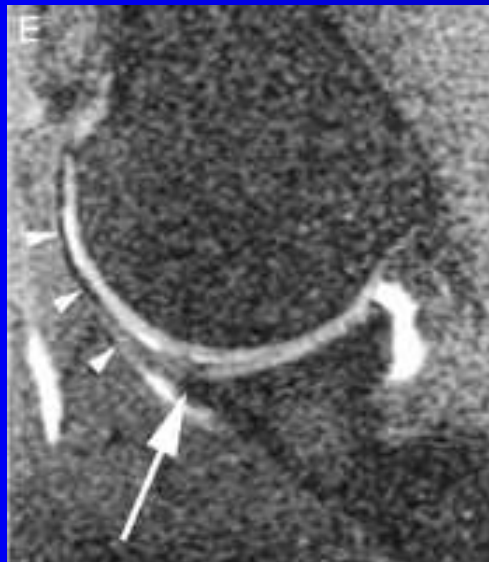
- Sometimes only seen on ABER position
- May look normal on arthroscopy

Normal vs. Perthes lesion

Axillary



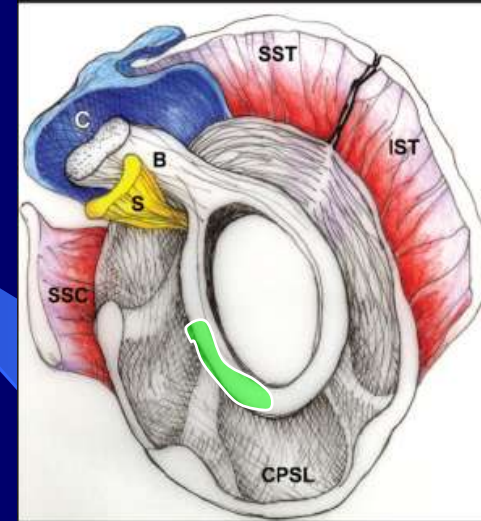
ABER



Shoulder dyslexia: Part 1

Ant-Inf Labrum

Anterior inferior labral pathology:
Consider in anterior shoulder dislocations



GLAD

Glenoid labral articular
disruption

Torn labrum, torn periosteum

Bankart

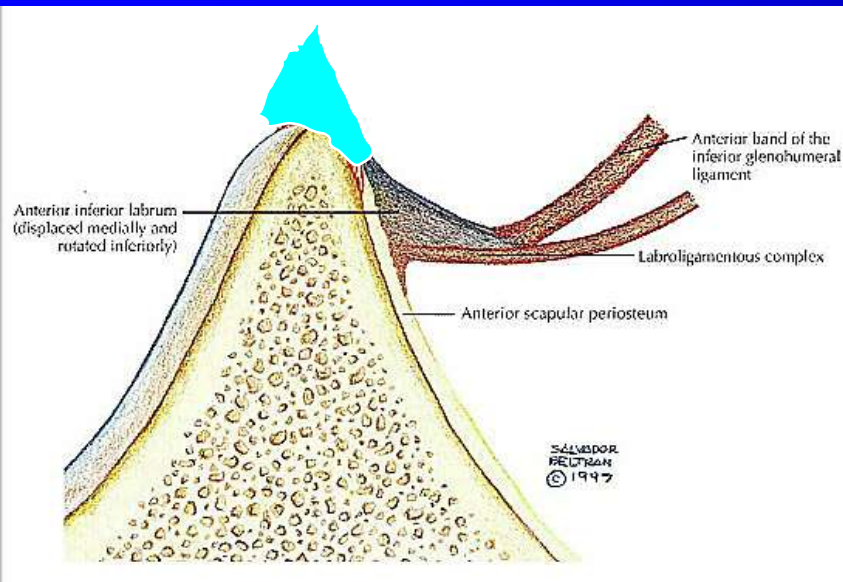
Torn labrum, stripped but intact periosteum

Perthes

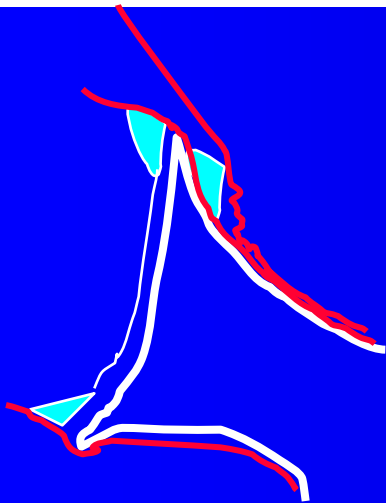
“Medialized” labrum, intact periosteum

ALPSA

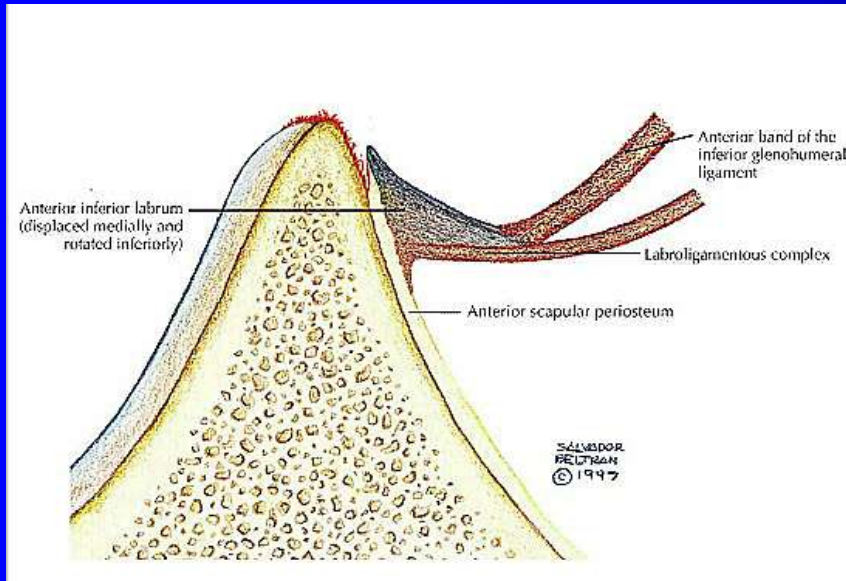
ALPSA: “medialized Bankart”



- “Differs from the classic Bankart lesion because the avulsed anterior labroligamentous structure is pulled medially by an intact anterior scapular periosteum and eventually heals in this abnormal position, leading to an incompetent anteroinferior glenohumeral ligament. This lesion has been referred to as the medialized Bankart lesion. The significance of the ALPSA lesion to the arthroscopist is that the labrum and attached ligaments, rather than floating free, heal in an abnormal position and eventually resynovialize, and may be difficult to identify as abnormal at the time of arthroscopy”

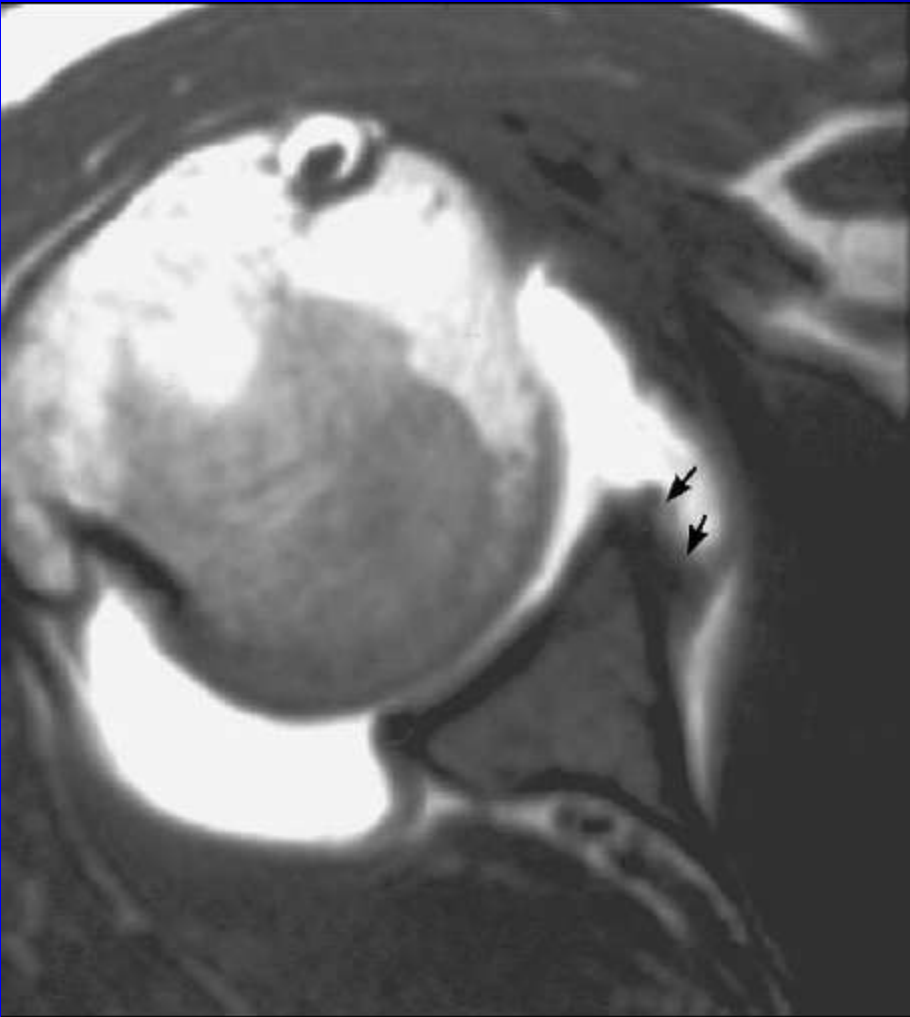


Acute ALPSA lesion



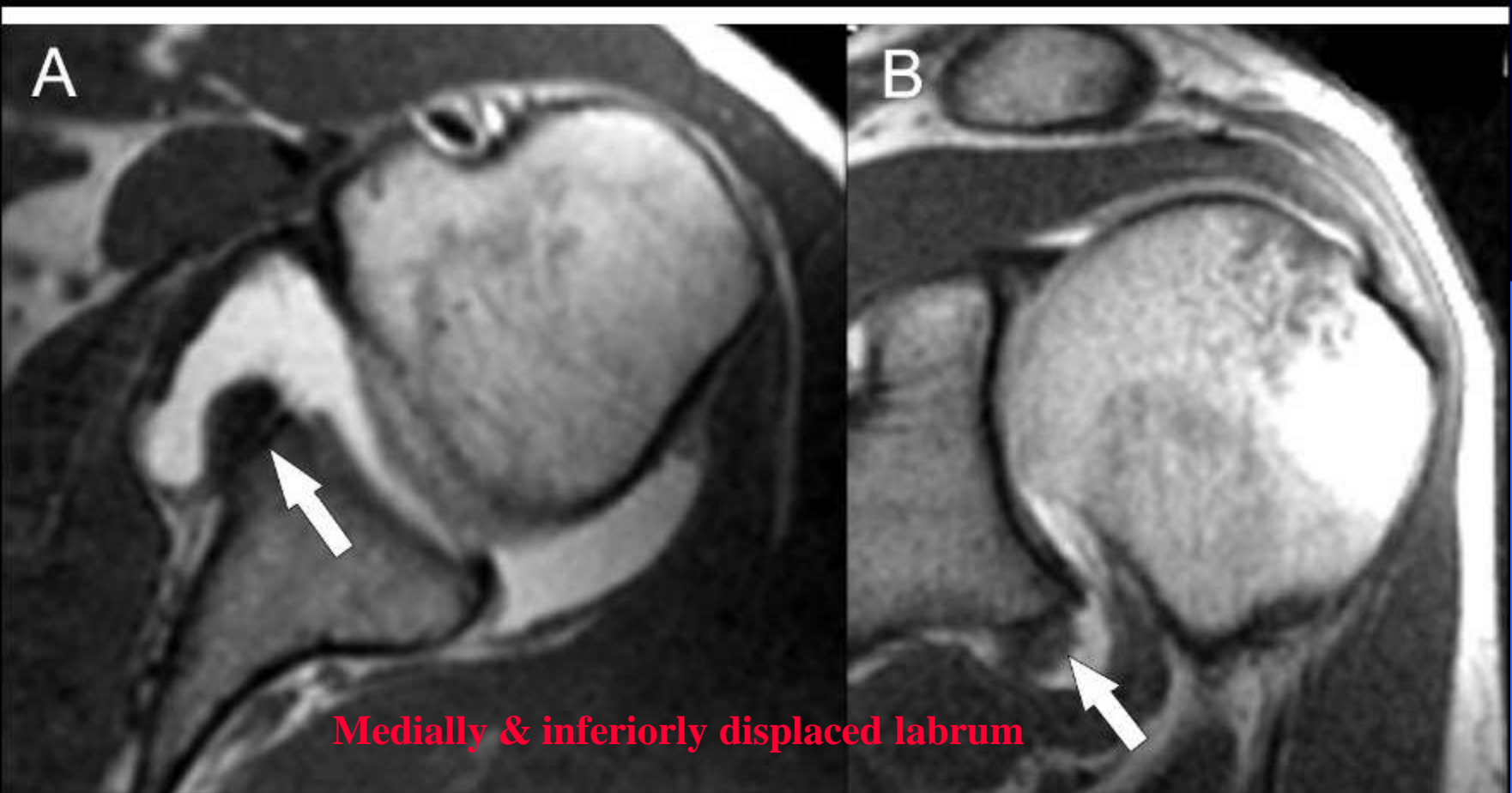
- Medially/inferiorly displaced, detached anterior labrum
- Intact ant scapular periosteum

Chronic ALPSA lesion

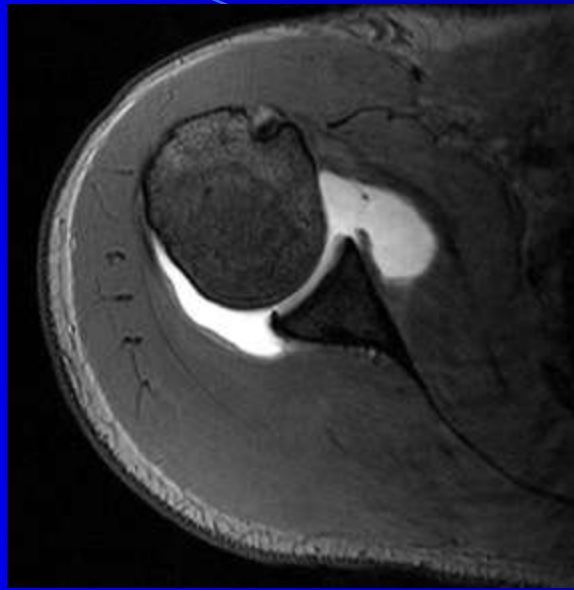


- Thickening, irregularity of anterior medial aspect of capsule-periosteal junction → synovialized ALPSA lesion

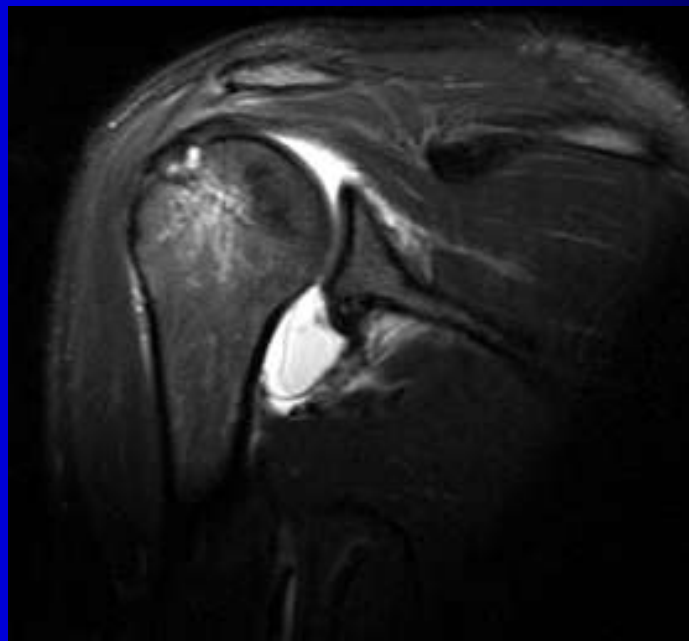
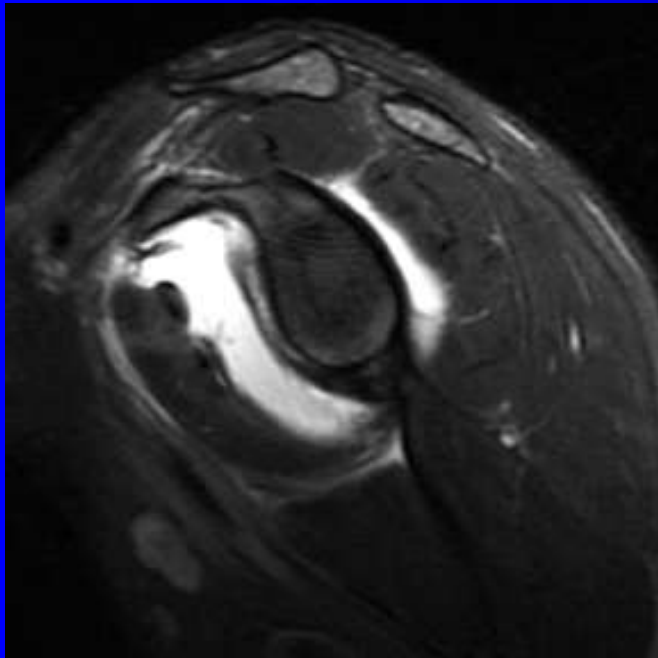
ALPSA



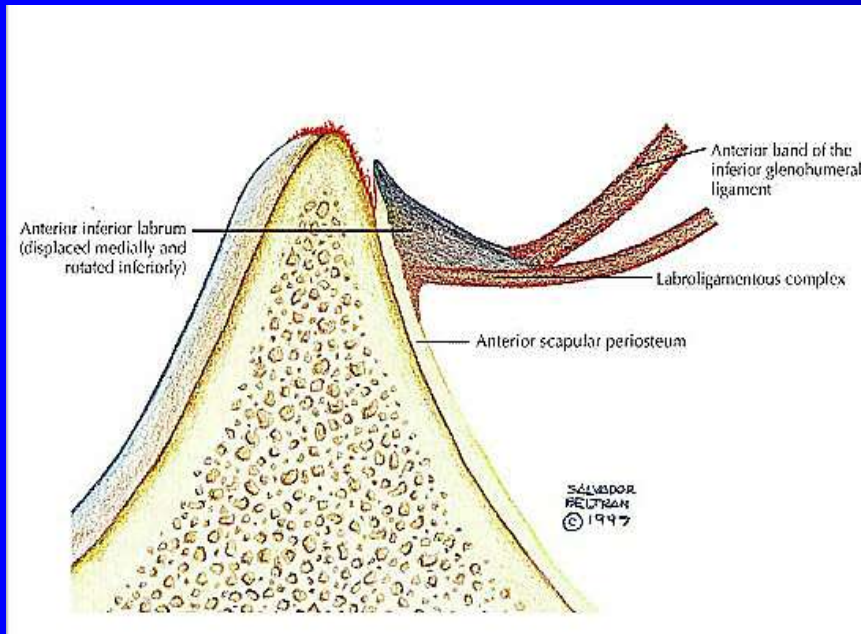
ALPSA



Clue: look for “labral mass” medial and inferior to glenoid.
“MEDIALIZED BANKART LESION”

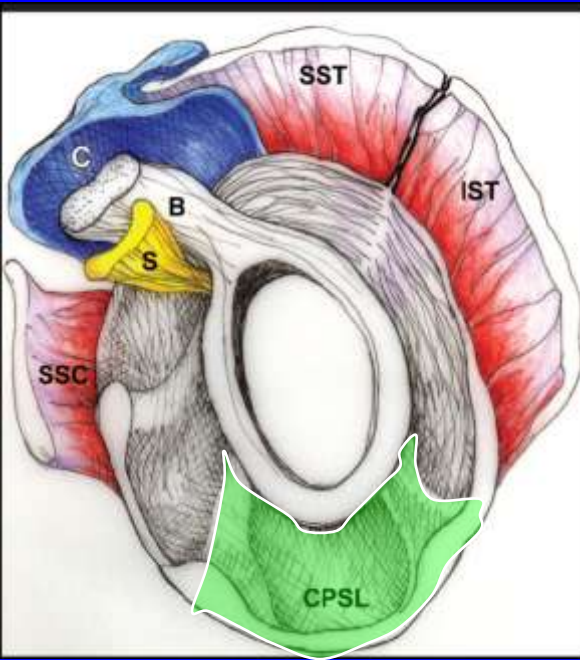


ALPSA: “Medialized” Bankart lesion (case 1)



Shoulder Dyslexia, Part II

Axillary Sling



Axillary Sling/
Inferior Capsule

CLUE: All have MR@
contrast leakage below the
inferior capsule. Look for
location to differentiate:
anterior, axillary pouch, or
posterior

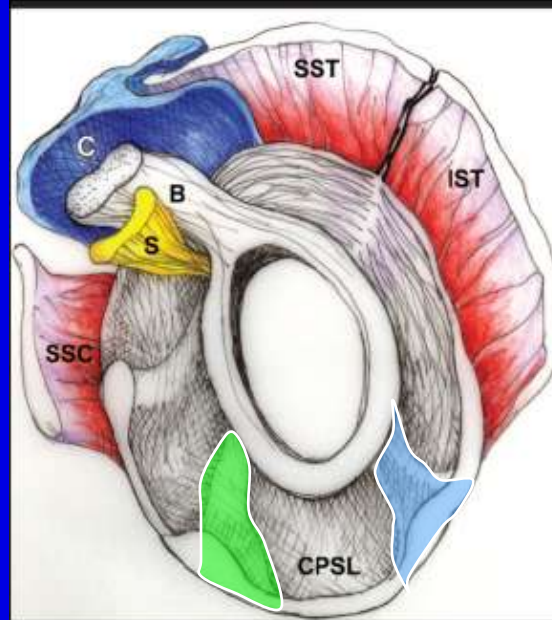
AIGHL:
-HAGL
-BHAGL

Axillary Pouch:
“hammock”

PIGHL:
-PHAGL

HAGL

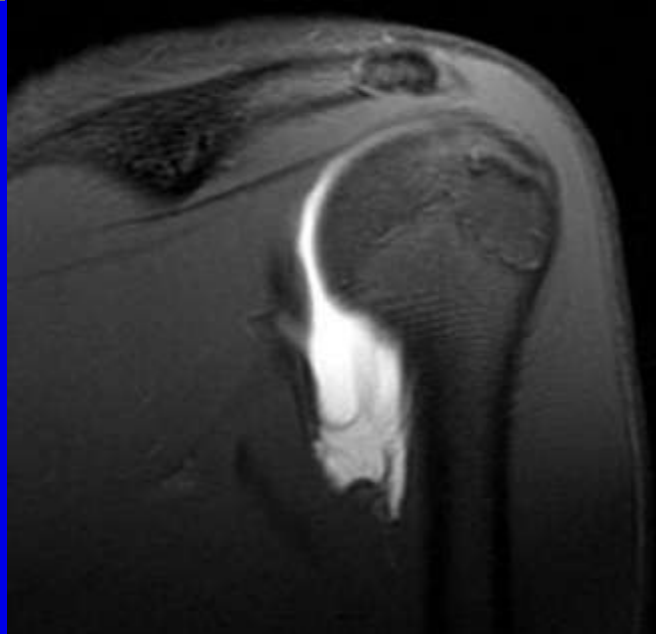
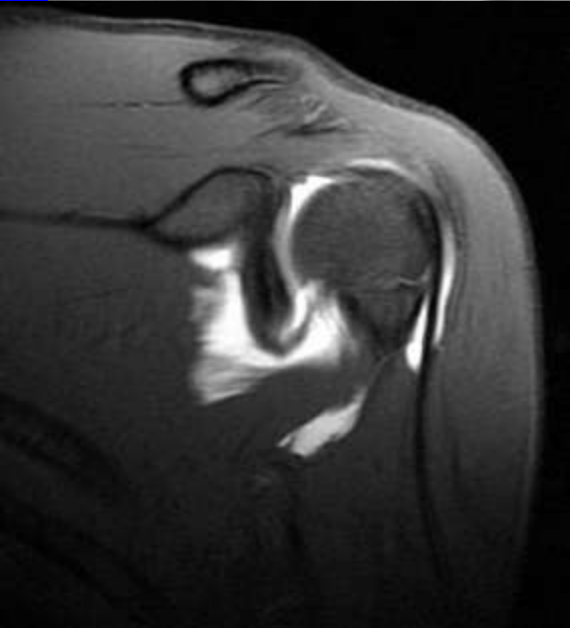
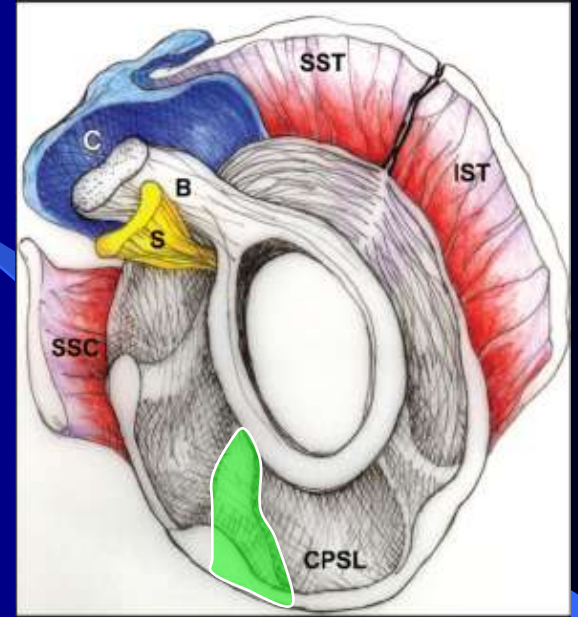
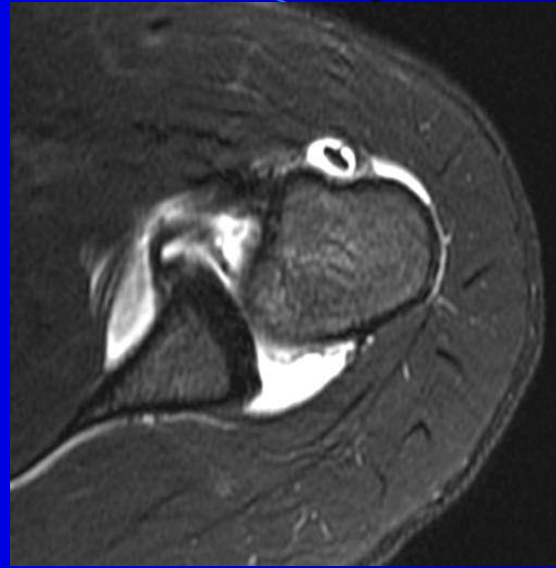
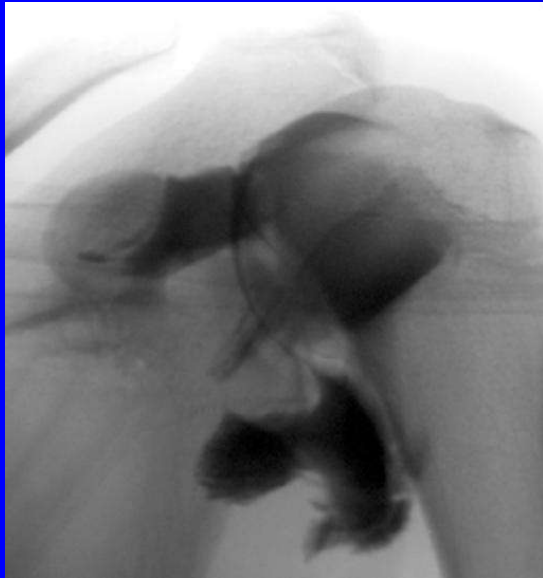
- Humeral avulsion of AIGHL
- BHAGL (bony avulsion of AIGHL)
- CLUE: arthrogram contrast extravasation at humeral neck
- Associated w/ subscapularis tendon tears



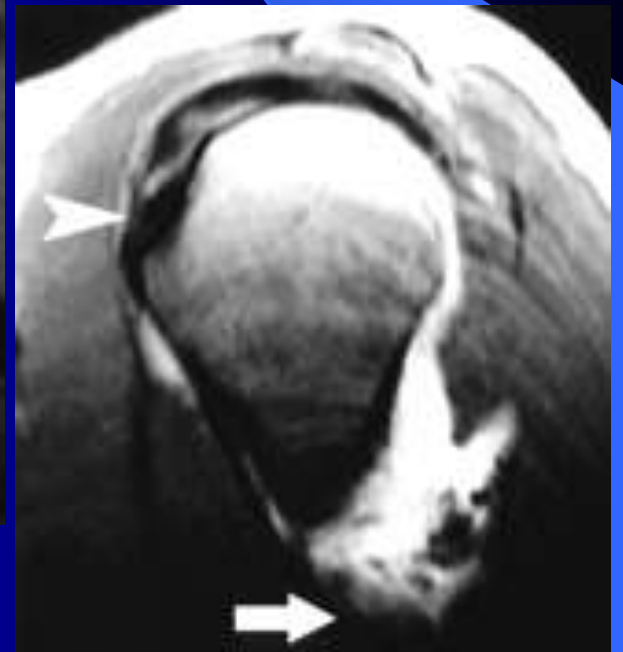
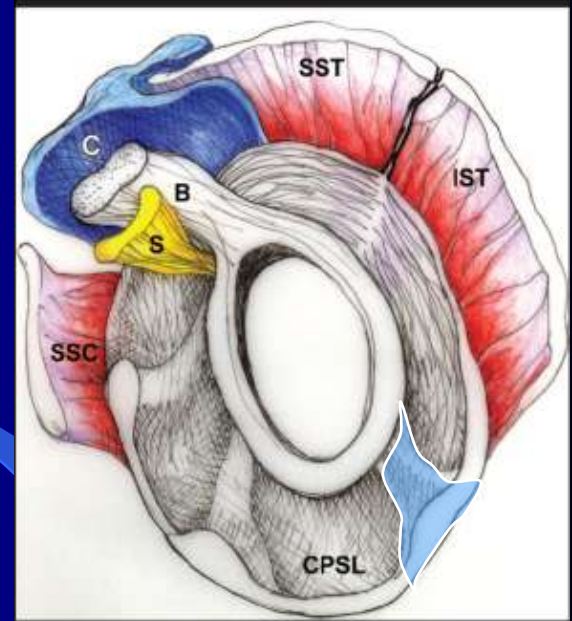
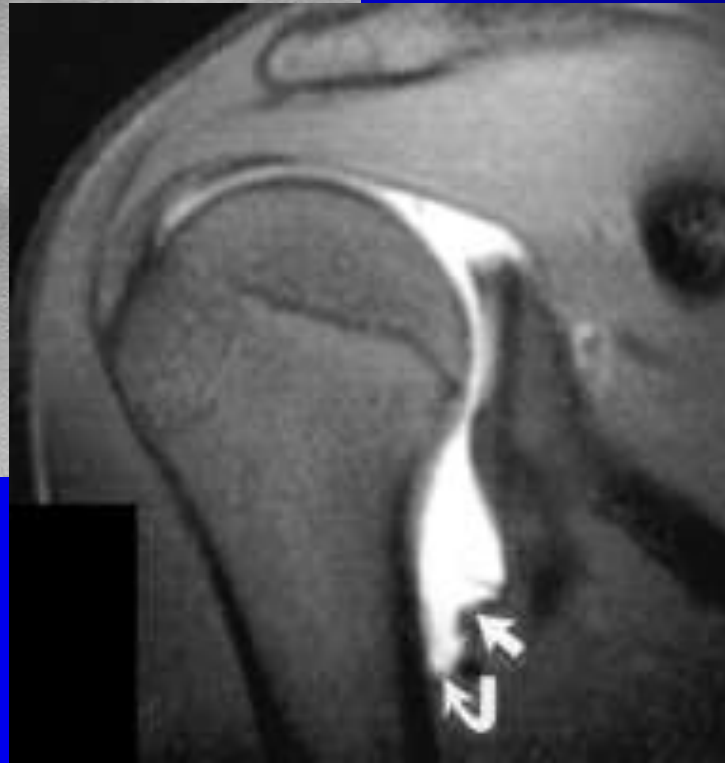
PHAGL

- Posterior humeral avulsion of PIGHL
- CLUE: arthrogram contrast extravasation at humeral neck

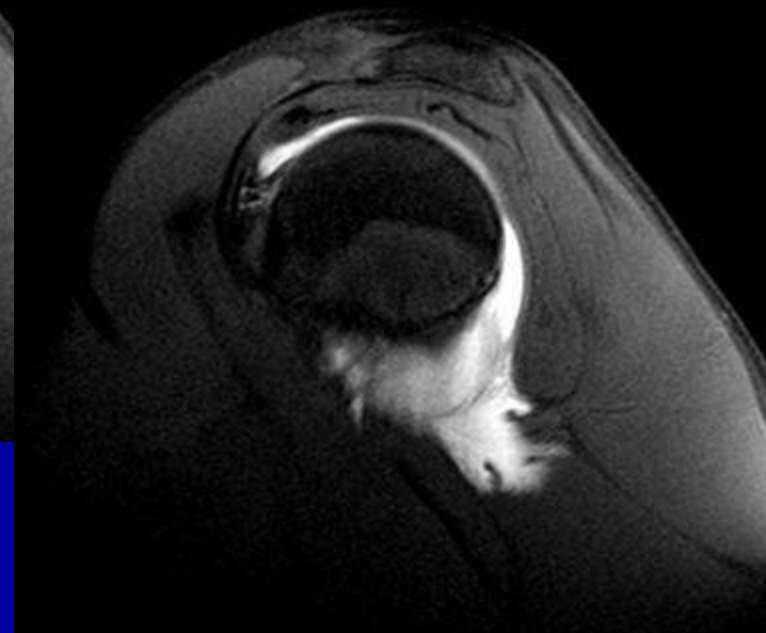
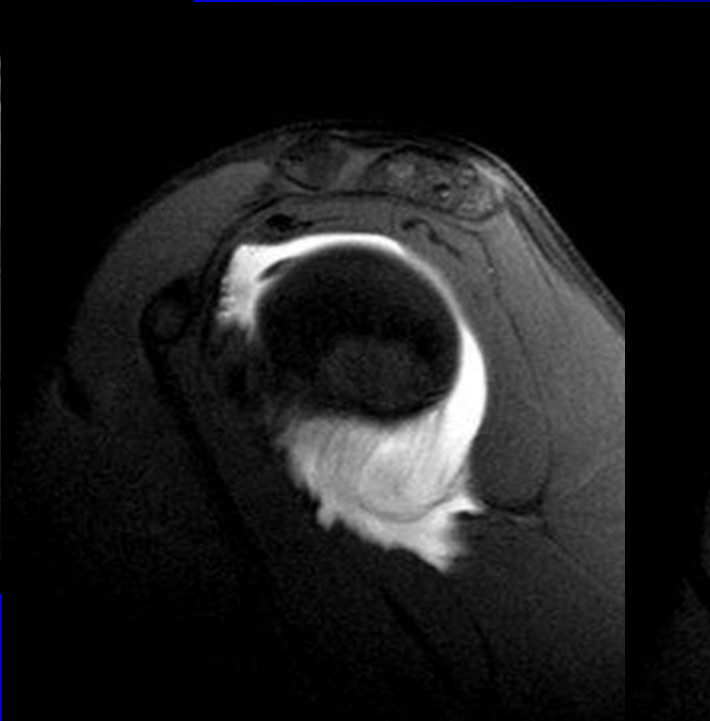
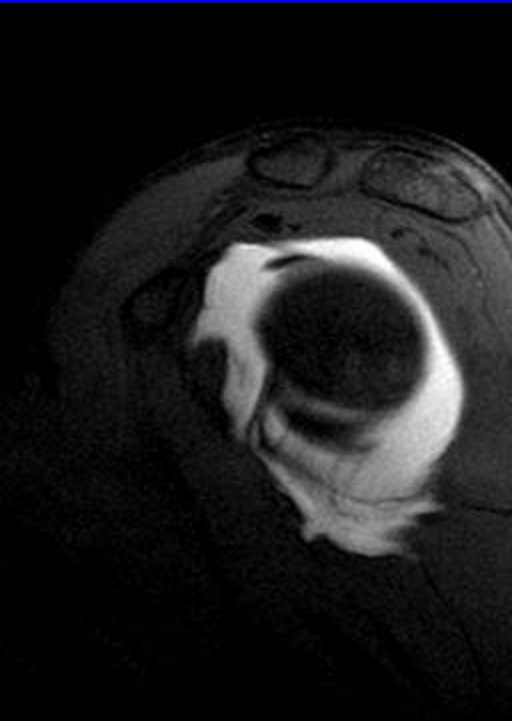
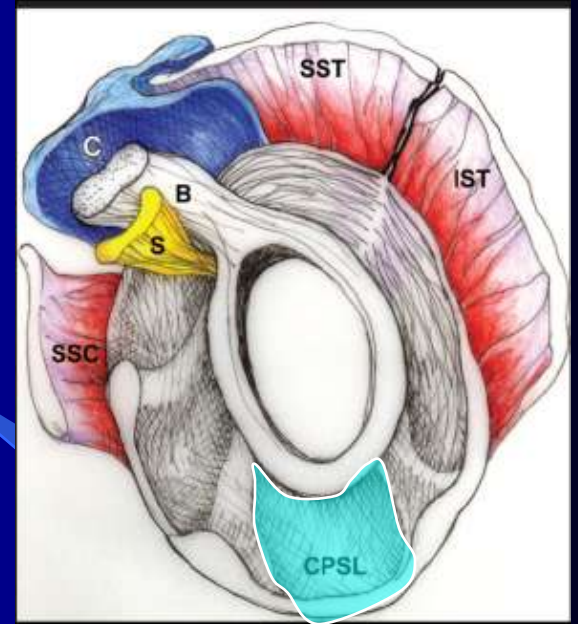
HAGL (case 3)



PHAGL

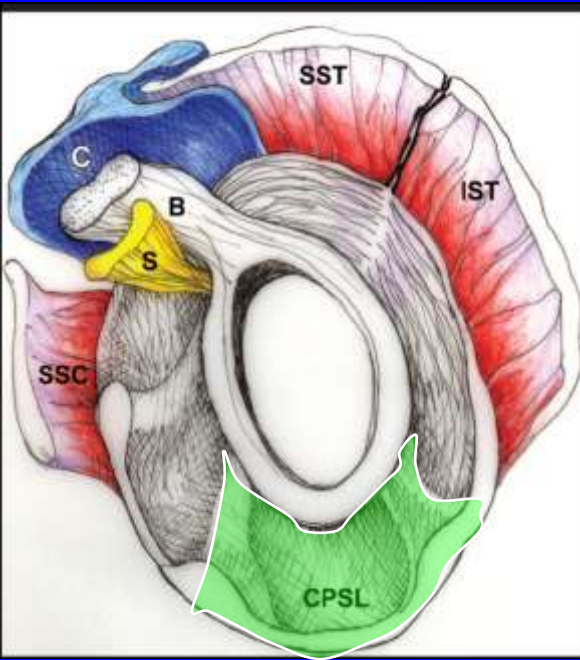


Probable Axillary Pouch Injury



Shoulder Dyslexia, Part II

Axillary Sling



Axillary Sling/
Inferior Capsule

CLUE: All have MR@
contrast leakage below the
inferior capsule. Look for
location to differentiate:
anterior, axillary pouch, or
posterior

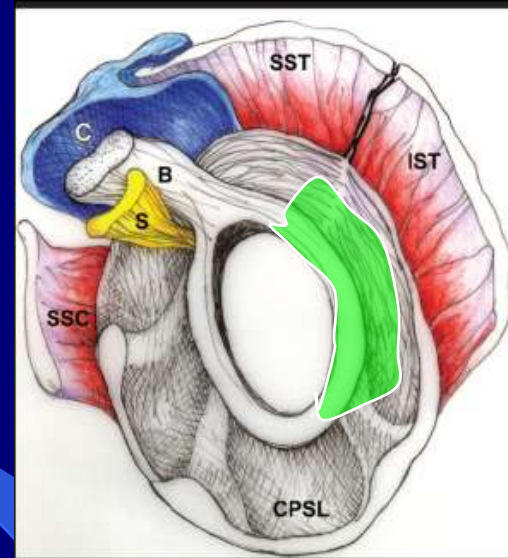
AIGHL:
-HAGL
-BHAGL

Axillary Pouch:
“hammock”

PIGHL:
-PHAGL

Shoulder Dyslexia: Part III

Posterior Capsule/Labrum



Posterior capsule/labrum

Bennett

“Cyst” at jxn of cartilage + post labrum

Kim’s lesion

Post labrum thickening in throwing shoulder

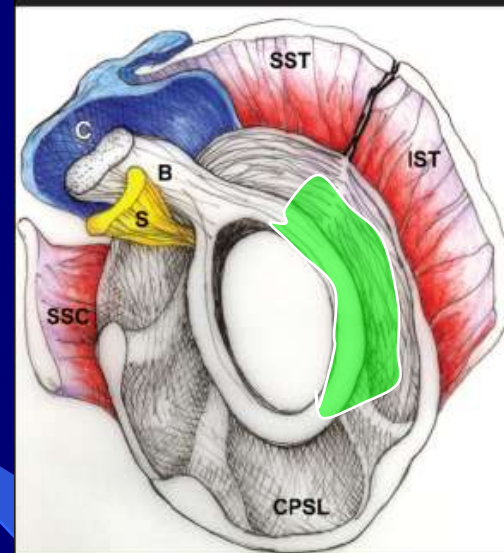
GIRD

Bone & cartilage disruption at post glenoid rim

GARD

Shoulder Dyslexia: Part III

Posterior Capsule/Labrum



Posterior capsule/labrum

Bennett Lesion

Crescentic bone at post-inf glenoid;
EXTRA-articular

“Cyst” at jxn of cartilage + post labrum

Kim's lesion

Post labrum thickening in throwing shoulder

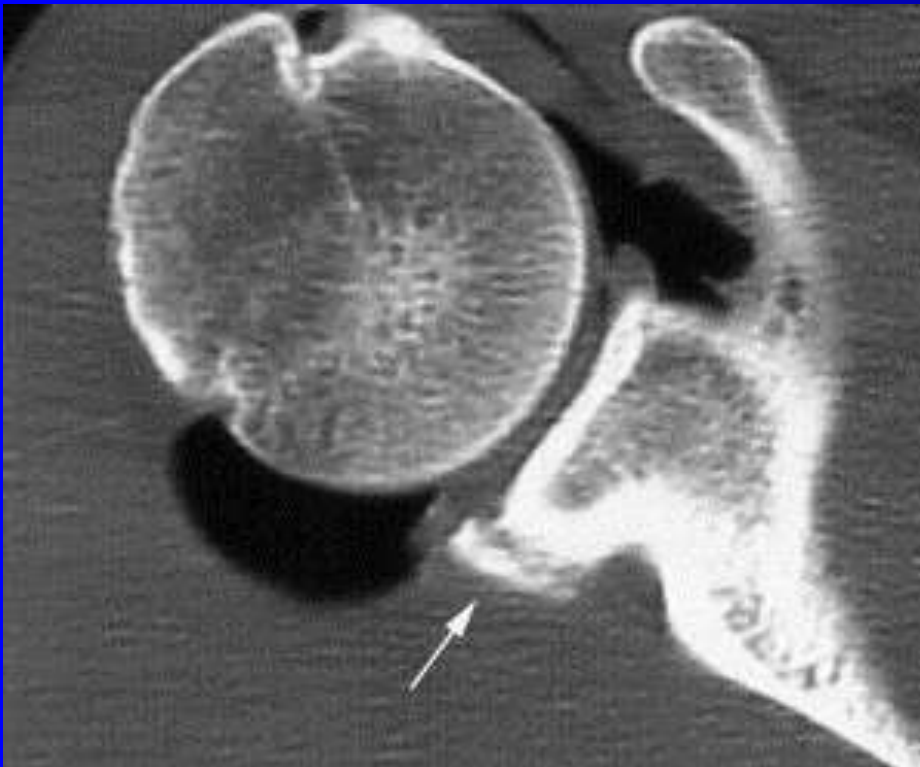
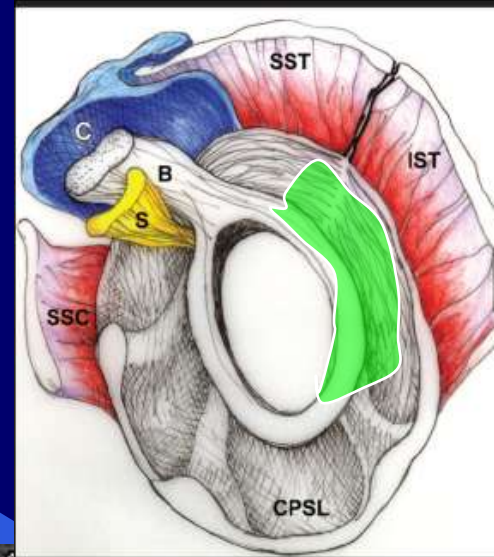
GIRD

Bone & cartilage disruption at post glenoid rim

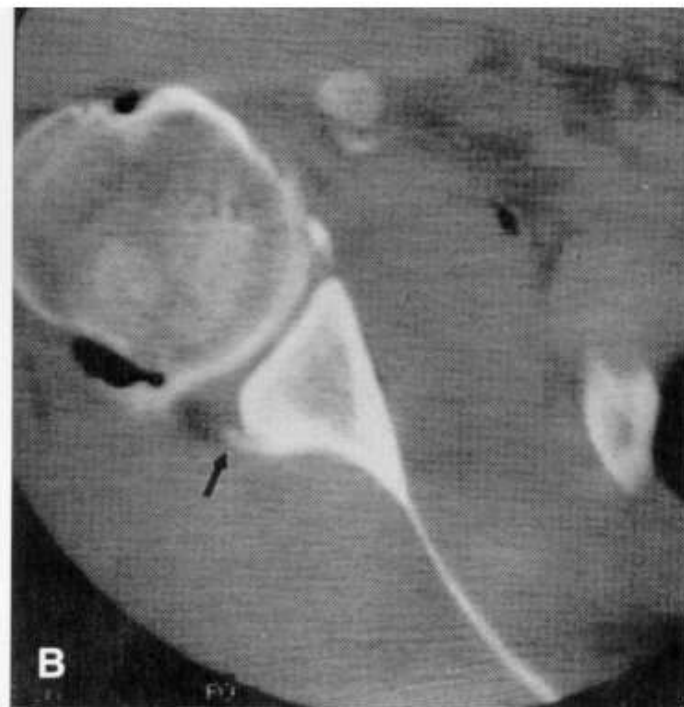
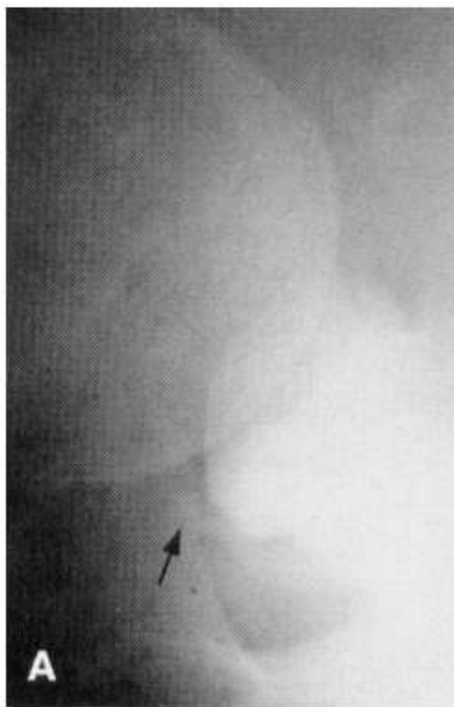
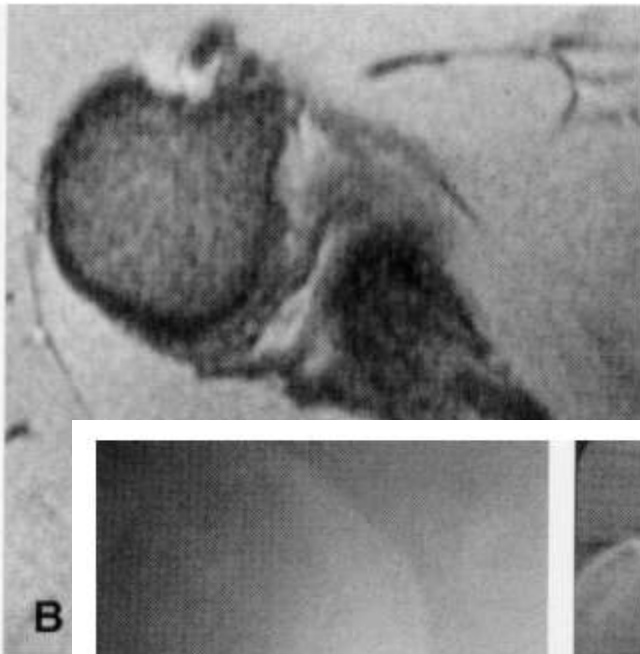
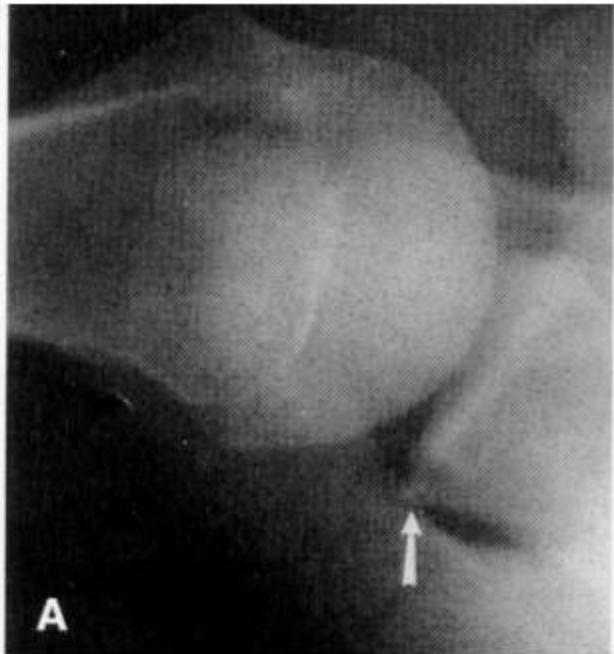
GARD

Bennett lesion

Mechanism: traction of PIGHL during deceleration phase of pitching



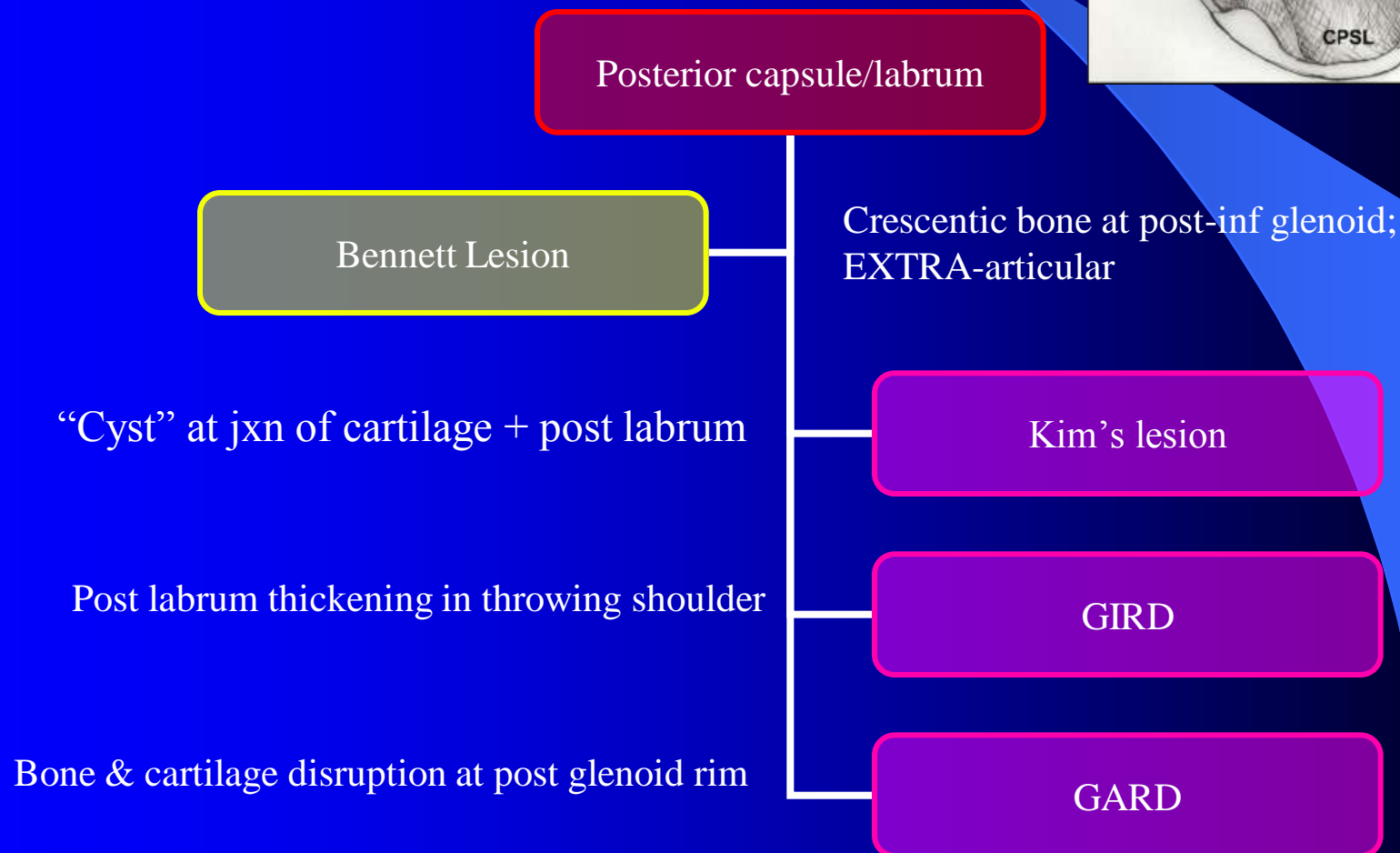
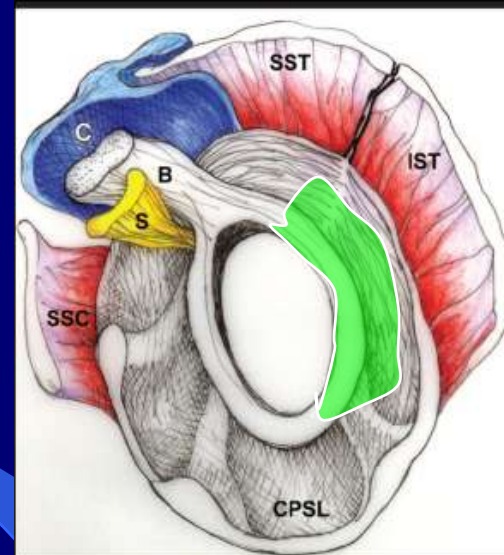
Bennett lesion: throwing athletes (case 4)



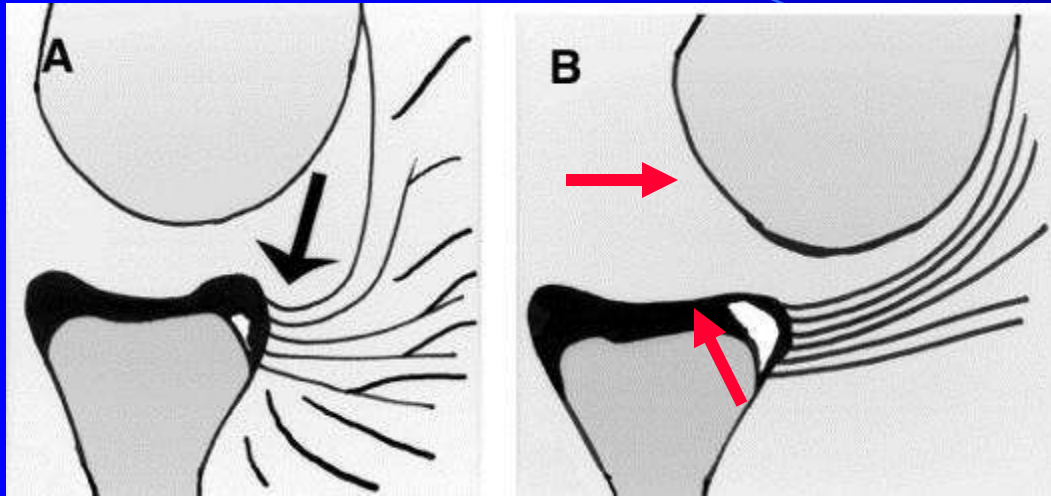
- “crescentic” bony mineralization at posterior-inferior glenoid rim
- EXTRA-articular posterior capsule avulsive injury
- Assoc w/ posterior labral tears and RCTs

Shoulder Dyslexia: Part III

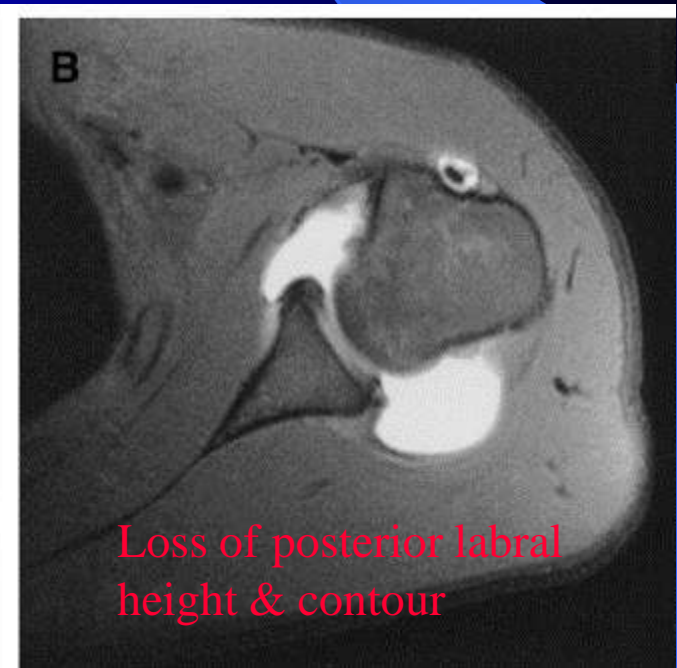
Posterior Capsule/Labrum



Kim's Lesion



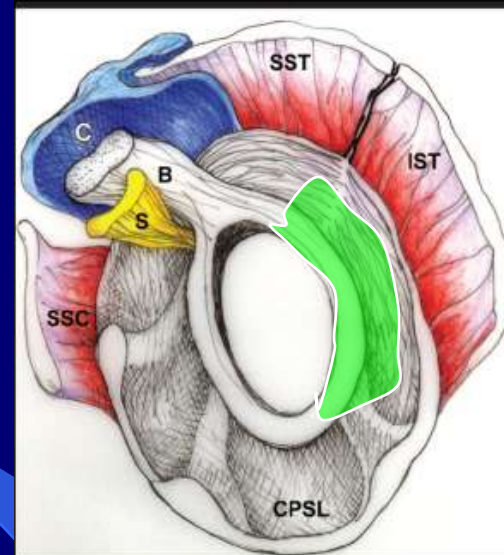
- Mechanism: force applied in posterior direction.
- Force exerted on PIGHL → post labral tear, propagating in medial to lateral direction
- Preserved chondro-labral junction.



Loss of posterior labral height & contour

Shoulder Dyslexia: Part III

Posterior Capsule/Labrum



Posterior capsule/labrum

Bennett Lesion

Crescentic bone at post-inf glenoid;
EXTRA-articular

“Cyst” at jxn of cartilage + post labrum

Kim’s lesion

Post labrum thickening in throwing shoulder

GIRD

Bone & cartilage disruption at post glenoid rim

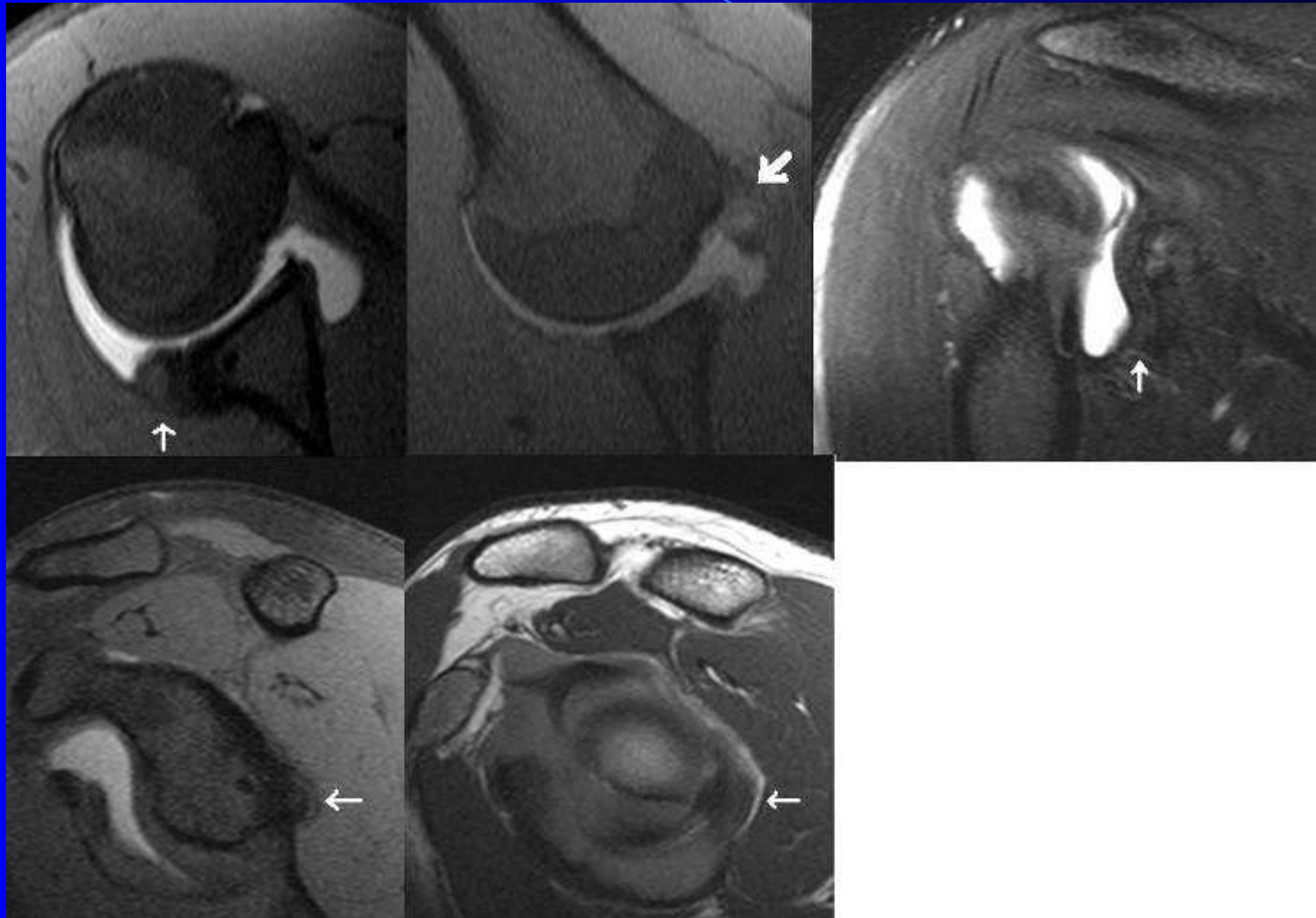
GARD

GIRD

- Glenoid internal rotation deficit
- Tight posterior capsule in the throwing shoulder (ie pitchers)
- MRI finding: thickening of the posterior capsule and labrum

GIRD

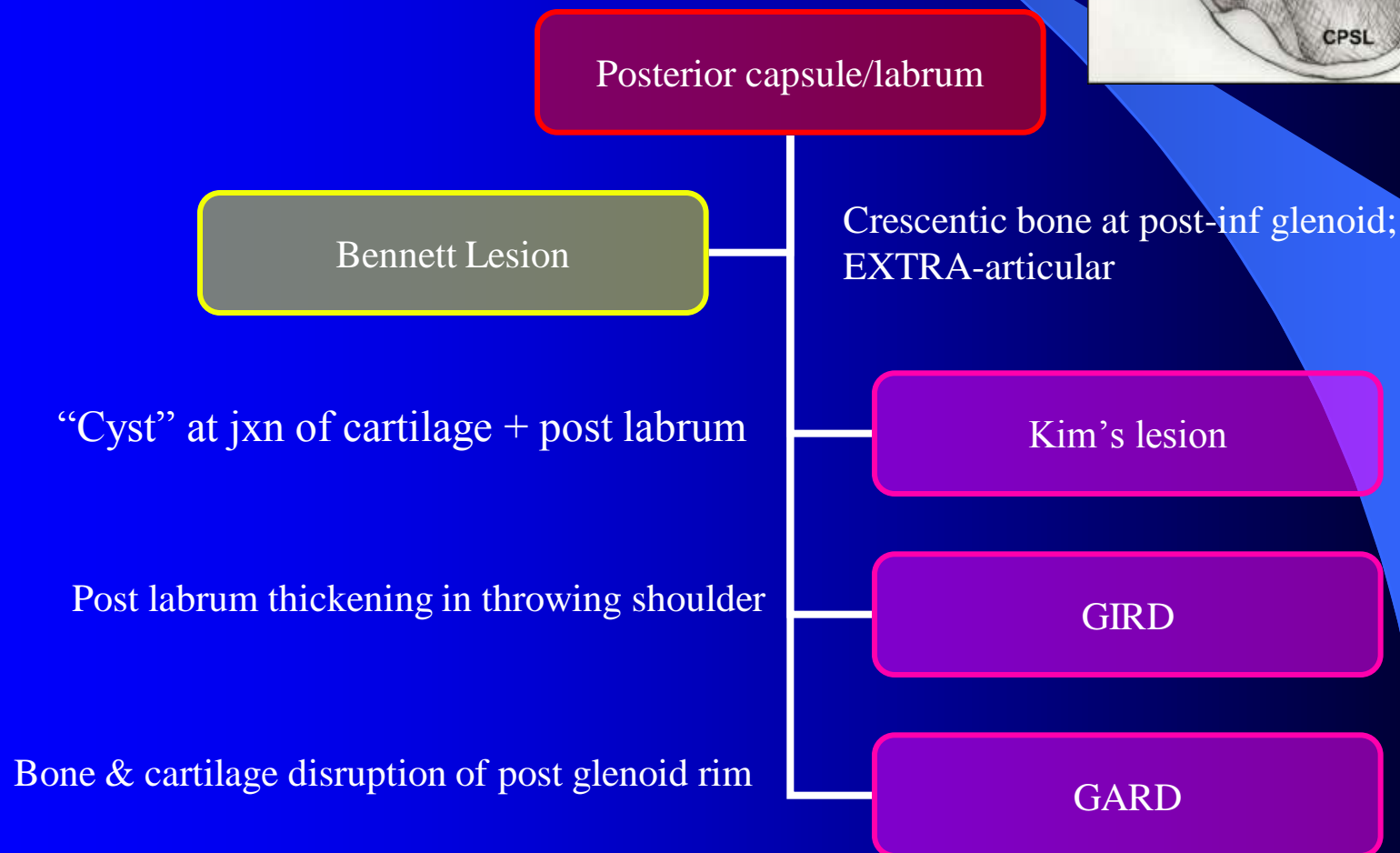
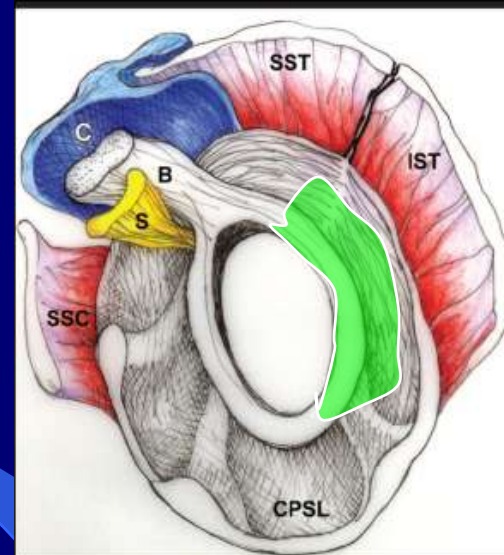
Major League Baseball Pitcher



Images courtesy of Arash Tehranzadeh

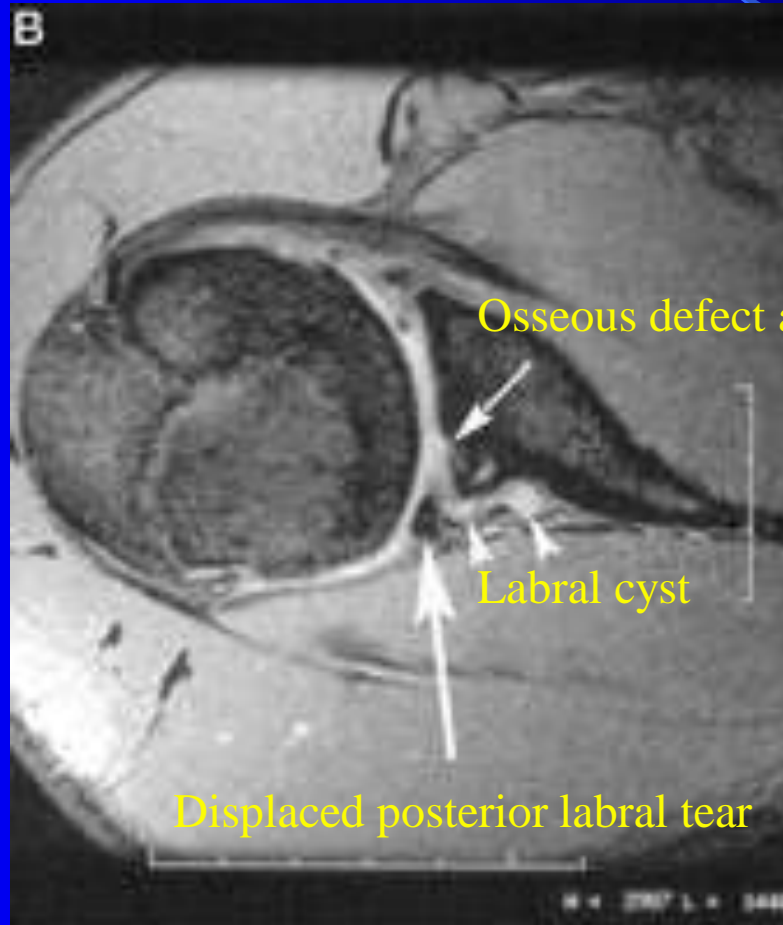
Shoulder Dyslexia: Part III

Posterior Capsule/Labrum



GARD: glenoid articular rim divot

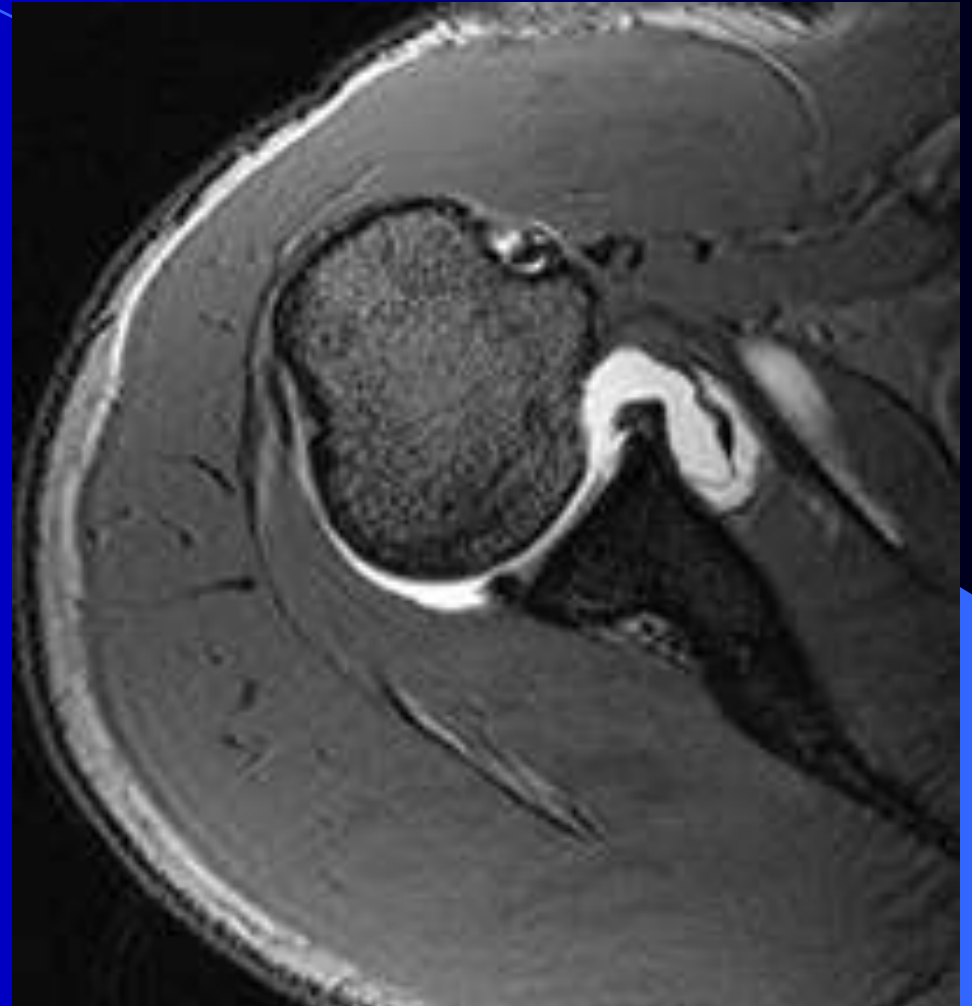
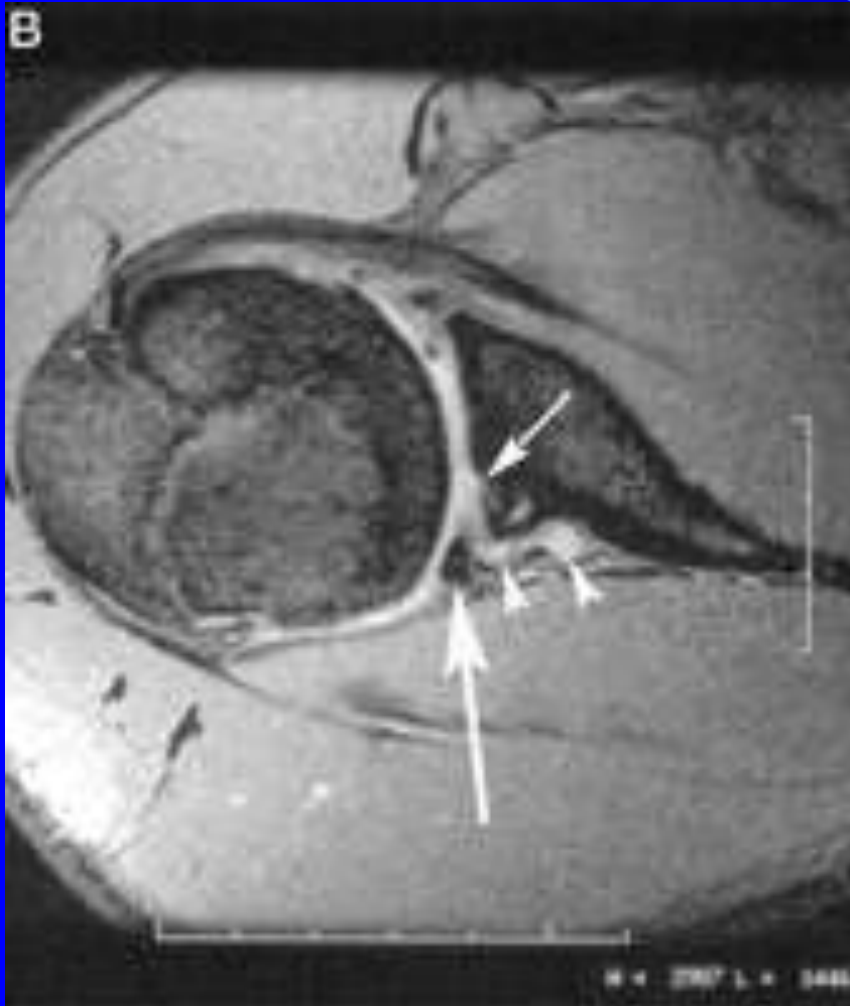
22 yo M w/ shoulder impaction injury while weightlifting, w/
posterior labral tear



GARD

vs

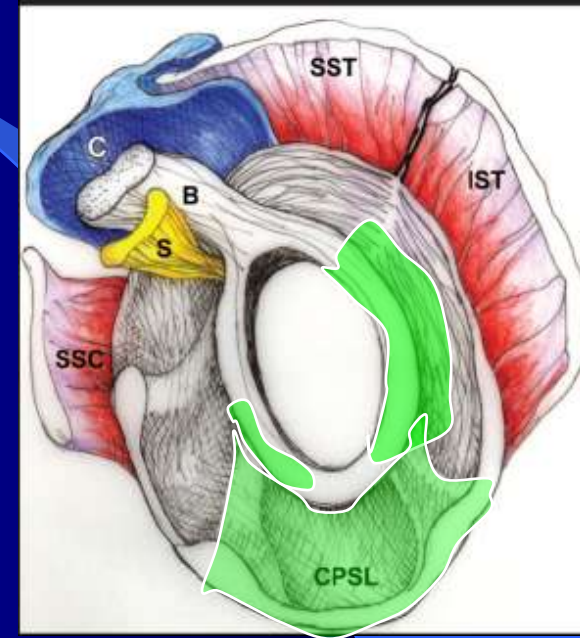
GLAD



Both are similar lesions in different locations!

Shoulder dyslexia: The alphabet soup

- **Ant-inf labrum:**
 - Bankart, Perthes, ALPSA, GLAD
- **Inferior capsule:**
 - HAGL, PHAGL, Axillary pouch injuries
- **Posterior capsule/labrum:**
 - GARD, GIRD, Kim's lesion, Bennett lesion





The Donald

Asanas with Props

The ancient yogis used logs of wood, stones, and ropes to help them practice asanas effectively. Extending this principle, Yogacharya Iyengar invented props which allow asanas to be held easily and for a longer duration, without strain.



YOGACHARYA IYENGAR IN SETUBANDHA SARVANGASANA

This version of the posture requires considerable strength in the neck, shoulders, and back, requiring years of practice to achieve. It should not be attempted without supervision

The Rest of Us



The MSK Ladies of UCSD

Because
To Fiberglass
LAS VEGAS





The MSK Men of UCSD



It's called the BONE PIT for a reason!!!

Thank you!



References

- Chung et al. *AJR* 2004; 183:355-359
- Resnick D. Bone and Joint Imaging.
- [John Hunter's MSK Teaching File](#)
- Beltran et al. Shoulder: Labrum and Bicipital Tendon. *Topics in Magnetic Resonance Imaging*. 14(1): 35–50
- Waldt et al. **Anterior Shoulder Instability. Radiology 2005; 237:578–583**
- **Parmar H et al: MR Arthrography in Recurrent Anterior Shoulder Instability. J Postgrad Med 2002;48:270-274**
- De Maeseneer: J Comput Assist Tomogr, Volume 22(1).January/February 1998.31-34
- Sanders et al. *The American Journal of Sports Medicine* 28:414-434 (2000)

- Kim et al. Arthroscopic Capsulolabroplasty for Posteroinferior Multidirectional Instability of the Shoulder. *The American Journal of Sports Medicine* 32:594-607 (2004)
- Kim et al. Kim's lesion: An incomplete and concealed avulsion of the posteroinferior labrum in posterior or multidirectional posteroinferior instability of the shoulder. [Arthroscopy: The Journal of Arthroscopic & Related Surgery](#) Volume 20, Issue 7 , September 2004, Pages 712-720
- Nagakawa et al. Posterior shoulder pain. [Journal of Shoulder and Elbow Surgery](#) Volume 15, Issue 1 , January-February 2006, Pages 72-77