

BENNETT LESIONS-DO WE CARE?

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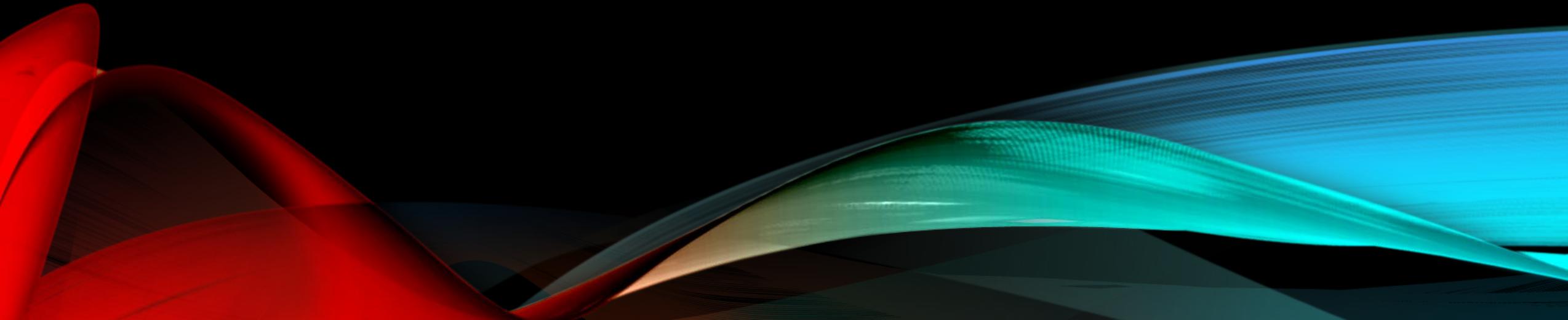
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DISCLOSURES

I have no disclosures, so let's move on!!!!!!!!!!



HISTORY OF THE BENNETT'S LESION

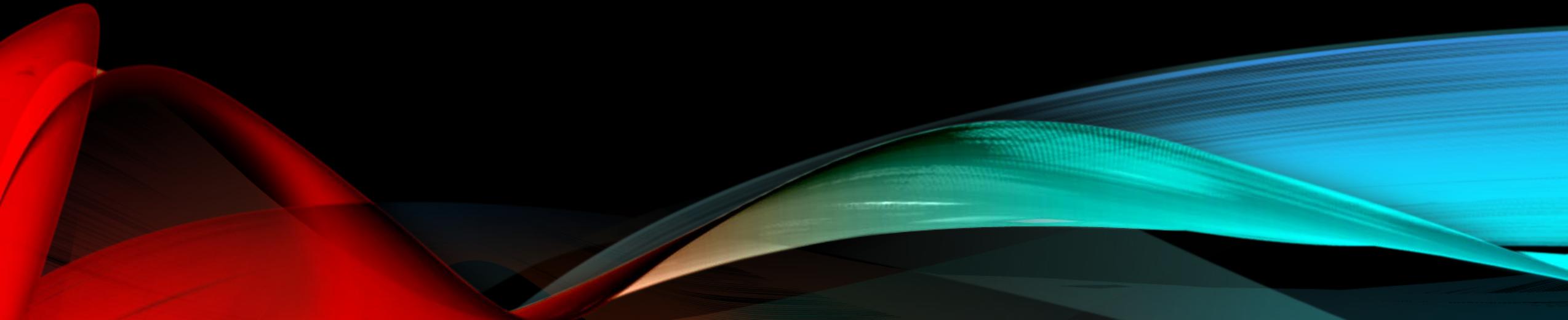
Bennett GE. Shoulder and elbow lesions of the professional baseball pitcher. JAMA 1941 and Am J Surg 1959

Bennett described in 1941 a posterior inferior glenoid lesion or calcification that he thought was caused by traction stresses in the region of the long head of the triceps muscle. Pain was thought to be from the proximity of the calcific deposit to the axillary nerve with subsequent irritation. Radiographic visualization was performed with the arm abducted and externally rotated and the x-ray beam angled 5° cephalad.

HISTORICAL TREATMENT OF BENNETT'S LESIONS (THROWER'S EXOSTOSIS)

Treatment of the Bennett's Lesion was excision of the posterior calcifications through a posterior approach to the shoulder.

Years later, Bennett later talked about that this procedure wasn't necessary!



SO WHY ARE WE TALKING ABOUT BENNETT'S
LESION AND DO WE REALLY CARE?



EVOLUTION OF THE DIAGNOSIS WITH TECHNOLOGY

- With the evolution of technology in the evaluation of the human body, the question will come up again as to the validity of Bennett's Lesions as a pathologic problem in the throwing athlete.
 - MRI/MRA's
 - CT scans
 - Bone Scans
 - Arthroscopy

EVOLUTION OF THOUGHT IN THE LITERATURE

- AJSM 1994
- Posterior Ossification of the Shoulder: The Bennett Lesion Etiology, Diagnosis, and Treatment* James D. Ferrari, MD, Dudley A. Ferrari, MD, James Coumas, MD, and Arthur M. Pappas, MD
 - From the Departments of Orthopedics and Physical Rehabilitation and & Radiology, University of Massachusetts Medical Center, Worcester, Massachusetts

HYPOTHESIS, FINDINGS & CONCLUSION

- The Bennett lesion is an extraarticular posterior ossification associated with posterior labral injury and posterior undersurface rotator cuff damage. It is not, however, a result of traction stresses in the region of the triceps insertion.
- The Bennett lesion may be caused by repetitive traction on the posterior band of the PIGHL and posterior capsule produced by posterior subluxation during cocking, posterior decelerative forces during follow-through, or a combination of the two.

WHO DO YOU SEE THESE LESIONS IN?

- Rick Wright and George Paletta in 2004 looked at the prevalence of Bennett's Lesions in Major League Baseball Pitchers.
 - Fifty-five asymptomatic major league pitchers underwent routine preseason radiographic screening. Radiographs were reviewed for the presence of a Bennett's lesion. Player demographics, pitching, and baseball records were reviewed to obtain the patient's dominant arm, age, years and innings pitched, and time on the disabled list or surgery.

FINDINGS

- Twelve pitchers (22%) were noted to have a radiographic Bennett lesion. No statistically significant difference was noted in age, years pitched, or innings pitched between pitchers with and without a Bennett lesion. No player who demonstrated a Bennett lesion required surgical treatment for shoulder pain during his time with the club. Two players required time on the disabled list, but neither player had complaints of posterior shoulder pain.

CONCLUSION

- This lesion is a relatively common finding in major league pitchers. Concomitant pathology should be suspected when evaluating throwers with posterior shoulder pain and this lesion.

BENNETT'S LESION WITH INTERNAL IMPINGEMENT

Meister, K. , Andrews, JR , Batts, J. , Wilk, K. , Baumgarten, T. Symptomatic thrower's exostosis: arthroscopic evaluation and treatment. Am J Sports Med. 1999;27:133–136.

-22 throwers with Bennett's lesions also had undersurface rotator cuff tears associated with internal impingement.

-Presence of a Bennett's lesion has a reasonable specificity, but low sensitivity in the presence of internal impingement

THE GREAT DEBATE

- Are Bennett's Lesions "PATHOLOGIC" in the throwing athlete or a sequelae of throwing???



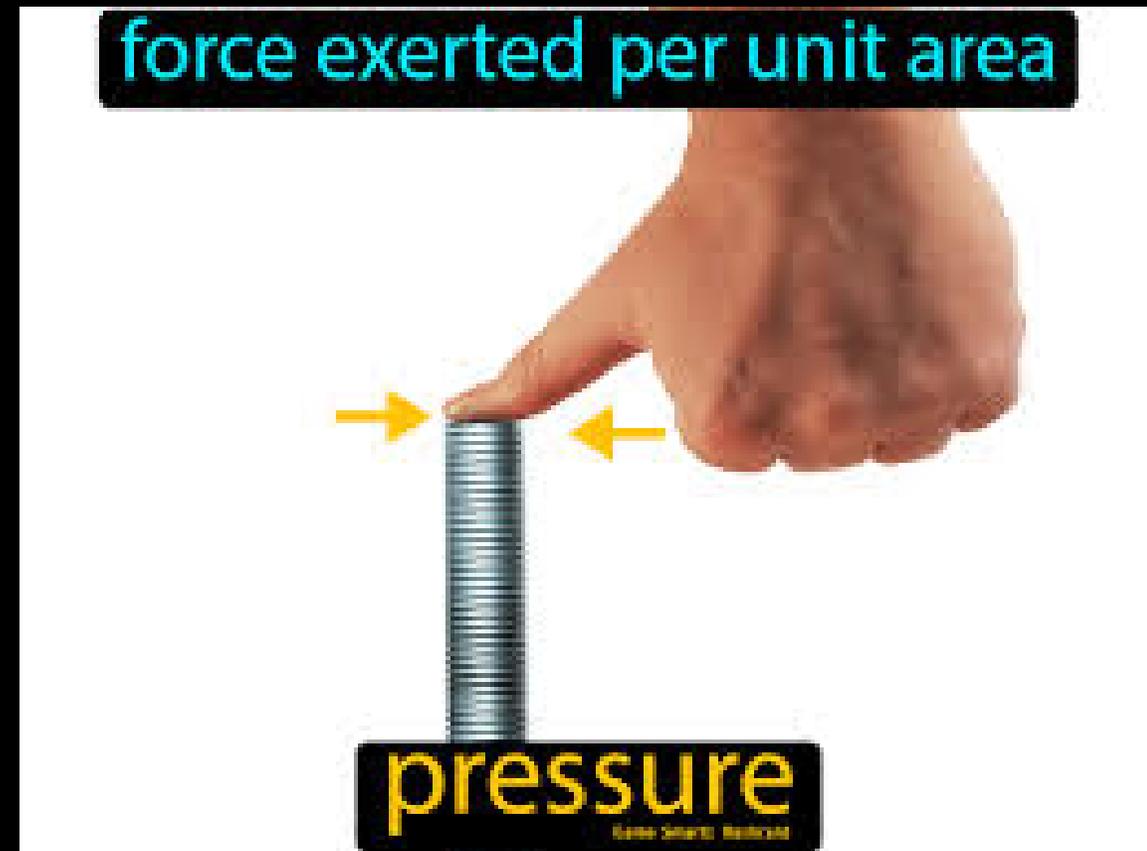
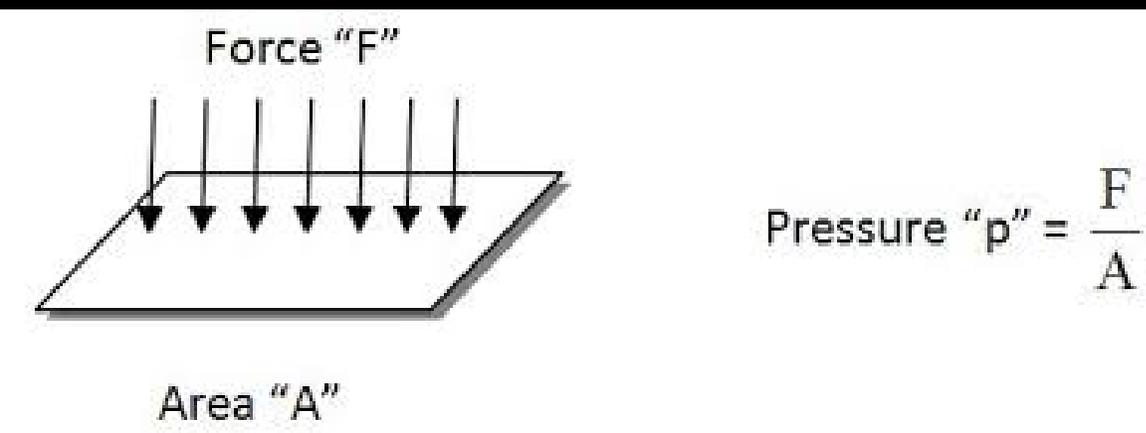
CONCOMINANT ISSUES

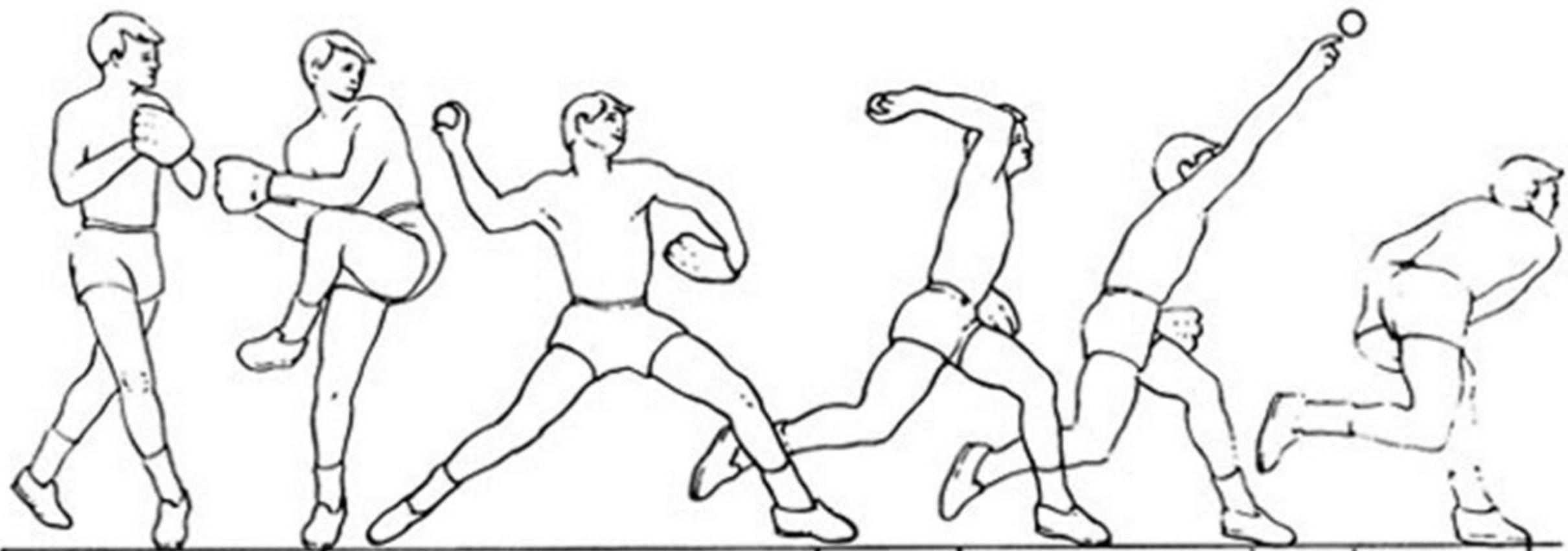
- GIRD
- Scapular Dyskinesis
- SLAP tears
- SICK scapula syndrome
 - “S”capular malposition
 - “I”nferior medial border prominence
 - “C”oracoid pain and malposition
 - Dys”K”inesis of scapular movement
- Shoulder Instability (anterior/posterior)

RADIOGRAPHS

- X-Ray
 - Stryker Notch View
 - Assessment of the posterior exostosis (osteophyte)
 - Modified Bennett view (Wright et al)
 - X-ray tube angled 5 degrees cephalad and the arm abducted 45 degrees
- MRI
 - ABER view
 - MRA?
 - Bone marrow edema within the lesion (is it HOT!)
 - Articular side RTC tears
 - Posterior Labral tear (cysts)
 - Cystic changes of the posterior humeral head
- CT Scan

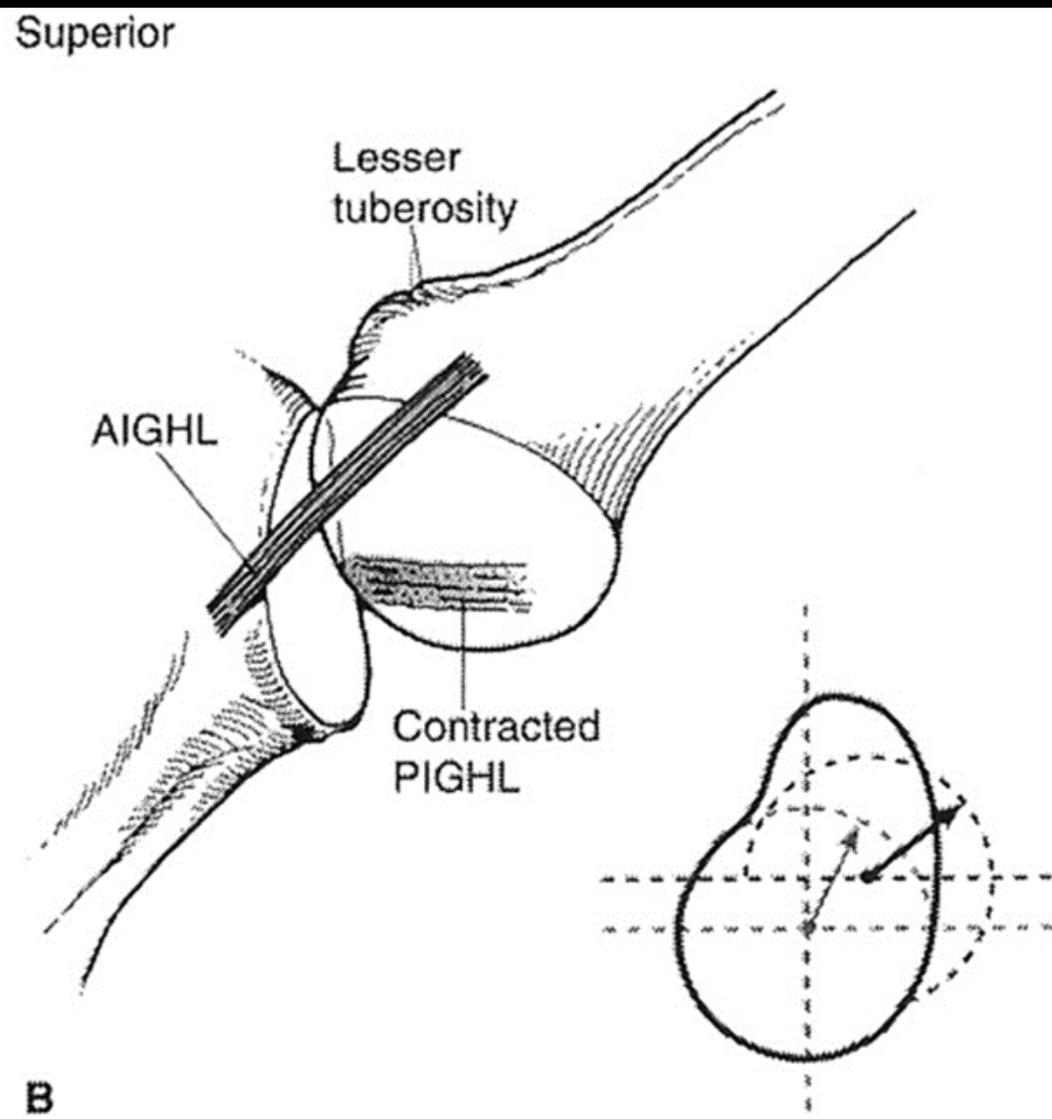
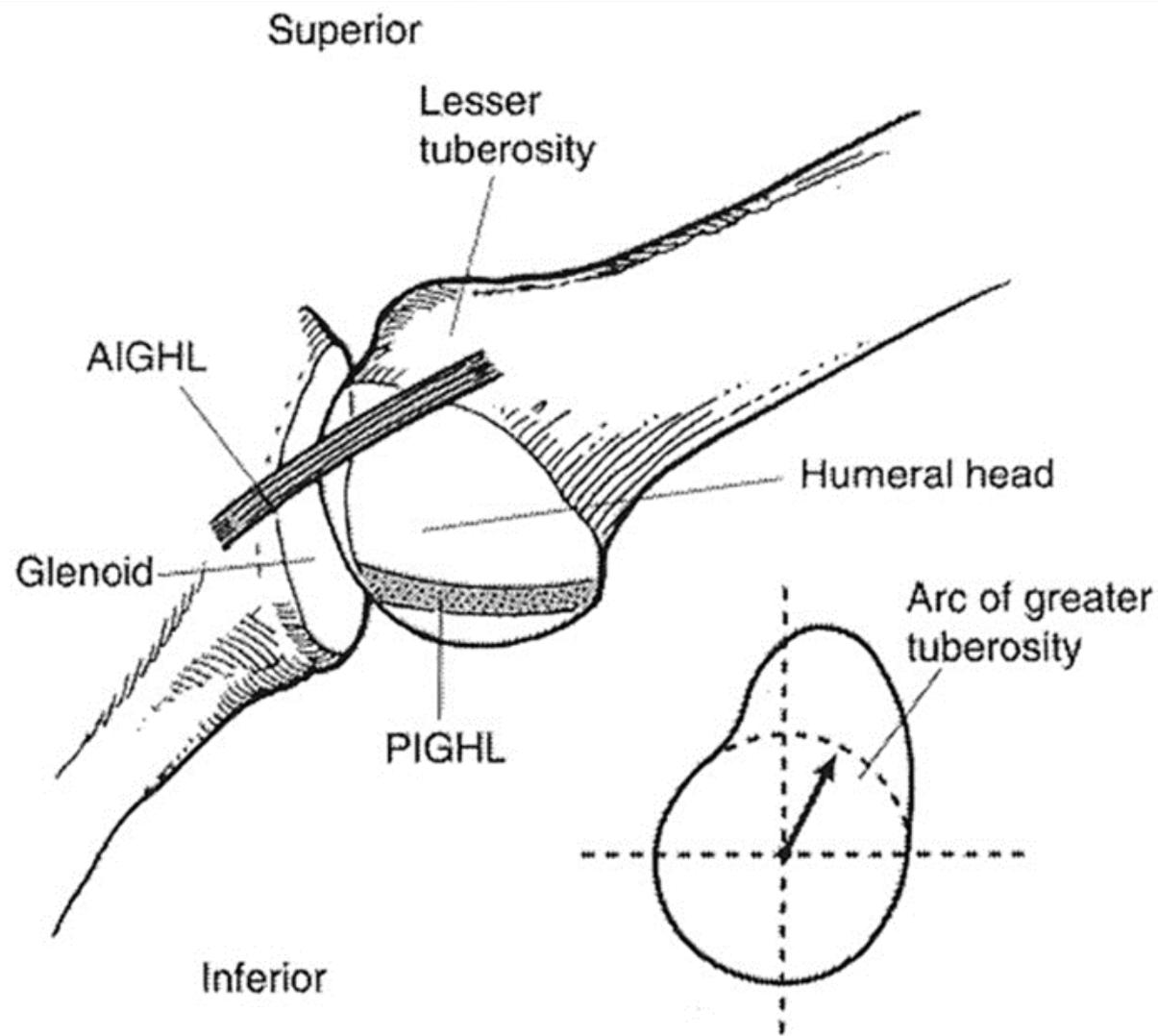
ETIOLOGY OF THE "THROWER'S EXOSTOSIS" COUNTRY BOY COMMON SENSE

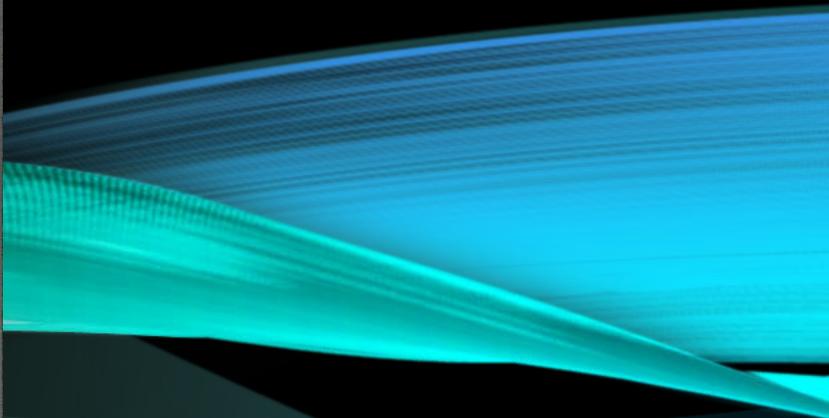
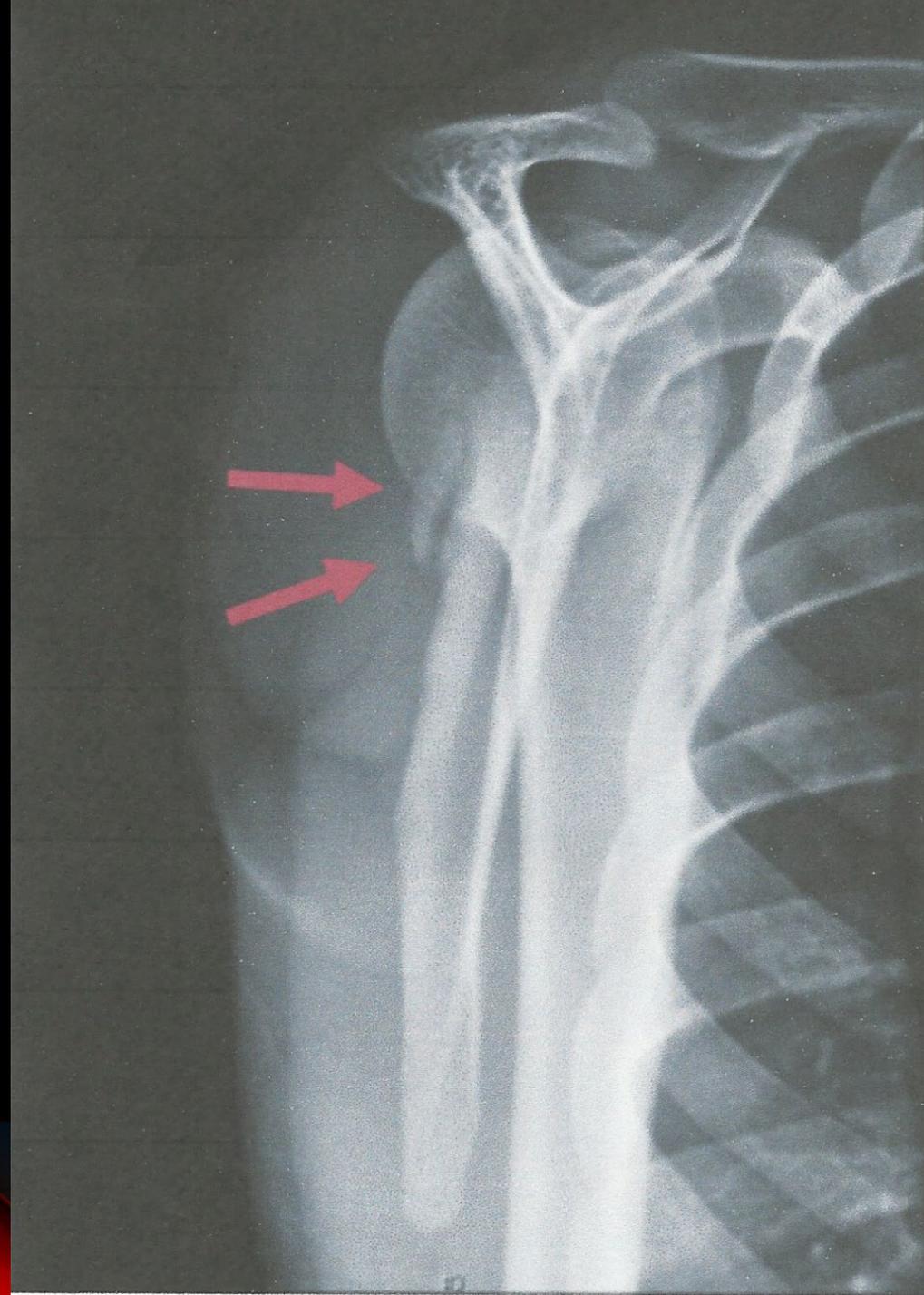


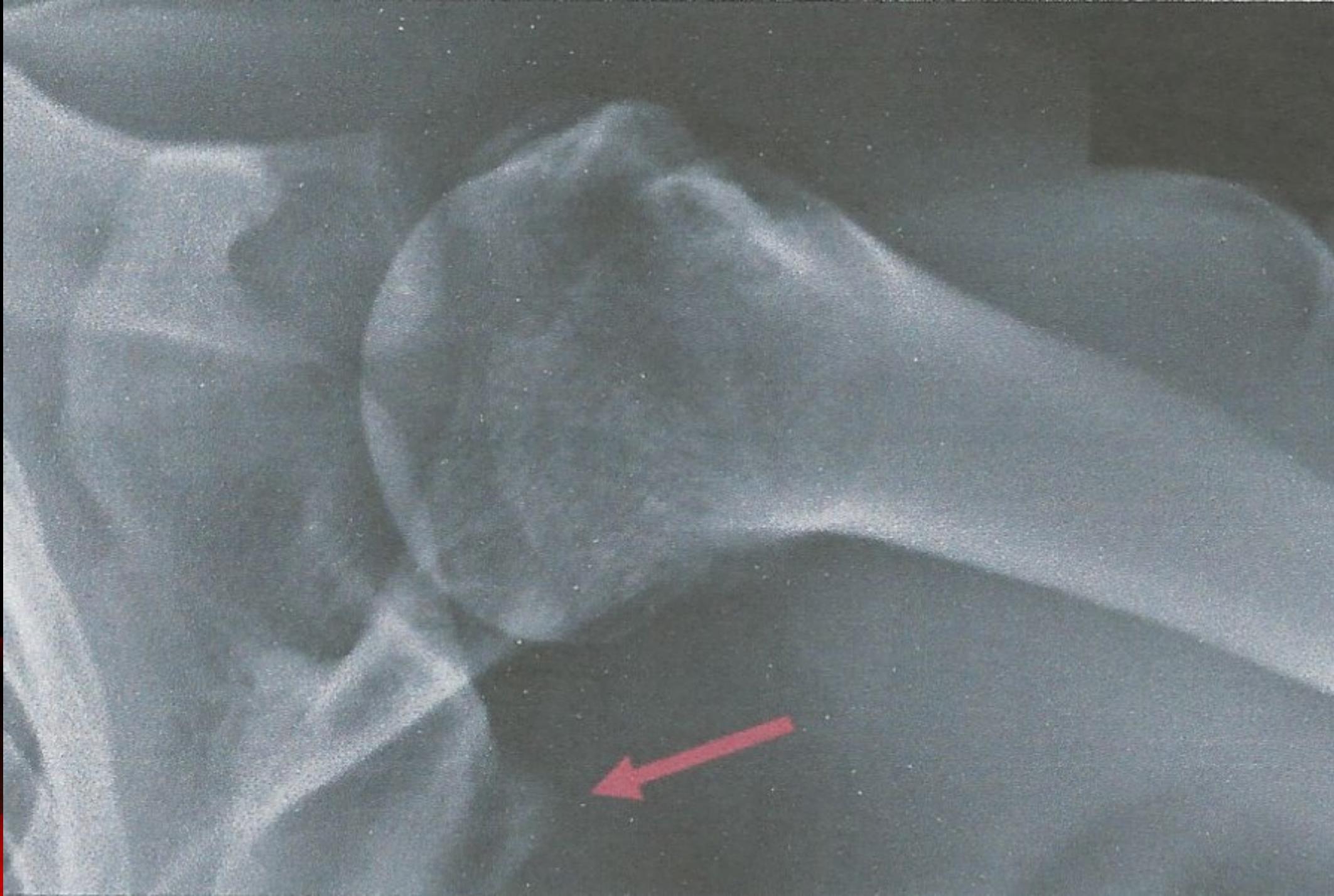


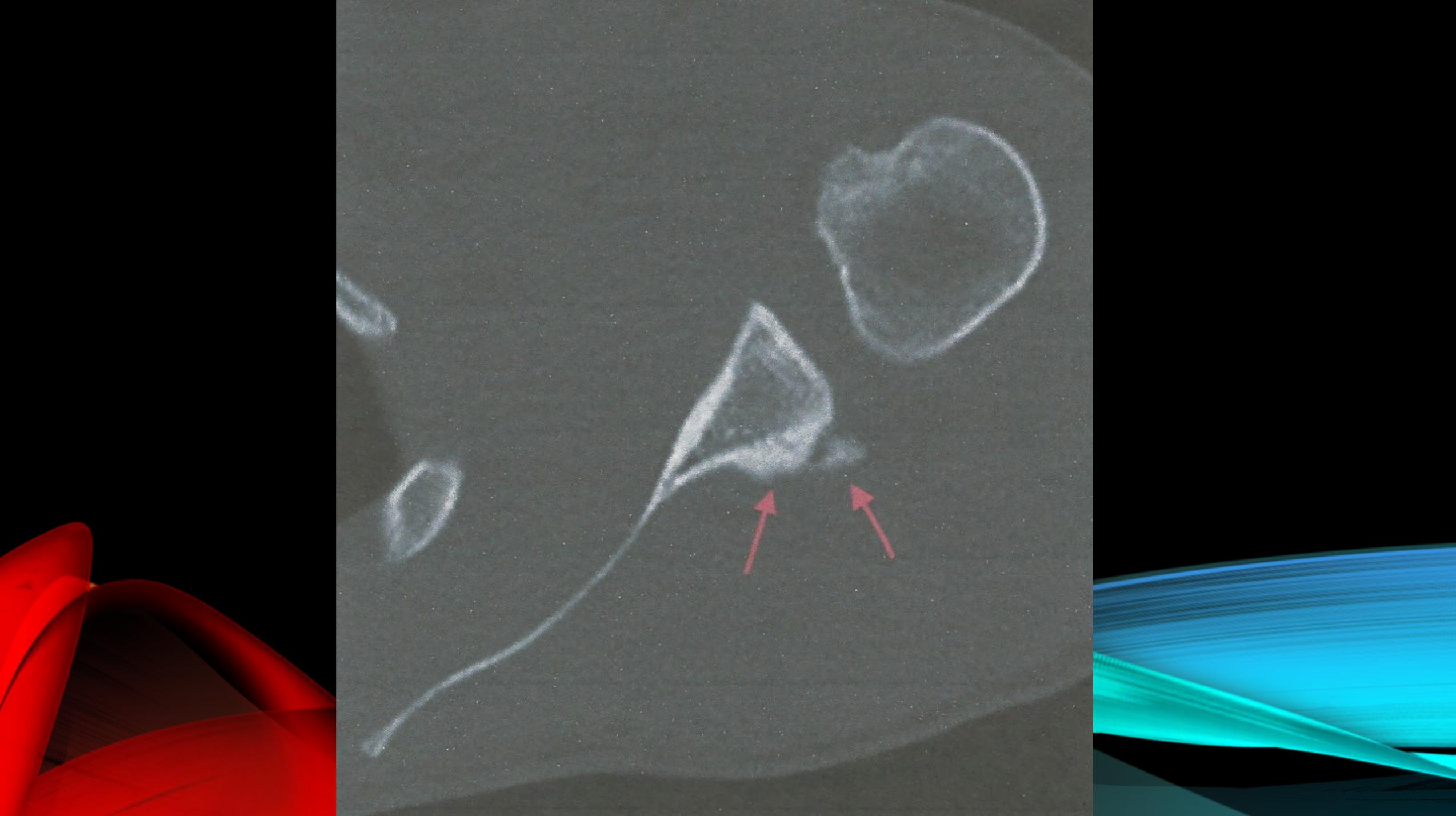
Wind-up Early cocking Late cocking Acceleration Deceleration Follow-through

Start Hands apart Foot down Maximum external rotation Ball release Finish









PHYSICAL MANIFESTATIONS

- Posterior shoulder discomfort with late cocking and early acceleration phase of the throwing cycle. May radiate down the posterior upper arm (Bennett's assertion of the triceps being involved).
- Posterior shoulder pain on ball release (adducted/internally rotation)
- Signs of SICK scapular syndrome
- Bicipital discomfort
- Anterolateral shoulder pain

GOALS OF TREATMENT

- Primary goal
 - Make sure that we have the accurate diagnosis to the best of our ability!!
 - History
 - Physical Exam
 - Diagnostic test
- Pain relief
- Restore normal kinematics of the shoulder
 - Cable system PIGHL vs. AIGHL
- Increase function

THROWER'S PARADOX

- Described by K. Wilk et al
 - “The thrower’s shoulder must possess a delicate balance between sufficient laxity to allow for excessive external rotation yet sufficient stability to prevent glenohumeral joint subluxation”.

NON-SURGICAL TREATMENT

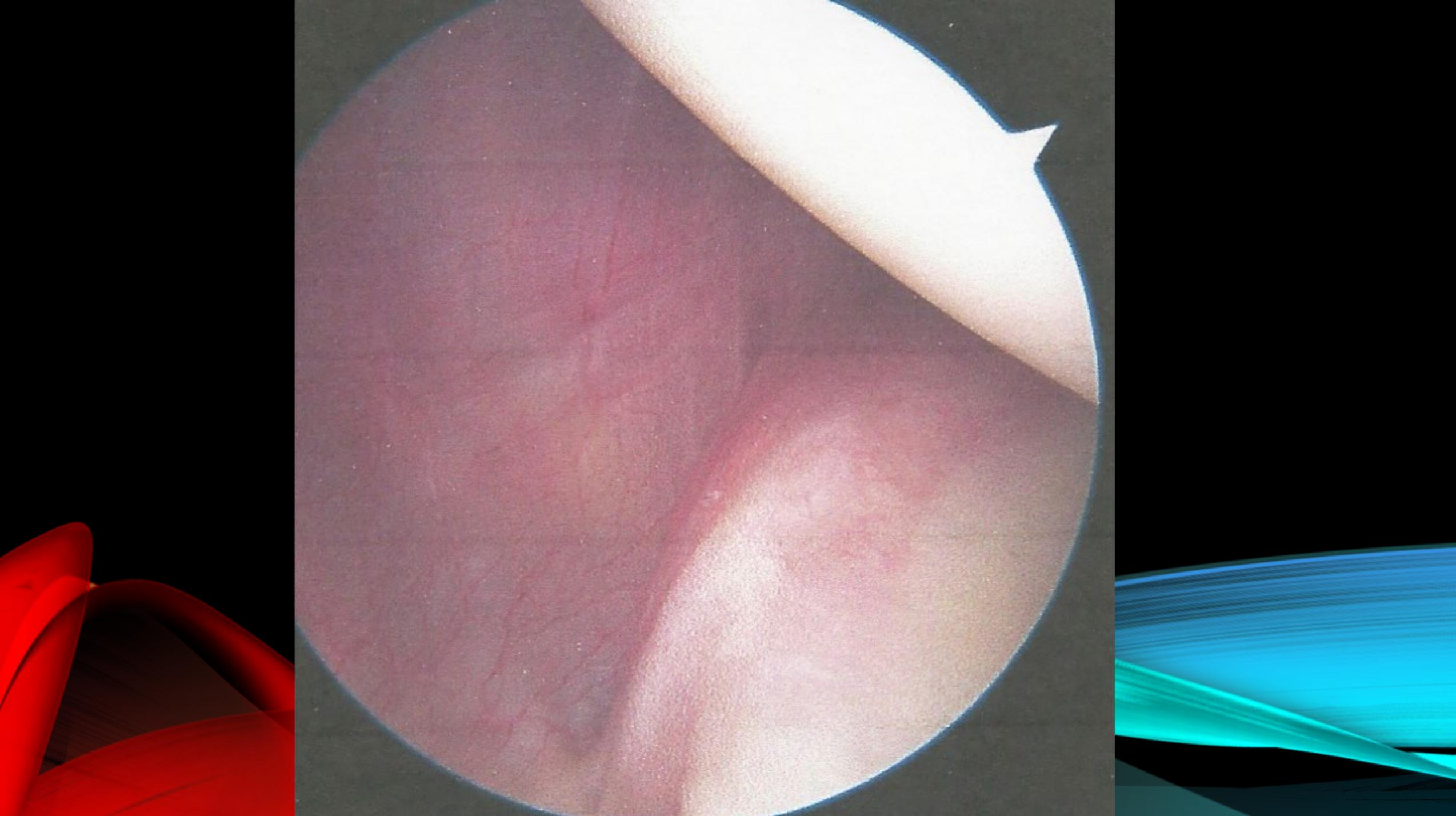
- Oral NSAID's
- Injections (therapeutic & diagnostic)
- Education (athlete, coach, agent?)
 - SLAP tear (pathologic vs. physiologic)
 - RTC tears
 - Humeral head cysts
- Therapy
 - Addressing GIRD and scapular stability
 - Certain subset of athletes are “stretch non-responders” to posterior capsular stretching

SURGICAL TREATMENT: PRE-OP QUESTIONS

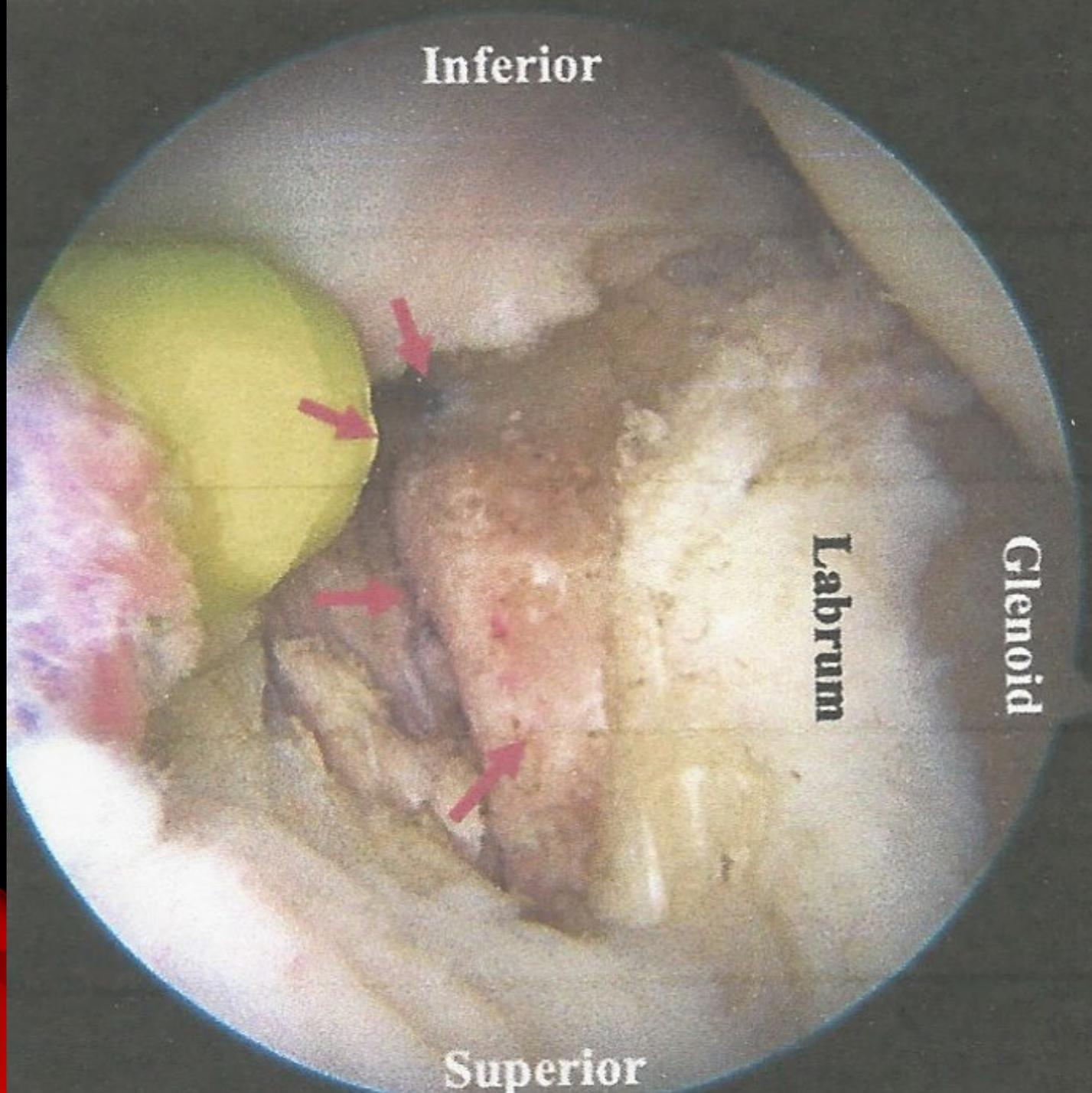
- Do we have the right diagnosis?
- Have we exhausted all treatment options and given sufficient time?
- Does the athlete have an understanding of expected outcomes?
- What do you expect to find inside the shoulder?

SURGICAL TREATMENT: INTRA-OP QUESTIONS

- What do you see?
 - If you see signs of internal impingement
 - How relevant are the findings (labral tear, RTC tear, glenoid wear)?
 - Do you address the Bennett's Lesion?
 - If you see no signs of internal impingement
 - Is it the Bennett's Lesion causing the problem?
 - If you excise the Lesion, do you close the posterior capsule?
 - Were they a "stretch non-responder" pre-op?



Inferior



Glenoid

Labrum

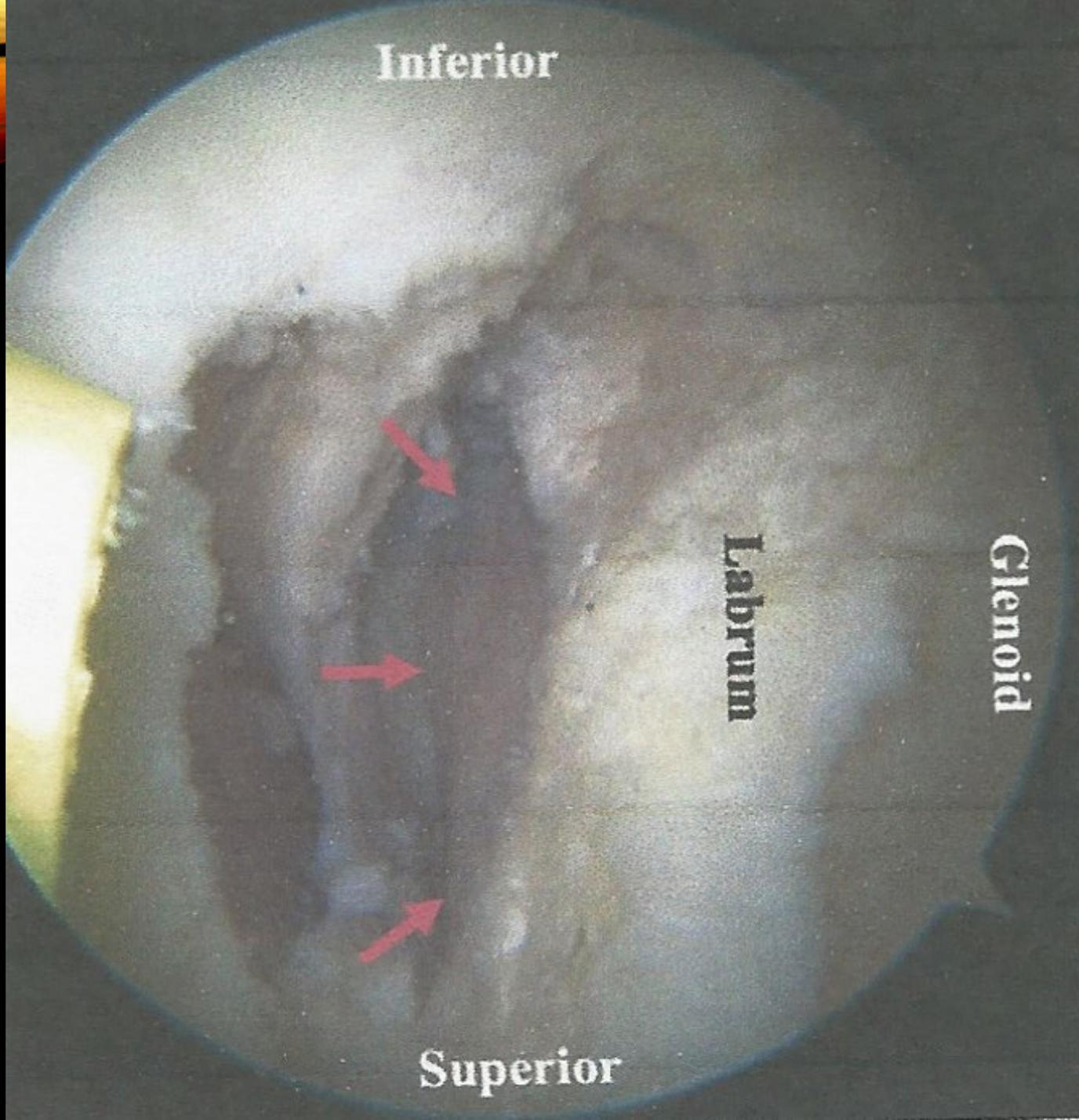
Superior

Inferior

Labrum

Glenoid

Superior



SURGICAL OUTCOMES IN THE LITERATURE

- First arthroscopic excision was described by Meister et al. in 1999
 - 55% returned to their pre-injury level of throwing
 - No closing of the posterior capsule
- Yoneda et al. in 2002 reported on an arthroscopic “Bennett-plasty”
 - Reported an 88% satisfaction rate (16 patients) with 69% of patients returning to their pre-injury level in baseball
 - No difference in closing capsule vs. capsulotomy

COMPLICATIONS

- Damage to the branches of the axillary nerve
- Damage to the labrum
- Causing Posterior instability of the shoulder

SUMMARY

- Bennett's Lesions are an enigma for throwing athletes.
- Are they supposed to be there secondary to the increased stress on the posterior aspect of the shoulder?
- Is it really the internal impingement and sequelae that is the real problem and by excising the Lesion you are treating the internal impingement?
- It is very reasonable to perform a diagnostic arthroscopy to do an assessment and treat if you have exhausted all other options.

THANK YOU'S

- Dr. William Raasch and Dr. Gary Green
- Kansas City Royals Training Staff/Strength & Conditioning
 - Head Trainer – Nick Kenney
 - Assist. Trainer – Kyle Turner
 - Head PT – Jeff Blum
 - Tissue Specialist – Chris Delucia
 - Head of Strength & Conditioning: Ryan Stoneberg
 - Asst. S & C : Luis Perez
 - Dave Iannica, Justin Hahn, Tony Medina
 - All of my Minor League Training Staff

I LOVE YOU GUYS!!!!!!!



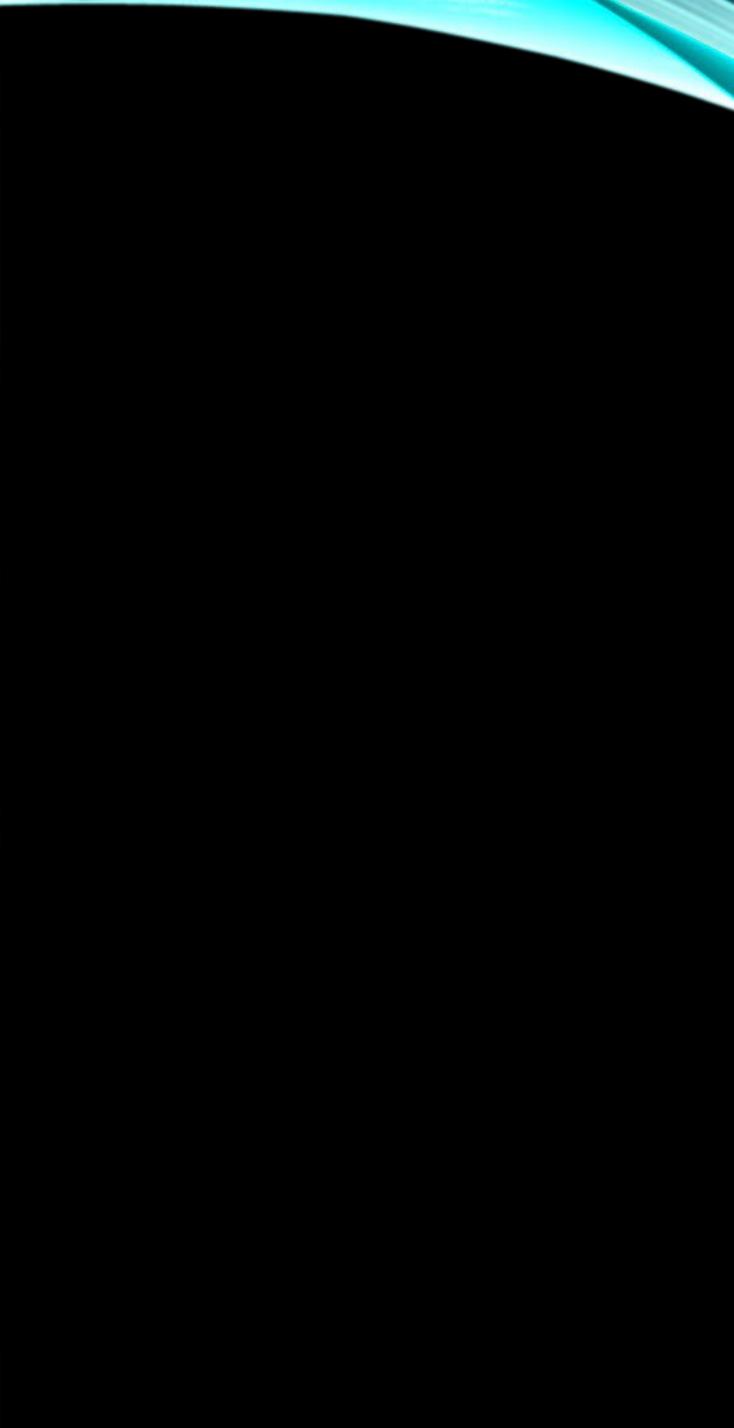
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Bill Snyder Family Football Stadium



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QUESTIONS???

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