Management of Posterior Shoulder Instability

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Disclosures

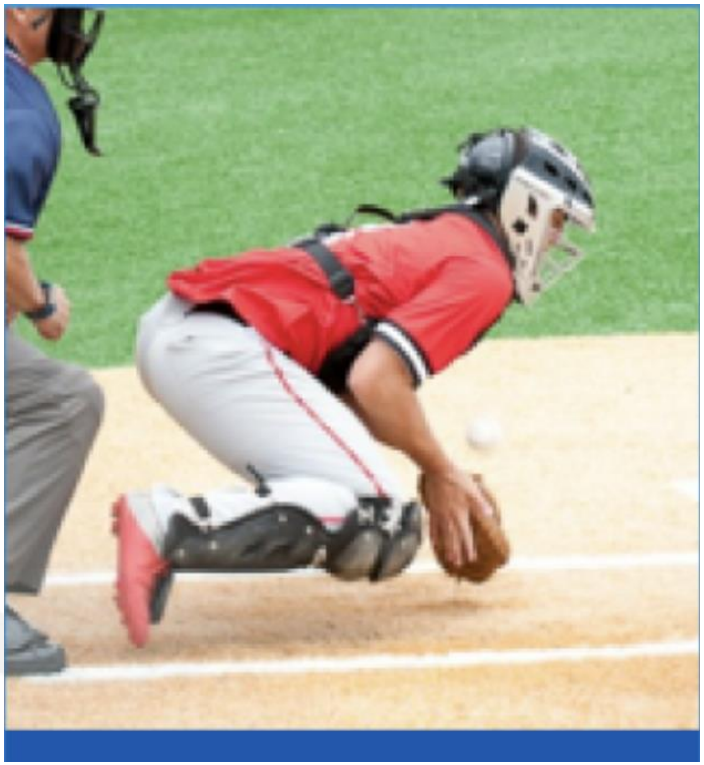
- Smith and Nephew: consultant

Learning Objectives

- Understand the difference between anterior vs posterior shoulder instability.
- Understand the relevant anatomy for the posterior shoulder.
- Discuss non-operative vs operative treatment options for recurrent posterior shoulder instability.

Clinical Question

- What is the appropriate treatment for a high school athlete with posterior shoulder instability?



Posterior Instability: The Challenge

- This is not anterior shoulder instability…
  - Anterior: Instability, dislocation, traumatic event
  - Posterior: Pain, loss of strength, not dislocations

- More challenging diagnosis
  - Often delayed or missed all together
  - Insidious onset

Bernhardson et al, AJSM 2019

Comparative Study > Am J Sports Med. 2019 Mar;47(3):682-687.
doi: 10.1177/0363546518819199. Epub 2019 Jan 30.

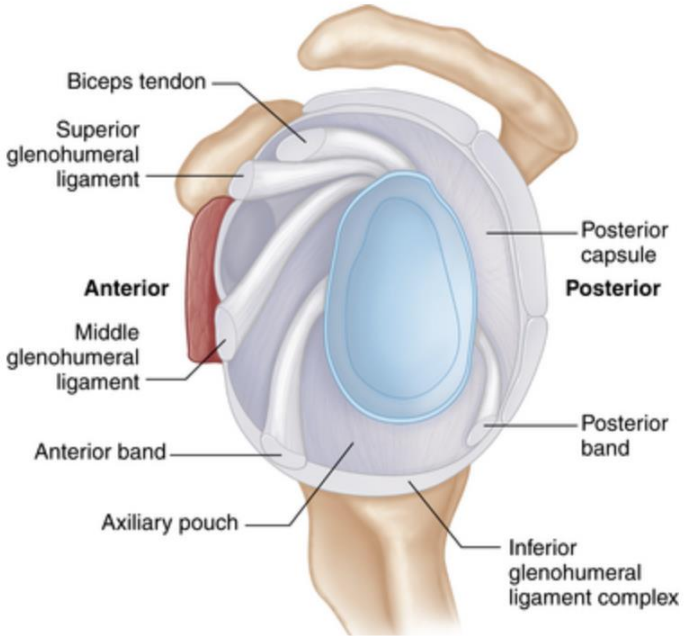
A Prospective Analysis of Patients With Anterior Versus Posterior Shoulder Instability: A Matched Cohort Examination and Surgical Outcome Analysis of 200 Patients

Posterior Shoulder Instability

- Up to 10% of all shoulder instability cases (Often unrecognized)
- Football players, rugby, weight lifters, paddling sport athletes, and climbers.
- Several etiologies including acute traumatic instability, atraumatic instability, seizures, and repetitive microtrauma.
- For atraumatic or acute on chronic cases, must differentiate true posterior instability from posterior/inferior or MDI

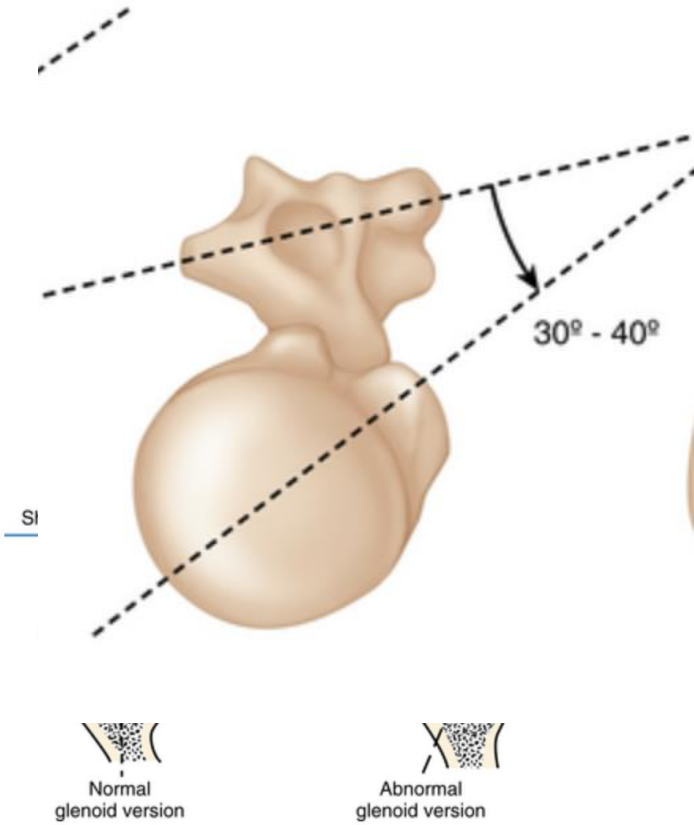
Anatomy is Key

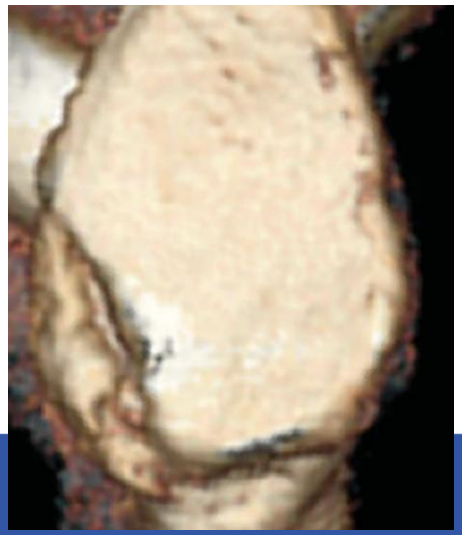
- Static vs dynamic stabilizers
  - Static: posterior labrum, bony morphology, posterior capsule, PIGHL, SGHL
  - Dynamic: rotator cuff (subscapularis is primary)
- Humeral head congruency



Anatomy is Key

- Glenoid Retroversion
  - average glenoid retroversion was $1^{o} \pm 3^{o}$
  - average humeral head retroversion was $26^{o} \pm 11^{o}$.
  - Glenoid retroversion higher in posterior instability
- Glenoid hypoplasia
- Posterior glenoid bone loss





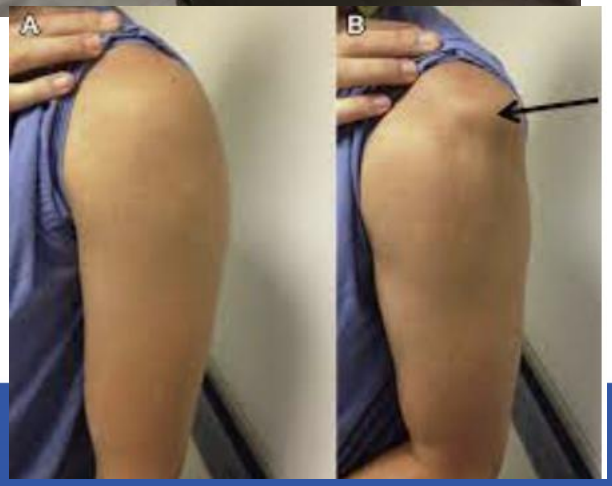
Matsumura et al. JSES 2014
Gottschalk et al Arthroscopy 2015

History

- Rarely, classic posterior dislocation
- More often deep pain in posterior shoulder
- Vague, diffuse symptoms
- Drop in strength, performance
- Mechanical symptoms, clicking, locking
  - Posterior inferior labral tears, loose bodies, chondral flaps

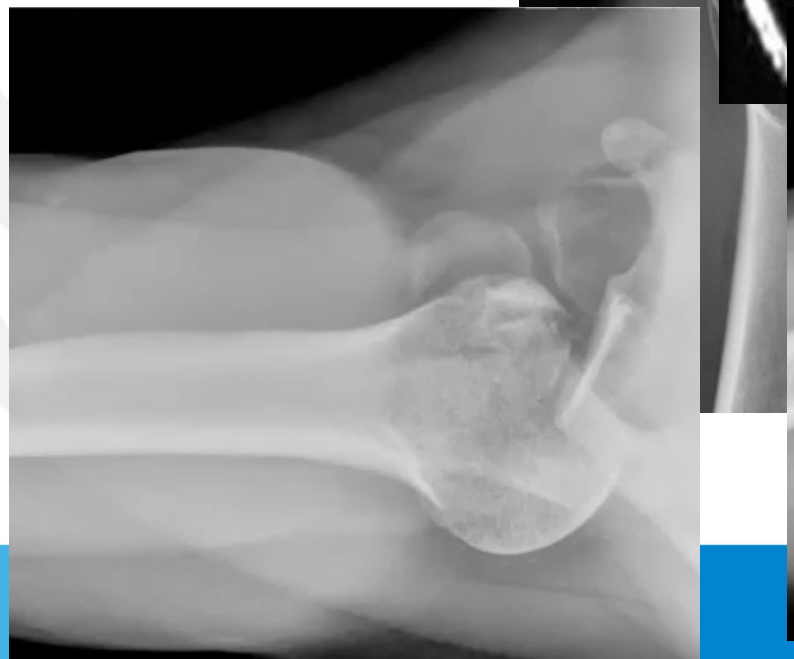
Physical Exam

- Most have normal exam
- Jerk
- Kim
- Posterior Load and Shift
- Sulcus



Imaging

- X-rays
  - Axillary important
- MRI
  - Reverse hill sachs
- CT

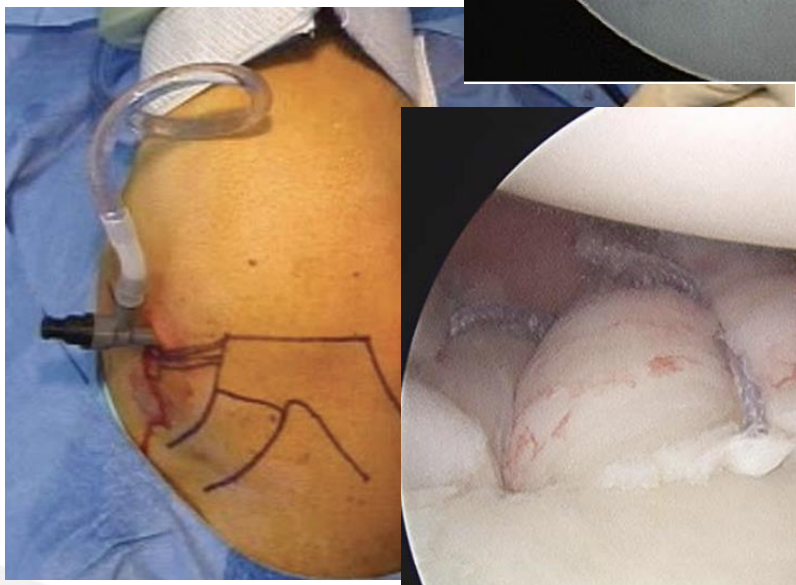


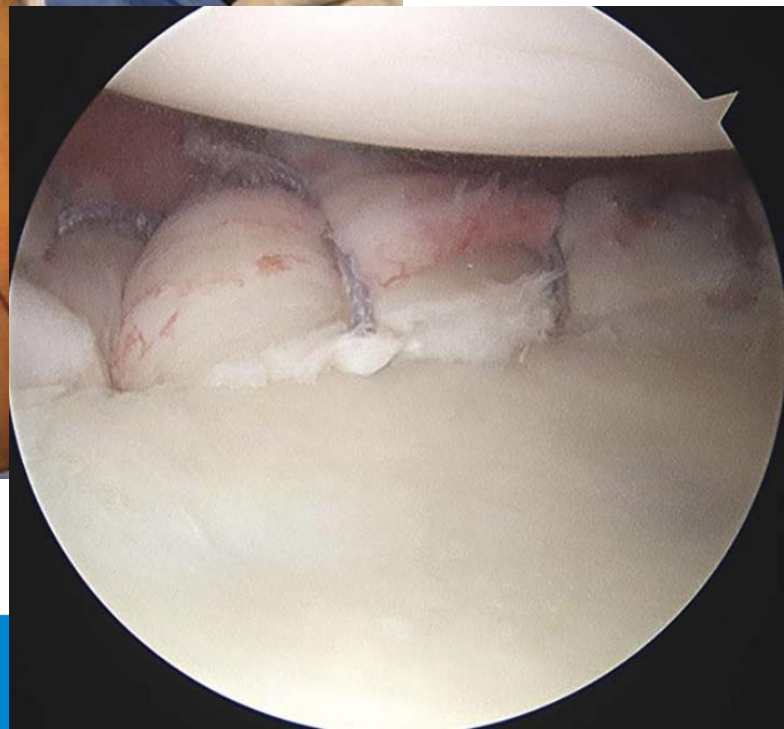
Treatment

- Non operative is first line
  - Subscapularis strengthening
  - Scapulothoracic mechanics
  - Scapula and RTC strengthening

Surgical Options

- Arthroscopic posterior labral repair

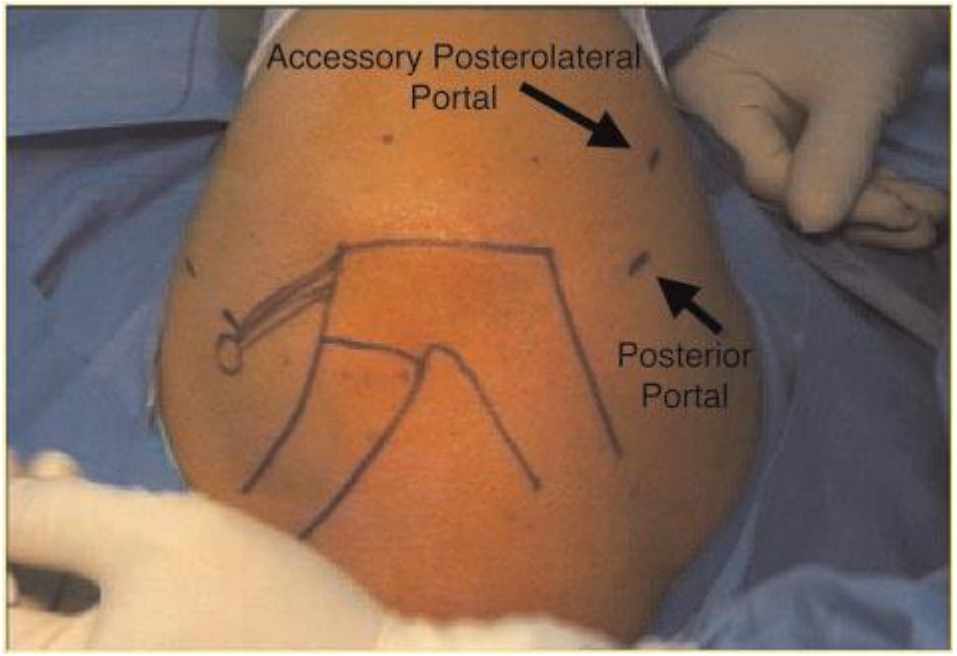




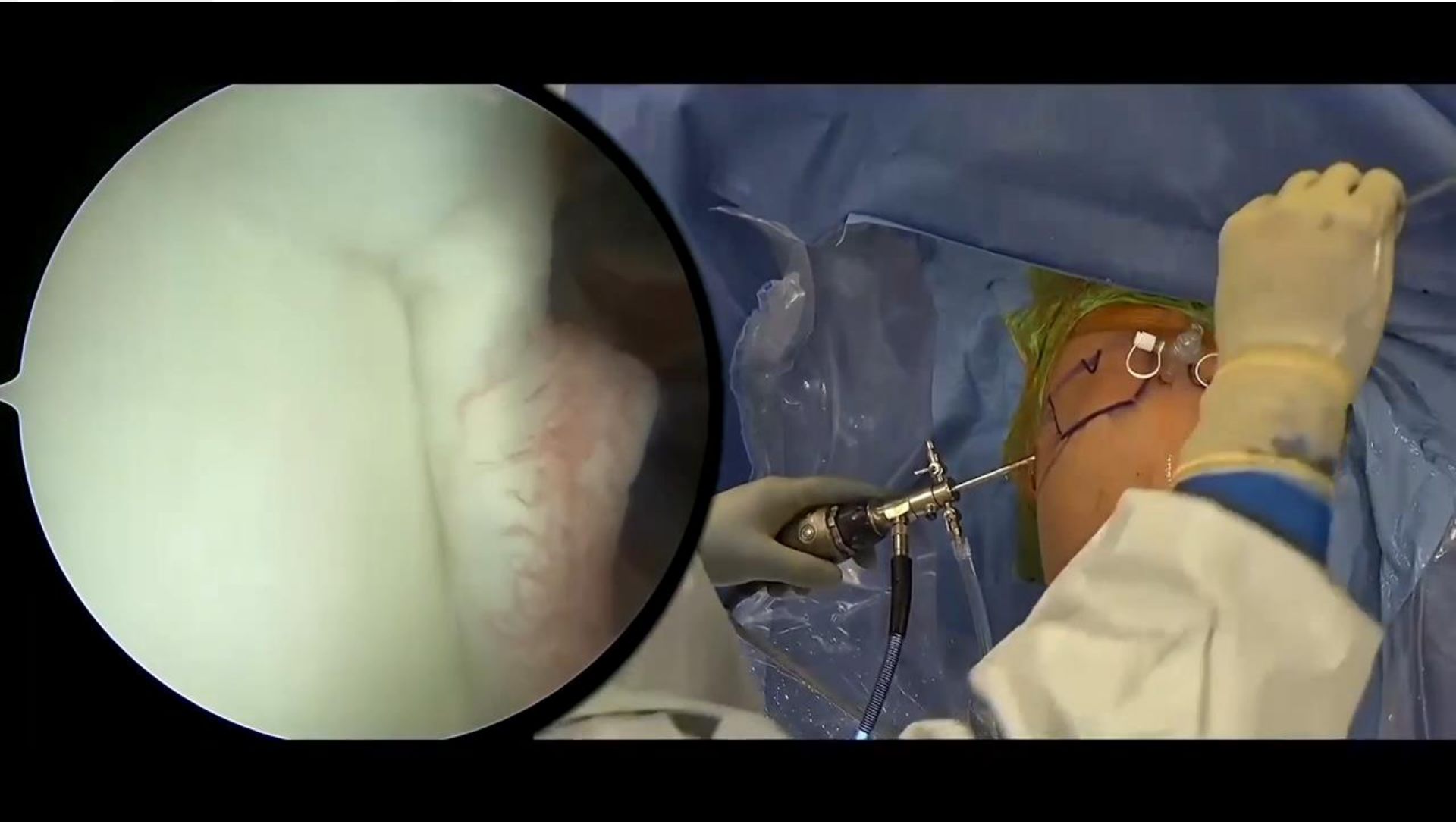
Arthroscopic Portals

- **Anterior Superior Portal**
- **Anterior Inferior Portal**
- **Posterior Portal**
- **Accessory Posterolateral Portal ("7 o'clock")**

- Beach chair vs lateral decubitus



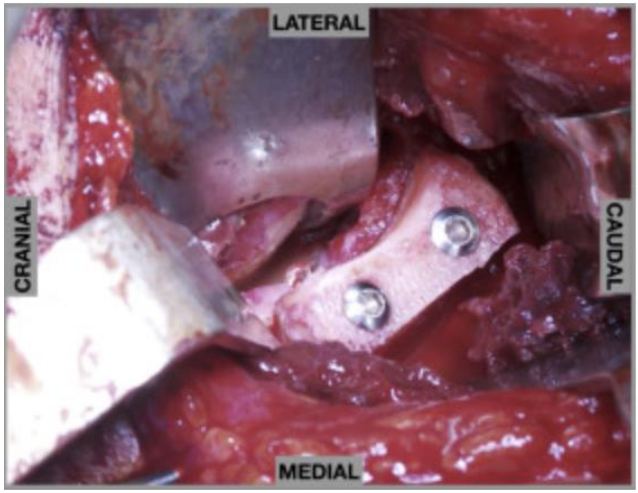
Posterior Labral Repair



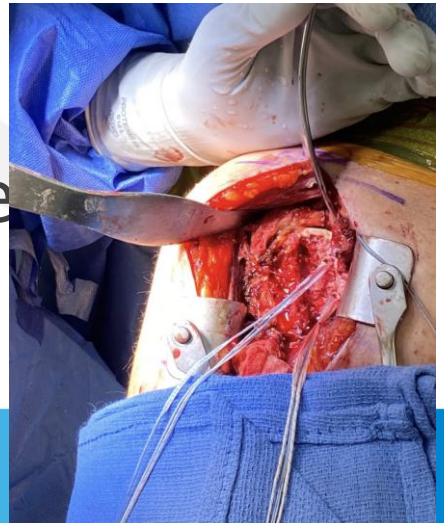
Dr. Peter Millett, Vail, CO. Arth Tech Sept 2022

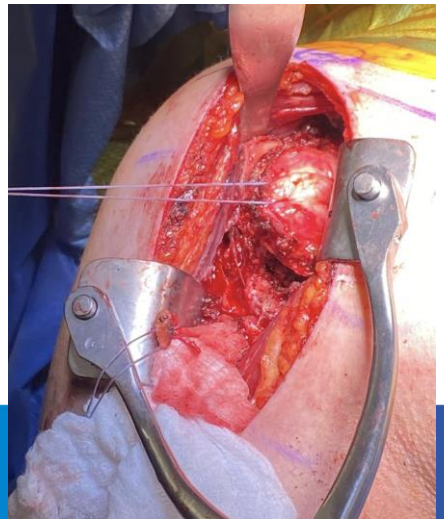
Surgical Options

- Bony Augmentation
  - Apply anterior instability rules
    - 15-20% bone loss
    - Reverse hill sachs > subscap tenodesis



- McLaughlin Lesser Tuberosity Transfer





Outcomes

- DeLong et al, AJSM 2015
  - **Open** (321 shoulders):19% recurrence, 66% RTS
  - Arthroscopic (817 shoulders): 8% recurrence, 92% RTS
- Bradley et al
  - 200 shoulders with avg 36 mo follow-up
  - Suture anchors (156) vs anchor-less (44)
  - 90% return to play
  - 6% failure
  - Higher ASES and RTS with anchors

Outcomes

- McClincy et al, Arthroscopy, 2015
  - 48 Throwers vs 48 non-throwers
  - Arthroscopic posterior capsulolabral reconstruction
  - No difference in ROM, ASES, stability, or strength
  - 60% return to pre-injury level in throwers

Outcomes

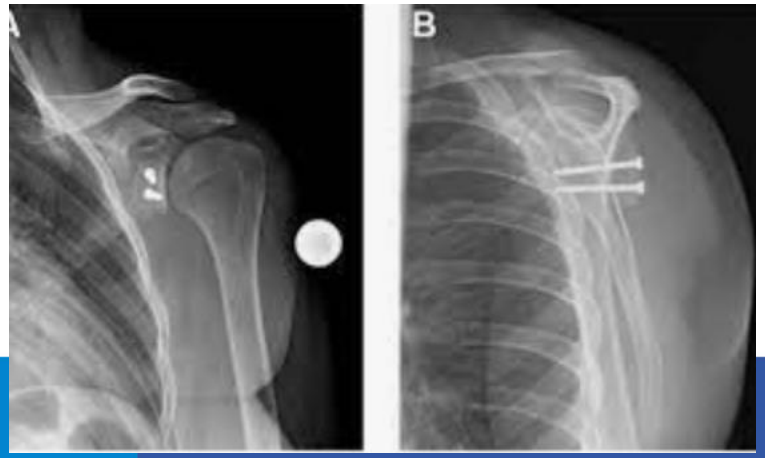
- Arner et al, Arthroscopy, 2015
  - 56 American football players undergoing arthroscopic posterior shoulder stabilization
  - 3.5% failure rate
  - 93% return to sport

Return to Sport After Surgical Management of Posterior Shoulder Instability: A Systematic Review and Meta-analysis

- 32 studies, 1100 patients
- 22.8 yo, 43.2 mo f/u
- 88% return to sport
- 68% return to pre-injury level
- Contact (94%) vs overhead (88%)

Recommendations

- Initial treatment is non-surgical treatment
- If <20% bone loss = arthroscopic stabilization
- If >20% bone loss = consider open vs arthroscopic distal tibial allograft augmentation.



Post op rehab

- Sling for 6 weeks
- Avoid IR when going into flexion
- 6 weeks: begin AROM
- 12 weeks: begin strengthening
- 4-6mo: full return to activities

Questions?

- Thank you

Case Example

Etiology

- Trauma
- Repetitive microtrauma
- MDI
- Voluntary dislocator
- Seizures

Unidirectional Post vs. Post/inf or MDI

- Hard to differentiate
  - History
  - Load/Shift
  - Sulcus
    - Neutral
    - External Rotation
  - Generalized Hyperlaxity
  - Jerk Test
  - Kim Test
  - Circumduction Test