

AOSSM-AANA COMBINED ANNUAL MEETING 2021
INSTRUCTIONAL COURSE LECTURE
4 COMMON PROBLEMS IN OVERHEAD SPORTS:
CASE PRESENTATION

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DISCLOSURE

I (and/or my co-authors) have something to disclose.

Detailed disclosure information is available via:

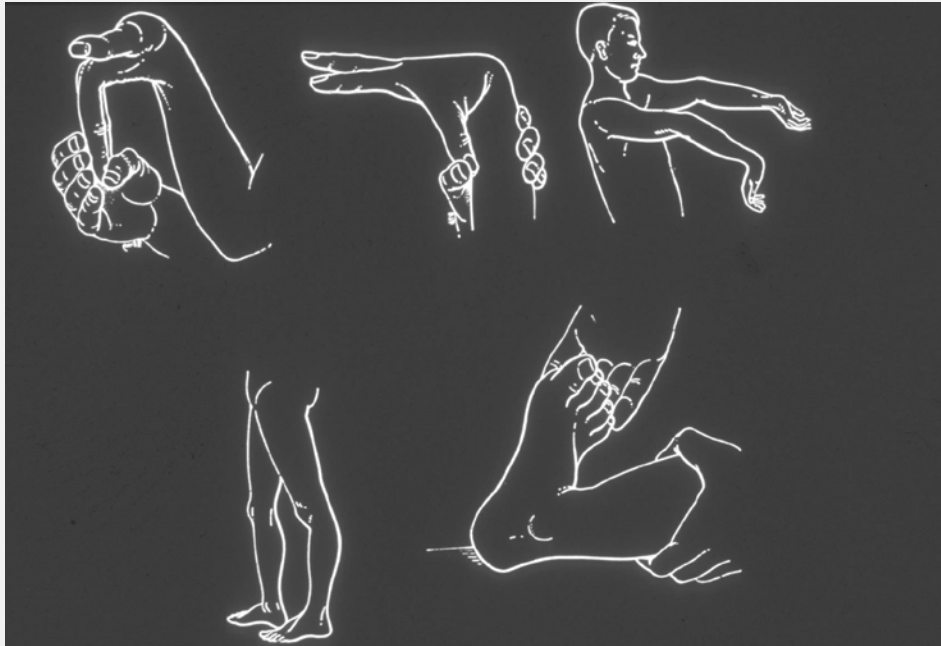
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CASE HISTORY

- 17 y.o. right handed volleyball player with chronic shoulder pain
- Year round competitor/ elite level
- Pain and weakness for > 2 years
- No instability but early fatigue and “dead arm” complaints

PHYSICAL EXAMINATION: WYNNE-DAVIES CRITERIA



- 3 of 5 “positive” (ligamentous laxity established)
- Caution: Laxity is not synonymous with MDI



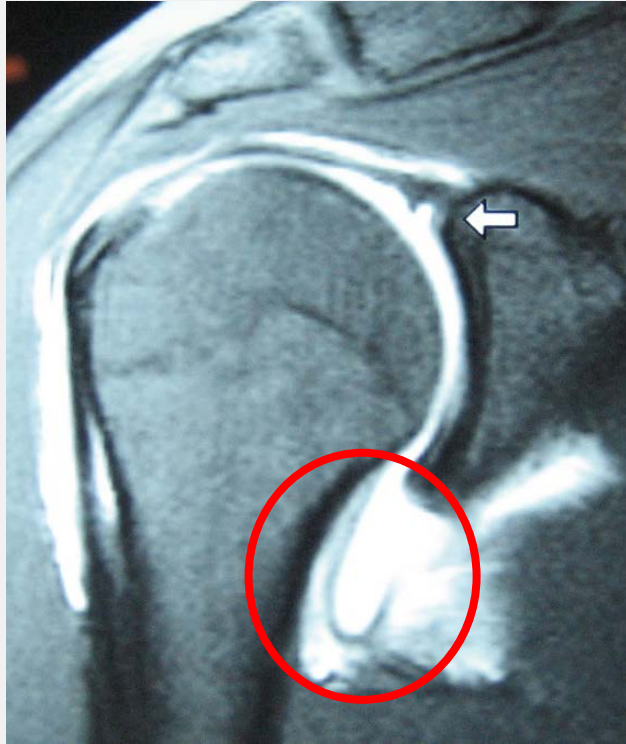
VIDEO: SULCUS SIGN



SCAPULAR ASYNCHRONY/DYSKINESIS



IMAGING



CASE HISTORY

- P.T. to include core, scapular strengthening, RC with limited benefit
- Steroid injection with limited benefit
- Cannot compete despite prolonged rest

TABLE DISCUSSION: TREATMENT ALTERNATIVES

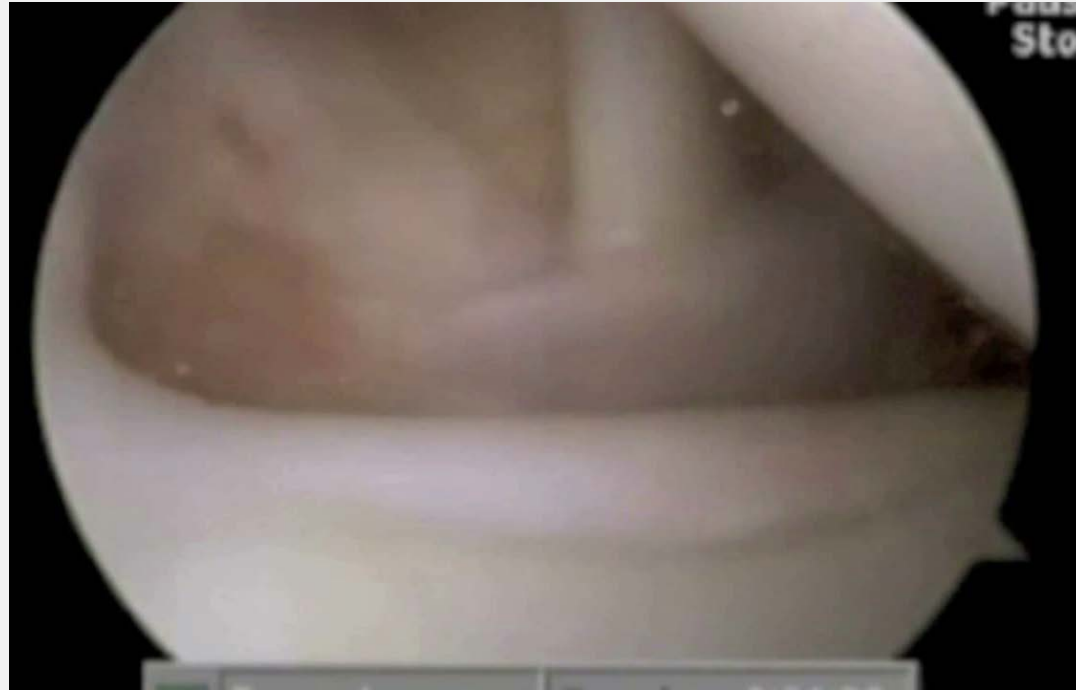
- 1. Continued conservative treatment
- 2. Open capsular shift
- 3. Arthroscopic capsular shift
- 4. Limited thermal
- 5. Prolotherapy
- 6. Pacemaker

**CASE HISTORY:
TREATMENT**

CASE HISTORY SUMMARIZED

- 17 y.o. volleyball player with 2 year history of shoulder pain and dysfunction recalcitrant to conservative measures
- Ligamentous laxity findings
- Scapular dyskinesis
- Capacious capsule on MR arthrogram

VIDEO: SURGICAL TECHNIQUE



Right Shoulder

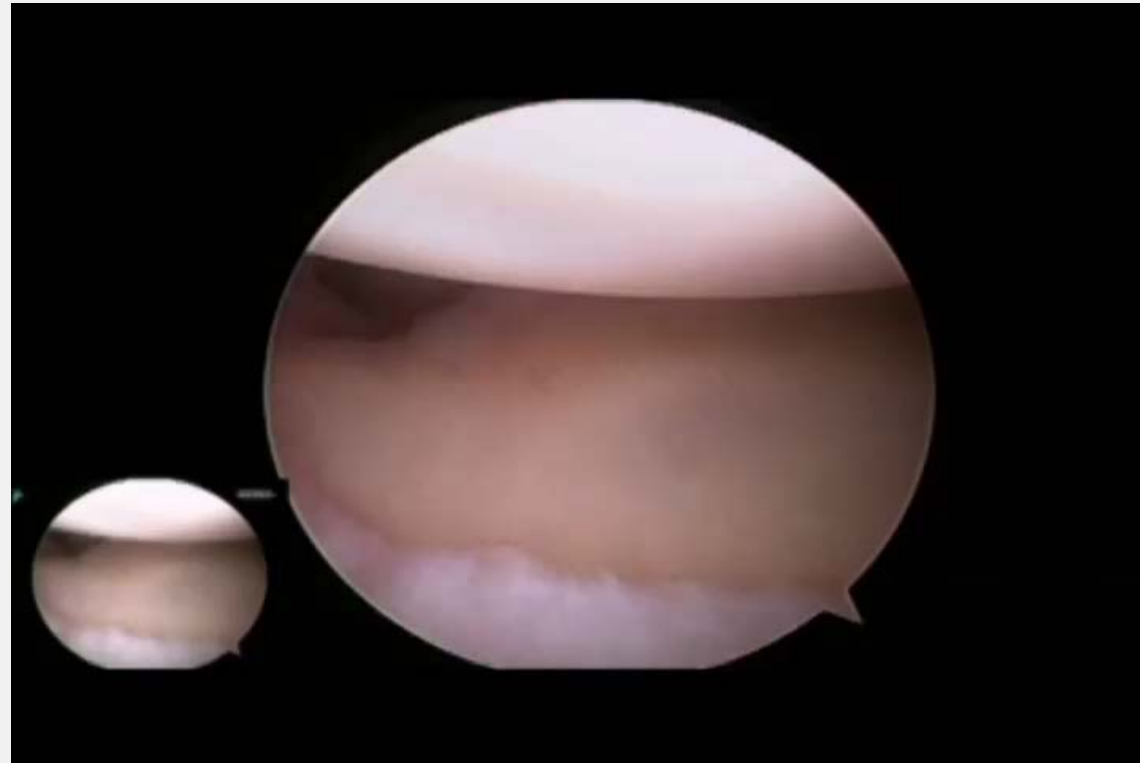
QUESTIONS TO BE ANSWERED

- 1. How long should conservative measures be attempted?
- 2. Open versus arthroscopic and how to choose?
- 3. Can overhead athletes expect a return to competition?
- 4. Rehabilitation protocols and safe return to sport
- 5. Technical pearls

SYMPTOMATIC MDI

- When does laxity become a problem?
- Progressive tissue compromise
- Compensating mechanisms overwhelmed:
 - Core
 - Scapula
 - Proprioception
 - Strength

VIDEO: CAPSULAR INFLAMMATION



TREATMENT GOALS IN MDI

- What is the end goal of treatment:
 - Restore balance
 - Proprioception, core and scapular dynamics balance the ligamentous laxity and maintain an asymptomatic status
 - If surgical, surgery itself does not permanently shorten ligaments
 - Surgery provides “enough” stability so that the other dynamic stabilizers can restore function

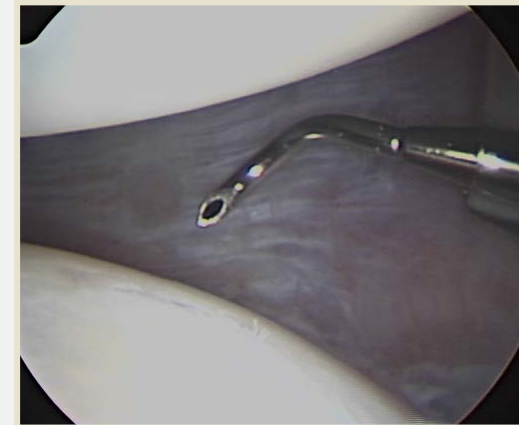
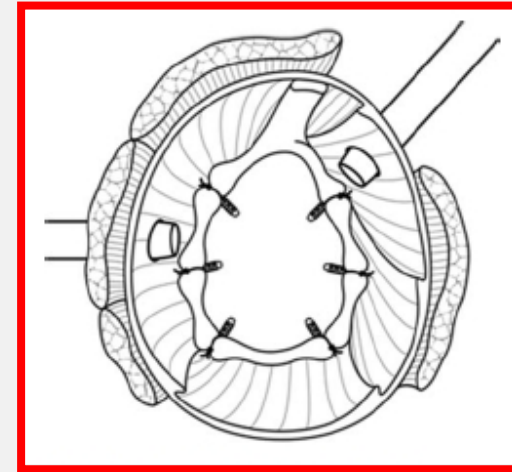
WHAT IS THE NATURAL HISTORY?

- Misamore et al JSES 2005
 - 57 pts
 - ave. age 18 yrs
 - Ave f/u 8 years:
 - 70% underwent surgery or had fair or poor ratings
 - Patients who improved with PT did so within 3 months

IF CONSERVATIVE MEASURES FAIL, IS SURGICAL
STABILIZATION EFFECTIVE?

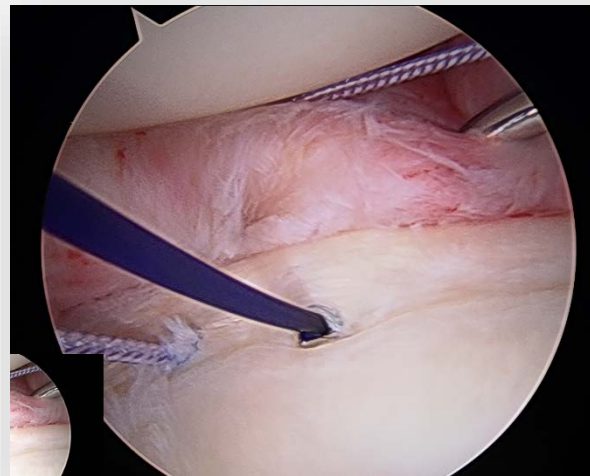
ARTHROSCOPIC CAPSULAR PPLICATION

- Ponce et al AJSM 2011
- Single 1 cm plication stitch = 10% volume reduction
- 5 plication sutures = 50% volume reduction



LABRUM VERSUS ANCHOR?

- Provencher et al AJSM 2008
 - intact labrum versus anchor fixation →
No difference in ultimate load to failure
 - If labral quality questionable, use anchors



WHAT DOES THE LITERATURE REVEAL?

- Literature is sparse and of lesser quality
- Bankart superimposed on MDI-type findings more likely
- Caution:
 - If paper indicates majority of patients with Bankart lesion → this is not an MDI population
 - Majority of true, symptomatic MDI patients have little labral detachment
 - If so, usually very late, chronic stages

OPEN VS ARTHROSCOPIC?

LONGO ET AL ARTHROSCOPY 2015 SYSTEMATIC REVIEW

- Open, arthroscopic, thermal stabilization
- Level IV
- Overall recurrence rate 10%
 - Open 7.5%
 - Arthroscopic 7.8%
 - Thermal 24.5%
- 21% of those undergoing PT required surgery

ARTHROSCOPIC RESULTS IN ATHLETES?

BAKER ET AL AJSM 2009:
SURGICAL STABILIZATION

- 40 athletes
- Mean f/u 33 months
- Ave age 19 y.o.
- ASES 91; WOSI 91
- 86% back to sport with little or no limitations

ARTHROSCOPIC RESULTS IN ATHLETES?
JONES ET AL AJSM 2012:
SURGICAL STABILIZATION

- Anterior capsular plication for microtraumatic anterior shoulder instability in athletes
- 20 overhead athletes; ave f/u 3.5 years; ave age 19 y.o.
- No labral detachments
- 18 of 20 returned to sports; 17 at same pre-op level (85%)
- If associated cuff injury, success rate lower

ARTHROSCOPIC RESULTS IN ATHLETES? RAYNOR ET AL AJSM 2016

- 41 pts with 45 shoulder
- Arthroscopic plication with anchors
- 22 atraumatic onset; 23 with traumatic
- Traumatic onset with better outcomes
- Females with greater recurrent subluxation risk
- Return to sport: 77%

MOST RECENT FINDINGS:
WITNEY-LAGEN ET AL JSES 2017

- 50 consecutive pts who failed 6 mo PT
- Arthroscopic capsular plication
- 95% excellent or good
- 100% returned to work
- 90% returned to sports

POST-OPERATIVE REHABILITATION

- Scapular stabilization / core strengthening
- ROM (90% at 3-4 mo) unless throwing athlete
- Strengthening at 8-10 weeks
- RT sports: individualized based on sport and PT progress
 - Range 6-12 months
- Overall goal: restore proprioception, core strength, scapular control

TECHNICAL PEARLS

- Treat inferior capsule first; all MDI with inferior component
- Use non-absorbable suture for inferior capsular plication; can use absorbable for anterior and posterior
- Horizontal mattress suture to create additional labral height
- Avoid sliding knots → tissue abrasion with already compromised status
- End point → reduce drive through sign by at least 50%-75%
- Is interval closure helpful? → depends on technique

CONCLUSIONS

- Arthroscopic capsular plication equally effective as open shift in reducing capsular volume
- Surgery goal: restore enough stability for compensatory mechanisms to be effective
- Surgical stabilization for MDI has been successful although return to the elite level sports remains questionable
- Literature is confusing at best

THANK YOU

