

Christopher A Brown, MD

Sports Medicine Orthopedist



- Duke Orthopedic Residency
- Sports Medicine Fellowship Stanford



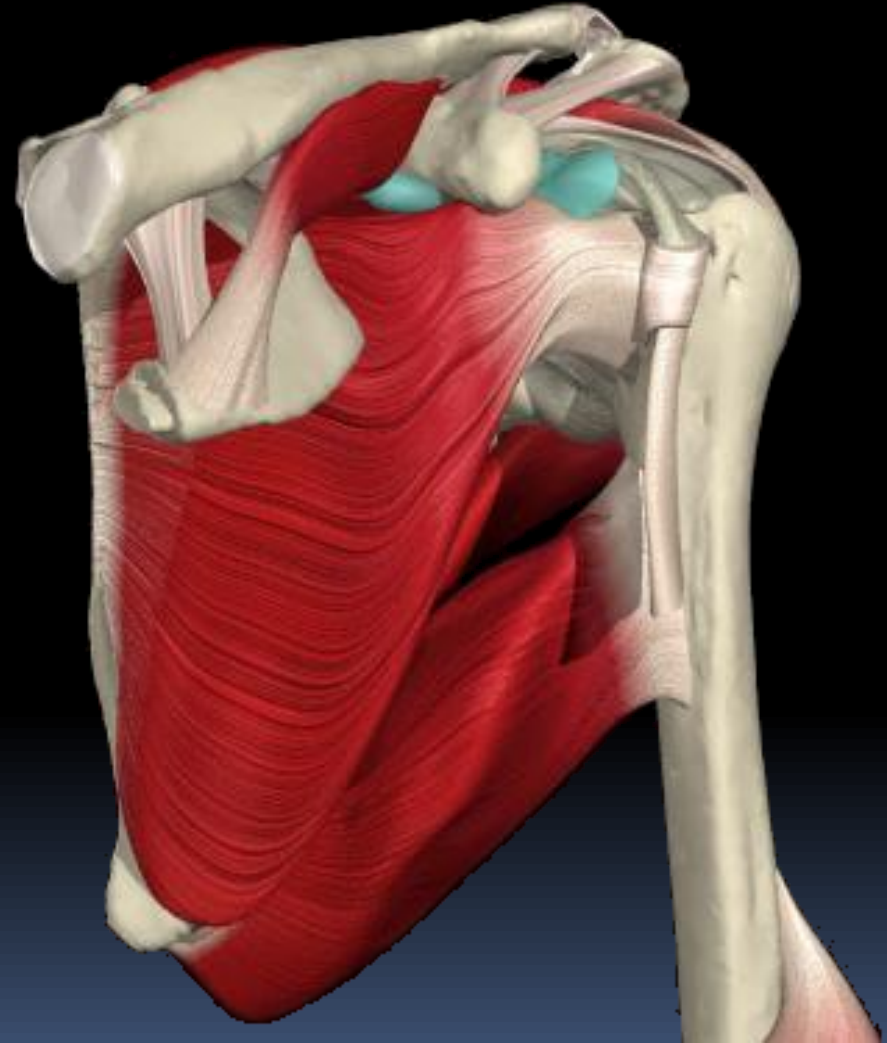
FINGER LAKES
BONE & JOINT
C • E • N • T • E • R



- Office
 - Geneva
 - Newark
 - Opening Canandaigua and Penfield

Topics Of Discussion

- Shoulder dislocation
 - Traumatic 1st athlete
- SLAP
 - Young and old
- AC joint
- Rotator cuff



No disclosures

Primary Traumatic Dislocation

- Incidence instability
high demand
population 2.9%
 - 80% anterior
- Mechanism

Primary Traumatic Dislocation

- Recurrence Highly dependent AGE #1

- Contact sports
- Hyperlaxity
- Bone loss

ANTERIOR

POSTERIOR

- General Consensus

- < 20 yr 66-97%
- 20-30 yr 56-64%
- >40 yr 0-14%

Primary Traumatic Dislocation

- Long term risk “arthropathy”

Rate Moderate/Severe Arthropathy	
Multiple Recurrence	40%
No Recurrence	18%

Primary Traumatic Dislocation

Evaluation and Management

- Several advances
 - Imaging
 - Arthroscopy
 - Surgical techniques
- Functional outcomes scores are good after surgery failure <5%



Rationale for surgical stabilization in
Young active patient w/ a traumatic 1st
dislocation can be strongly made.

- High recurrence
- Compromise athletic performance
- Long term risk arthropathy

A trial of non operative therapy is often done

- There are still patients who do not have recurrence or modify their activities
- No consistent way currently to predict who will have recurrence



“Individualization”

- Understanding “WHO” a patient is.
- What his/her goals are
- What resources athlete has to reach those goals



7 question I ask patient

- 1. Who is the patient?
 - College athlete
 - Manual laborer
 - Office worker
 - Rock climber
- Time course, return to work, and amount of time that can be devoted to rehabilitation will vary.
- Can Recurrence be life threatening?



7 question I ask patient

- 2. "Present vs. future"?
- High school or College athlete in his junior year looking in the future may differ from a "weekend warrior"



7 question I ask patient

- 3. What does “successful return” mean this patient?
- Office worker vs linebacker will have different answers.



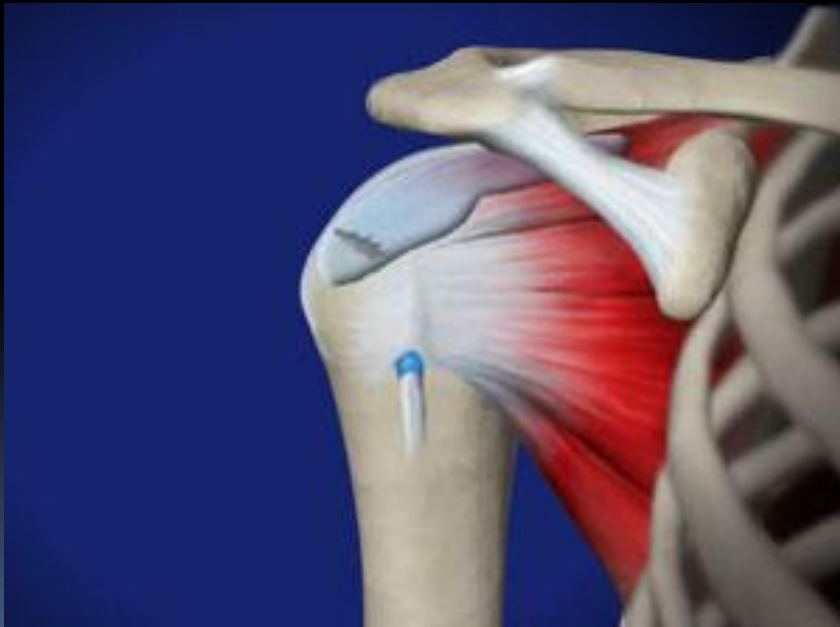
7 question I ask patient

- 4. Is this the dominant or nondominant shoulder?
- Sometimes this can affect the balance between stability and mobility



7 question I ask patient

- 5. What is the surgical plan?
 - Primary vs revision
 - Open vs arthroscopic
 - Bone loss
- All can impact rehabilitation program



7 question I ask patient

- 6. What is the patient's postoperative resource and compliance?
- Elite athlete with daily access to training staff is different that a managed care patient with limited visits.



7 question I ask patient

- 7. How is progress monitored, and how are problems communicated?
- Individualization requires adaptation through the healing process



Stable shoulder ≠ functional one

- Requires a team approach
 - Patient
 - Parents
 - Surgeon
 - Trainer
 - Therapist
 - Coach



- Limited amount of actual contact when compared to the rehabilitation specialist.
- We tend not to understand the intricacies
 - Manual therapy
 - Strengthening
 - Protective neuromuscular facilitation

Communication and teamwork are key.



Protective Mobilization

- Critical to successful rehabilitation
- Balance of protecting static restraints repaired but not “overprotect”
 - A stiff atrophic unresponsive shoulder has a worse prognosis than when the athlete dislocated



Keys to a successful rehabilitation program

- Individualization
- Protective mobilization
- Team communication



Dislocation Athletic Season “1st time traumatic”

- MRI-co-exsisting injuries
- Early PT with in sport bracing



Dislocation Athletic Season “1st time traumatic”

- RTP avg 2 weeks
 - Full ROM, strength, ability to protect
- If come out again fix
- Consider repair at end of season



Case 1 360 Labral tear

- High school Football athlete
- Dislocated in sectionals
- Also plays baseball



Case 1 360 Labral tear

Post op

- Brace 4 wks
- Sleep 6wks
- ROM 1st 6 weeks no biceps strengthening
- 3 mon initiate “Throwers 10 program”
- 4 mon interval throwing
- 5-6 mon RTP



Case 2 SLAP and Bankart

- Personal trainer
8 yrs of shoulder
pain and
instability
- Sling 4 weeks

Return to Activity Guidelines

Computer / Typing	2 weeks
Golf	8 weeks (chip and putt) 4-5 months (full swing)
Tennis	10-12 weeks (no overhead until 4 months)
Contact sports	4-6 months

Bankart Protocol

Week 2-4

Passive Range of Motion:

Supine PROM Forward Flexion as tolerated to 180

External Rotation RESTRICTED TO NEUTRAL

Internal Rotation to Beltline

Abduction RESTRICTED TO 45

Gentle Isometric exercises in all planes with neutral intern

Week 4-6

AAROM forward flexion to 180

PROM External Rotation to 30, abduction to 60 deg

No combined ABD/ER

Internal Rotation to full

Start Aquatherapy

Week 6

Full Rehab as Tolerated

Resistance Exercises

Cuff and scapula strengthening

External and Internal Rotation

Standing Forward Punch

Seated Rows

Shoulder Shrugs

Biceps Curls

Bear Hugs

Start elliptical and light jogging

Weight Training Activity (week 10 and beyond)

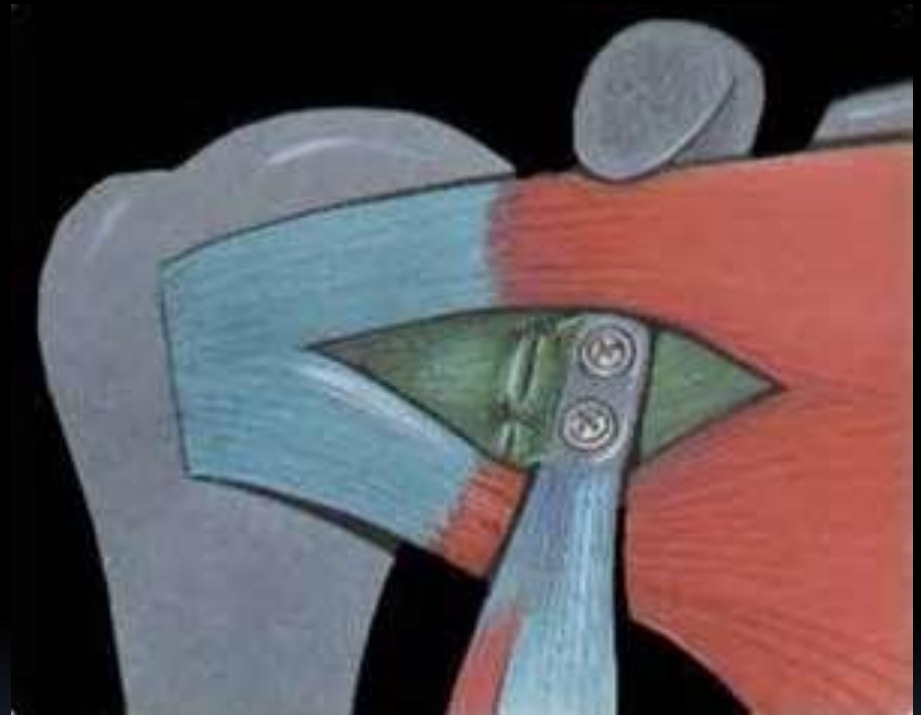
Keep hands within eyesight, keep elbows bent

Minimize overhead activity

(avoid military press, lat pull-down behind head, wide grip bench-press)

LatarJet Procedure

- 1st described 1954
- Recurrent instability
 - Failed Arthroscopic
 - Bone Loss
 - 5% recurrence w/o bone loss vs up to 70%¹
 - Engaging hills sacs



Latarjet “How it works”

- 1) Replace bone loss
- 2) Restores articular arc (hills sacs)
- 3) Conjoined tendon
 - Tether and a sling across the ant inferior capsule

“Engaging Hill sacs”

- Posterior lateral humeral defect can that lead to continued instability and failed arthroscopic repair

Case 3: Latarjet Procedure

- 18 year old
 - Multiple dislocations
 - Prior failed anterior stabilization
 - Bone loss

Post-op

- Sling 4 weeks
 - PROM below SHOULDER
- 4- 6 weeks
 - AA to AROM above shoulder
- 6 weeks
 - ROM and joint control
- 8-12 weeks
 - Strengthening

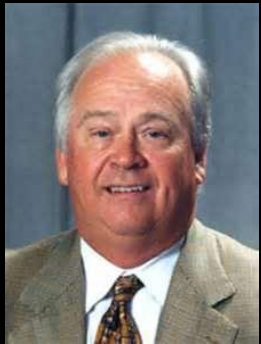
- RTP 4-5 months

PROTECT SUBSCAP AND
DEVELOPING BONEY UNION
“CONJOIN TENDON”



SLAP: Historical Perspective

- Andrews – 1985
 - Identified the superior labrum and biceps tendon complex to be a possible source of pain and dysfunction



- Snyder – 1990
 - Coined the term *SLAP*
 - Described lesion as beginning posteriorly and extending anteriorly



SLAP

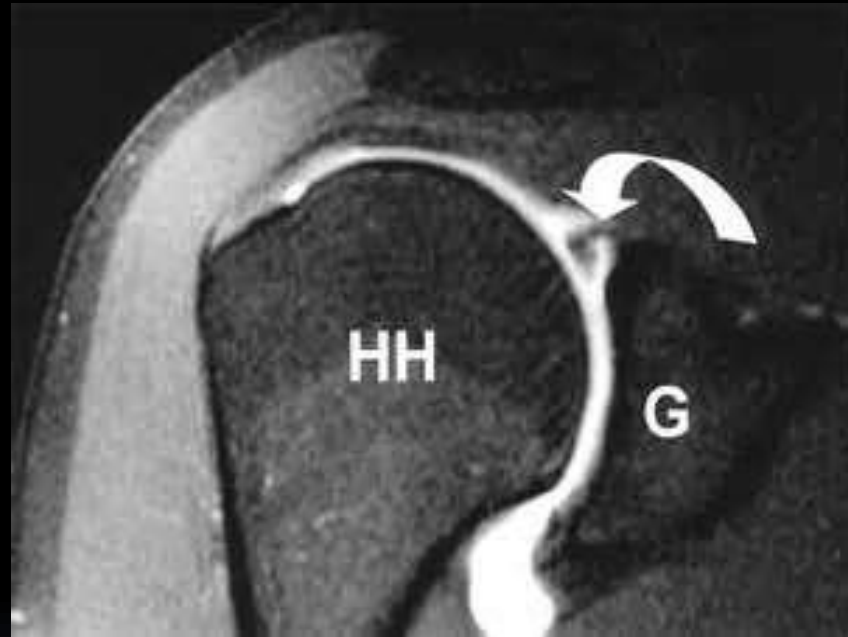
- Most common symptoms:
 - Pain with overhead activity
 - Mechanical catching, popping, or grinding

- Mimic multiple pathologies
 - AC joint pain
 - bicipital tendon pathology
 - glenohumeral instability



What we know SLAP

- Biomechanical role
- Successful repair in young athletes
 - Still problematic overhead athletes
- Older you get success of repair decreases
 - Worse when done with cuffs



SLAP in Older patient

- Patient's >40
- Failed SLAP
- Preserves biceps function
 - Supination
 - No "popeye"/cramping
- Eliminates groove systems
- **MINI SUBPEC BICEPS TENODESIS**

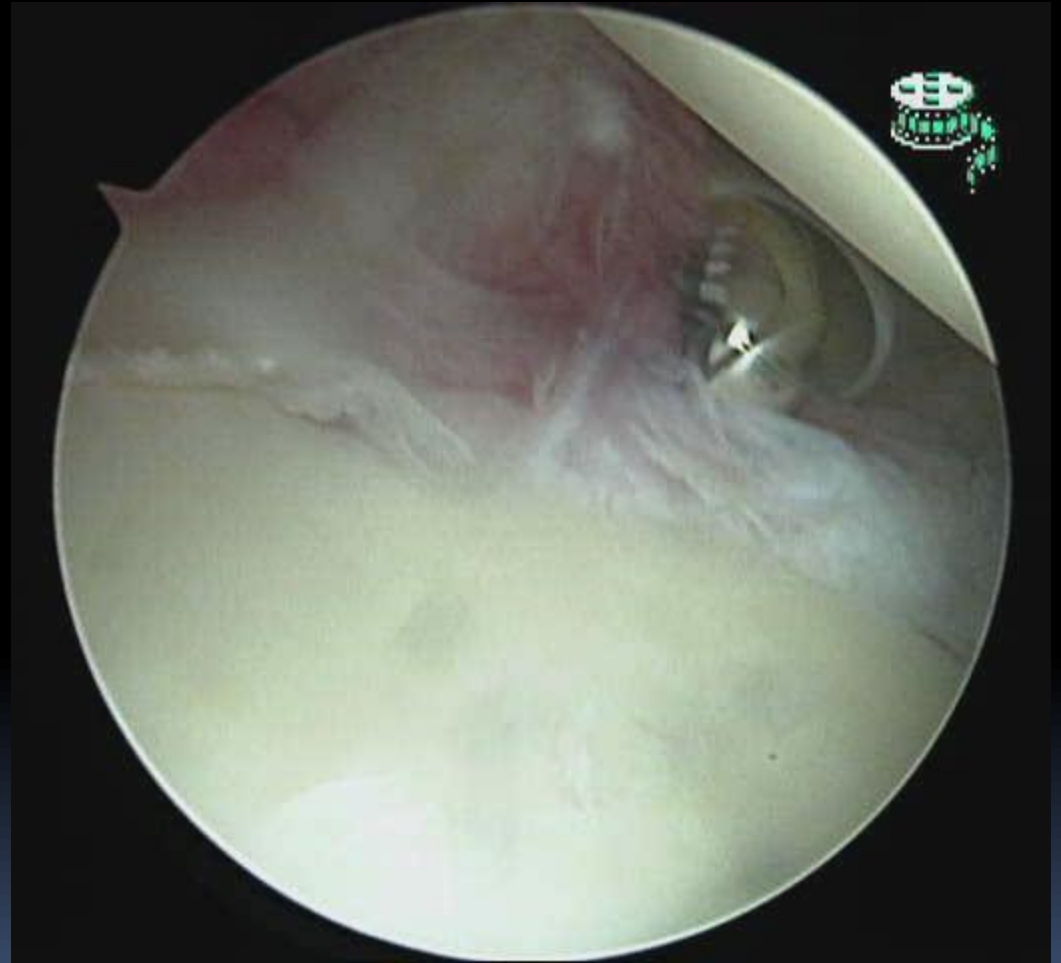
Biceps Tenodesis

- Sling 3 weeks
- Week 1-4
 - Passive ROM elbow/Shoulder
- Week 5-6
 - Start active assist to AROM
- Week 7-9
strengthening phase
- RTP 3 months

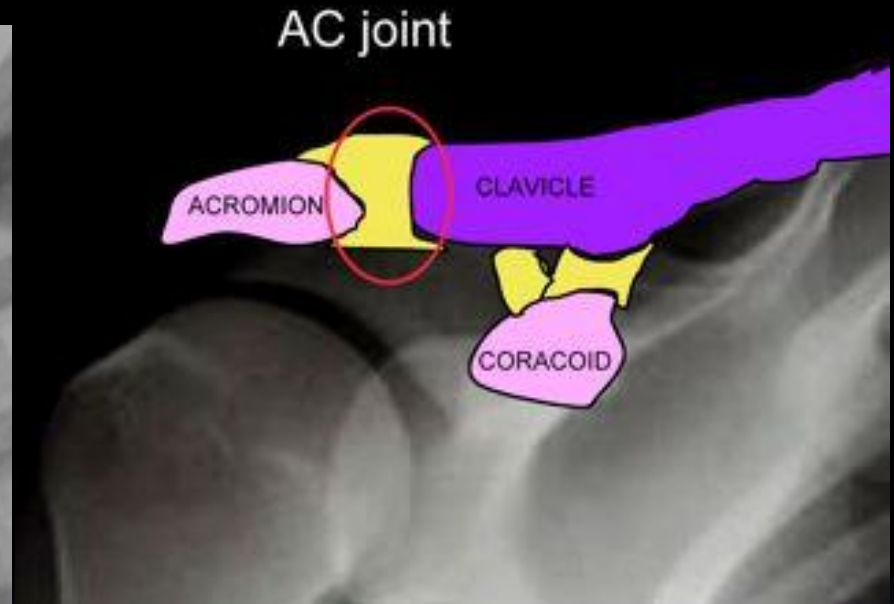
WHY I wait 6 weeks

Case 3: Body Builder

- 48 body builder
- Torn
 - SLAP
 - Subscap
 - Supra



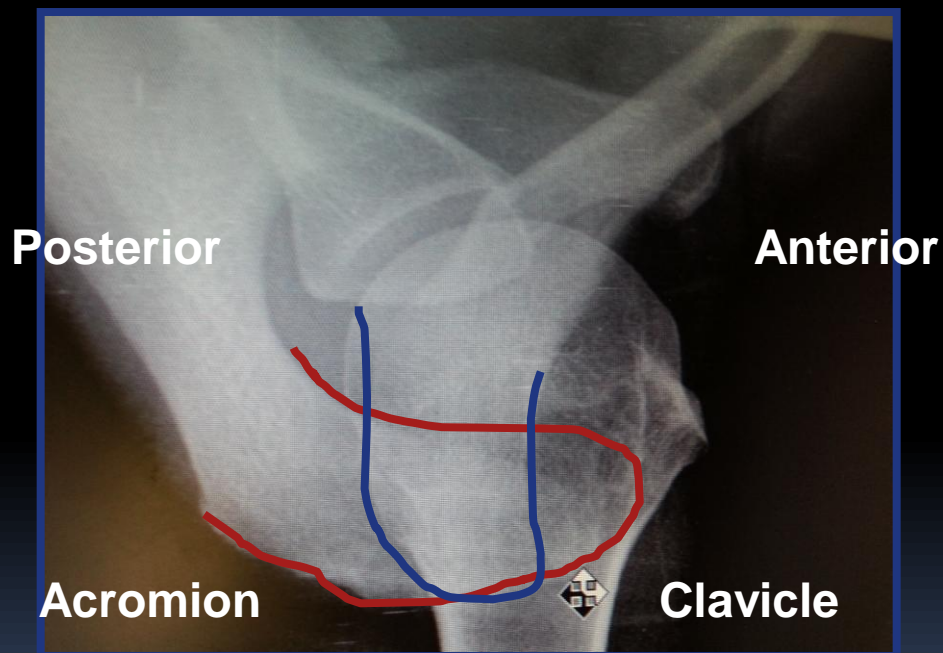
The Other “Shoulder Separation” AC Joint



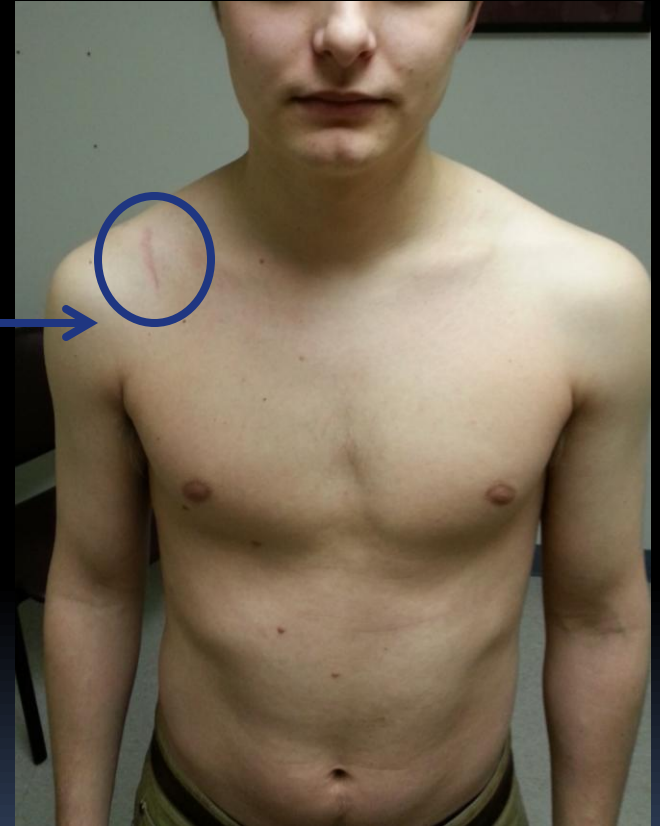
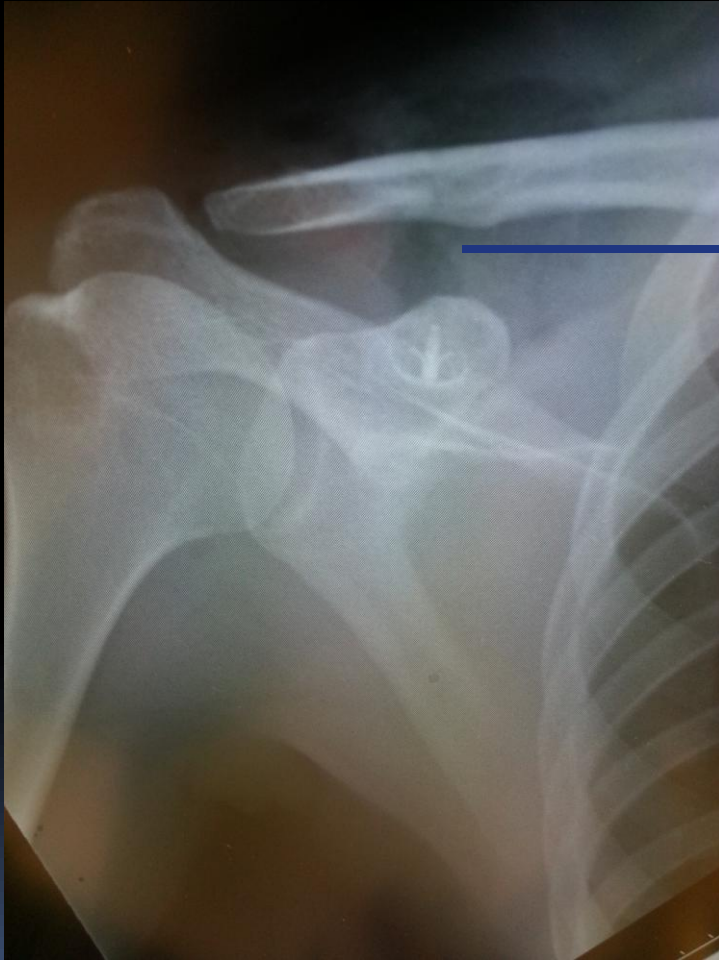
AC joint dislocation:

- I/II back when comfortable with pad
- III: week out then back when no strength deficit/full ROM.
 - If not in season consider fixing if dominant arm in throwing athlete or is still sx's with relocation or cross body by 6-8 weeks
- V: discuss with athlete, fix in season if throwing athlete, otherwise could consider fix post season.
 - Better results if acute though.

3-D Deformity



3 months Post op



- Sling 6 weeks ok after 3 to remove with hands within eyesight
- RTP recreational 4 contact 5 months

Week 4-6

Range of Motion to Full

Week 6-8

Resistance Exercises

External and Internal Rotation neutral position

Standing Forward Punch

Seated Rows

Shoulder Shrugs

Biceps Curls

Bear Hugs

Weight Training Activity (week 8 and beyond)

Avoid Anterior Capsular stress

Keep hands within eyesight, keep elbows bent

Minimize overhead activity

(avoid military press, lat pull-down behind head, wide grip bench-press)

Flexion and abduction strengthening should be below 90 until after 3 months

Rotator Cuff

- High prevalence in older patients
 - Asymptomatic MRI 54% > 60 years¹
- Natural history not transparent²
 - 51% become symptomatic
 - 39% progress

<http://www.youtube.com/watch?v=i5vXk6u18dc>

Pathogenesis:

- Intrinsic (codman 1934)
 - Extrinsic (Neer 1972)
 - Traumatic
- * Evidence suggests both extrinsic & intrinsic play role



Presentation

Pain:

- Predominant symptom
- Troubling at night
- Overhead activity

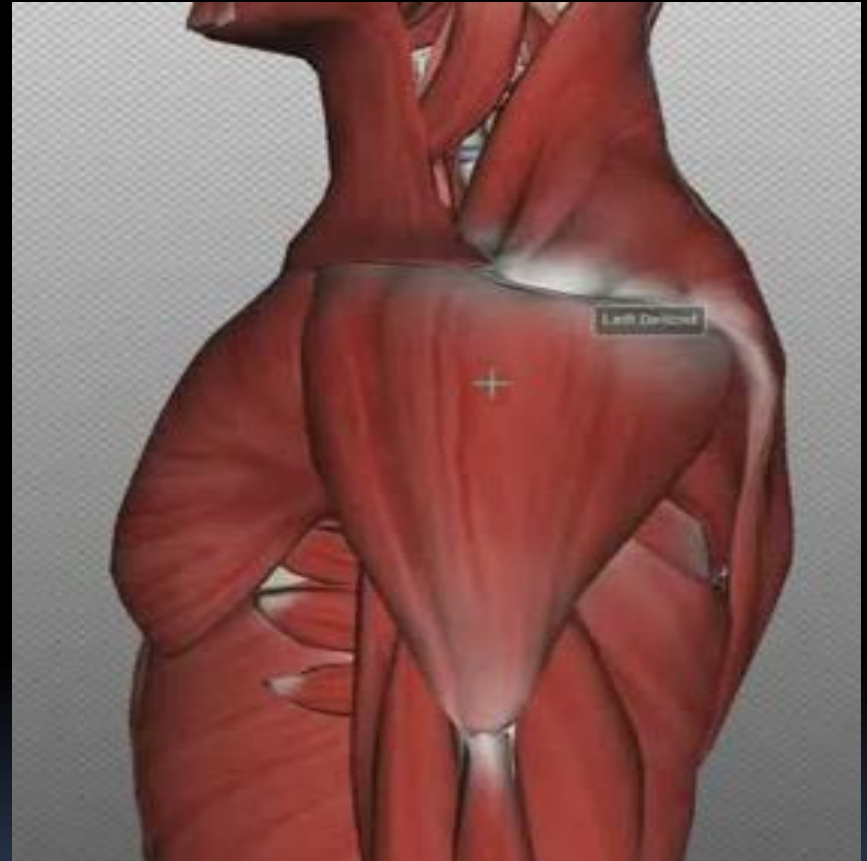
Stiffness:

- Painful, limited arc of motion
- Impingement signs



Repair results

- Re tear rate on MRI 20-39%
- Most outcome scores significant improvement 1yr
- Deteriorate with time
 - Intact do better



Treatment Challenges

- Size of Rotator Cuff Tear
 - Number of Tendons Involved
 - Delamination of Tendons
 - Fat Infiltration
- Chronicity of Rotator Cuff Tear
 - Degree of Tendinous Retraction
 - Quality of Tendons (vascularity)

Lack of understanding

- What factors predict successful non-op tx?
- Does converting a asymptomatic state allow progression of the tear over time?
- Is there an optimal interval during the natural history to repair full thickness tear?
- What factors are associated with repair failure?

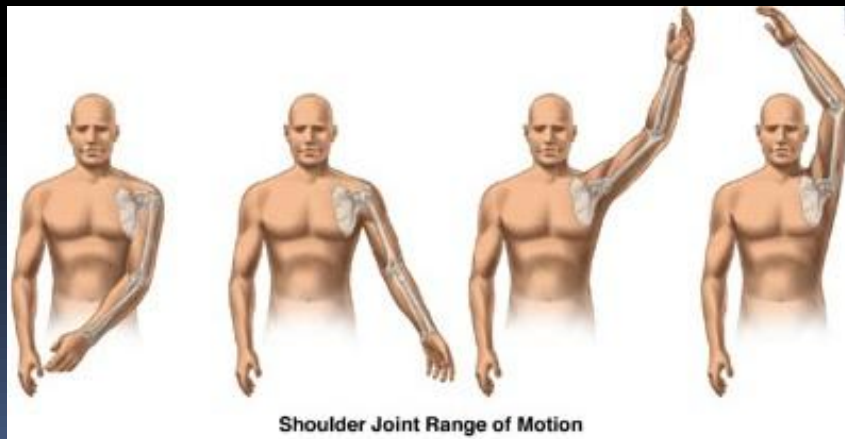
Non-operative

Initially:

- Rest
- Activity modifications
- NSAIDs

Physical therapy:

- Range of motion
 - (regain lost motion from inflammation contractures)
- Strengthening RTC/periscapular
 - (after motion regained)

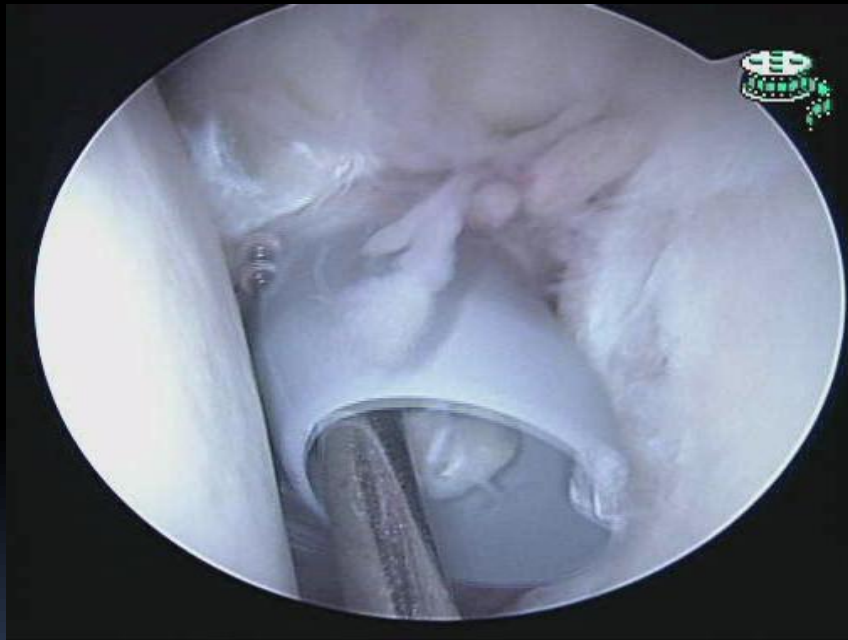


Operative

Indications:

- Symptoms of sufficient duration and intensity
- No improvement w/ conservative tx
- Specific goals/expectations of pt



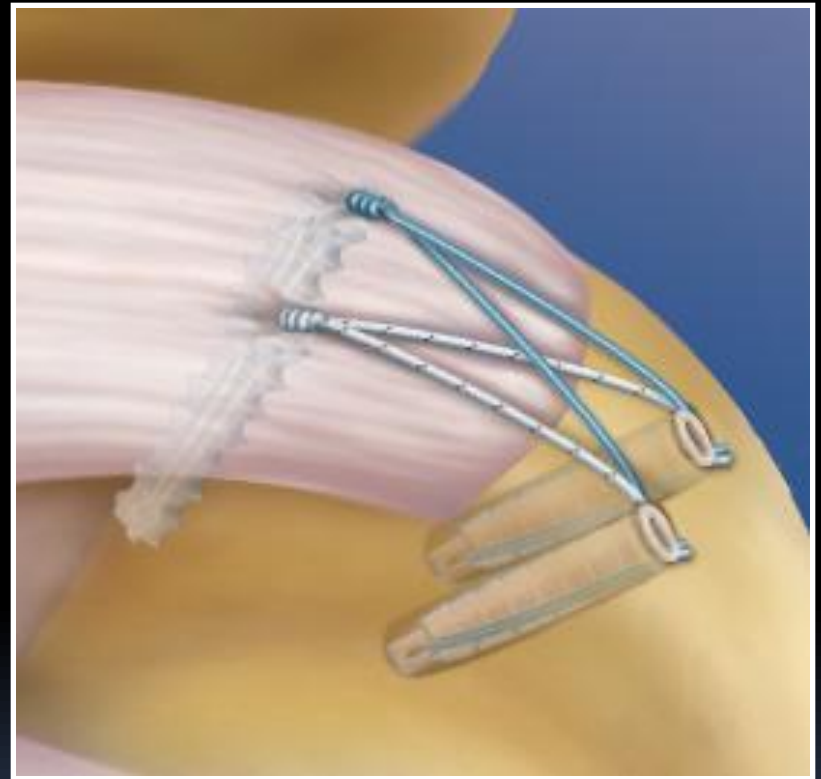


Decisions:

- Debridement of tear
 - w/wout acromioplasty
- Mini-open or arthroscopic repair
 - w/wout acromioplasty

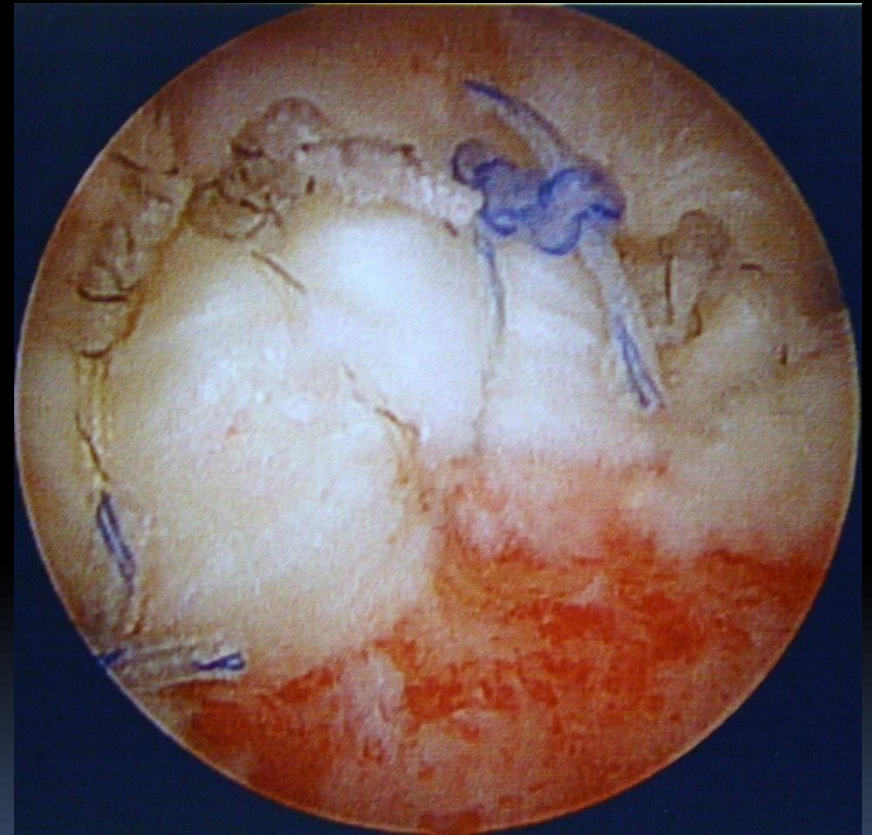
Double Row Technique

- Suture Bridge
- Advantages
 - Larger recreation of the footprint
 - Strength of fixation
- Disadvantages
 - Tension on the Cuff
 - Medial Row Failure



Single Row

- Advantages
 - Medialization
 - Less Tension on Repair
- Disadvantages
 - Footprint Reconstitution
 - Strength of Fixation



Option for Cuff Arthropathy

- Reverse Shoulder arthroplasty
- Indications
 - Psuedoparalysis
 - Cuff arthropathy

