Shoulder Pain:
Diagnosis and Management

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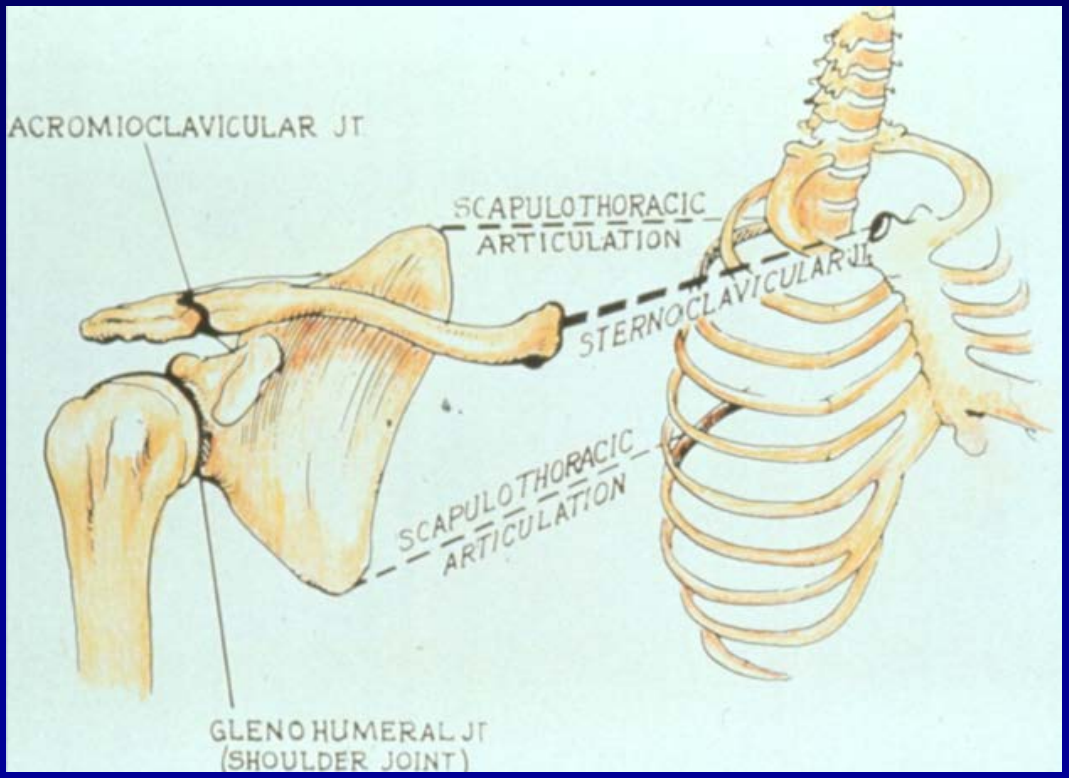
NWH

The “Shoulder”

- Sternoclavicular joint
- Acromioclavicular joint
- Scapulothoracic joint
- Glenohumeral joint



History

- Key points - age, chief complaint
- Young - instability, A-C, acute injuries
- Old - rotator cuff, arthritis
- Mechanism
- Chronicity
- Associated sx's
- Referred pain

History

- Instability - injury in ABD / ER
- A-C Joint - direct blow
- Rotator cuff - pain at night; overhead

Physical Examination

- Must be undressed
- Observation
  - walking into room
  - taking off shirt
  - ROM
  - asymmetry
  - atrophy
  - skin
  - “popeye”
  - winging

- Palpation
  - based on knowledge of anatomy
  - S-C, clavicle, A-C, acromion, greater tuberosity, biceps groove
- Motion
  - active / passive FF (150-180), ER (30-60), ERA (70-90), IR (T4-T8)
- Strength
  - supraspinatus
  - ER,
  - O’Brien’s

Neurovascular Testing

Sensory

- C5 - lateral arm
- C6 - thumb
- C7 - middle finger
- C8 - small finger
- T1 - medial arm

Reflex

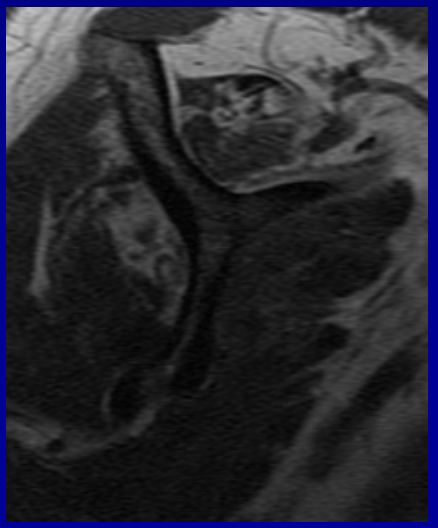
- C5 - biceps
- C6 - brachioradialis
- C7 - triceps

Pulses

- Adson/Wright, Roos tests

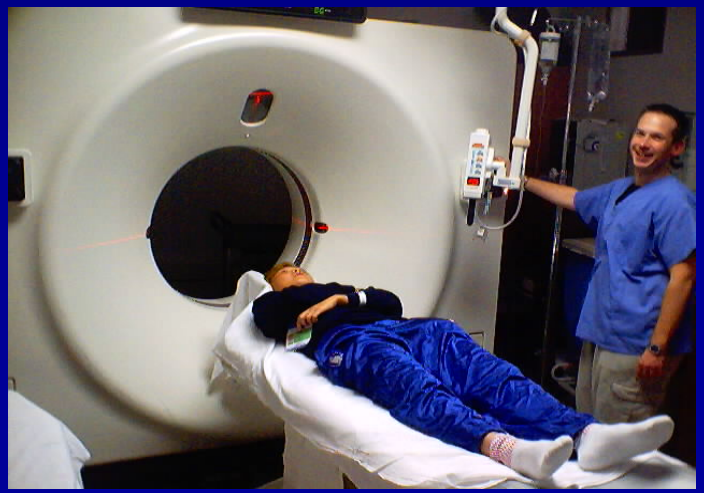
Radiographic Studies

- True AP
- Axillary
- Trans-scapular Y
- CT
- U/S
- MRI
- Arthrograms



Case #1

- 45 y.o construction worker
- fell from scaffold 4 weeks ago
- pain over superior/posterior shoulder
- not getting better despite NSAID's, P.T.



Rule out Referred Pain

- Herniated cervical disc
- Cervical stenosis
- “Burners” / “Stingers”
- Cervical strain

- Remote etiologies - Phrenic nerve irritation
  - » e.g. diaphragmatic abscess, pancoast tumor

Cervical Strain

- Hx: "My neck hurts"
- No radicular / arm symptoms
- PE: Tender paraspinal muscles
- No provocative neurologic tests

Cervical Strain

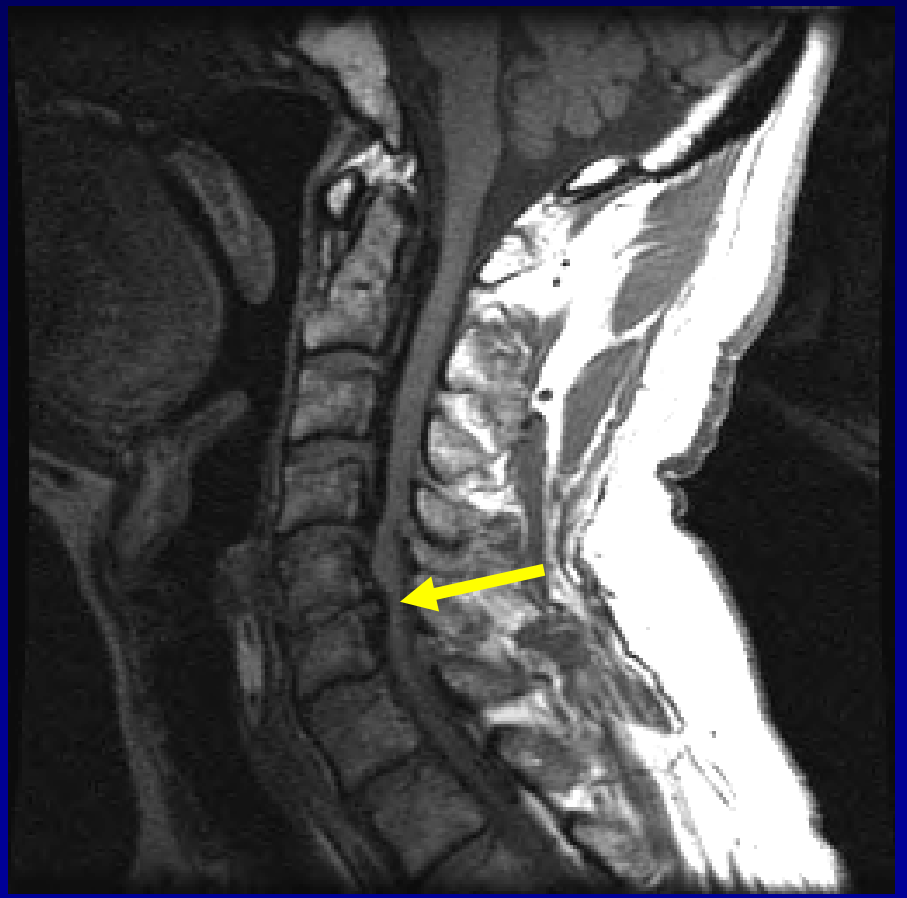
- X-ray: depends on history
- Loss of cervical lordosis
- Rx: heat, massage, strengthening, NSAID's
- ? Collar acutely

“Whiplash”

- Cervical strain
- Typically MVA
- Forced flexion / extension
- Must rule out cervical instability
- X-ray: lateral flexion / extension !
- Rx: like cervical strain
  - » often takes months

Disc Herniation

- Relatively rare in office setting
- Hyperflexion / trauma
- Hx: true radicular complaints
  - » occasionally just pain +/- spasm
- PE: neuro exam, L'Hermitte's, Spurling's
- Rx: NSAID's, "tincture of time" for stable exam
  - » ? decompression



“Burners”

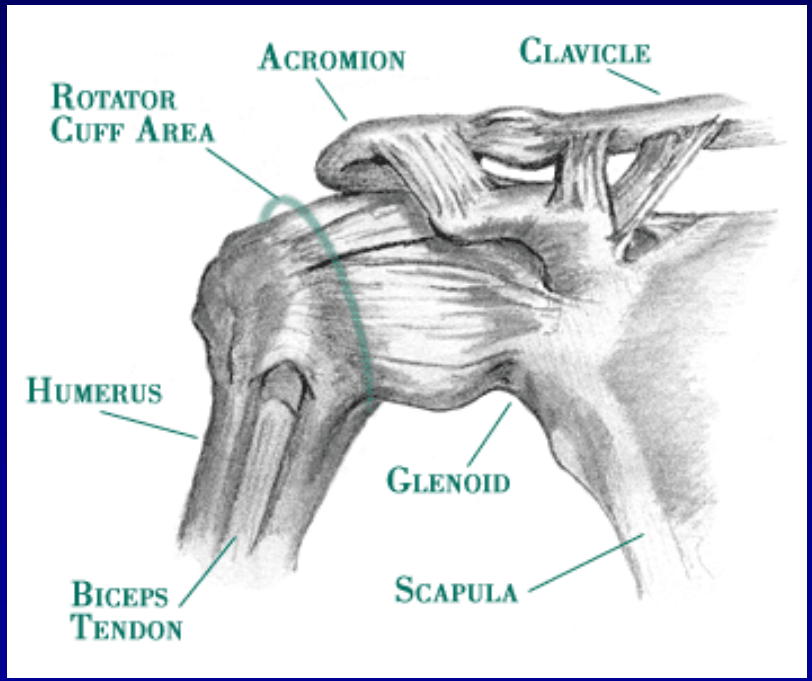
- Upper cervical root neurapraxia
  - C5, C6
- “My arm went dead”
- Lateral neck flexion, arm distraction
- Return to sports/work when no sx’s
- Rule out cervical disc / stenosis
- Prevention - neck roll in football

Fractures

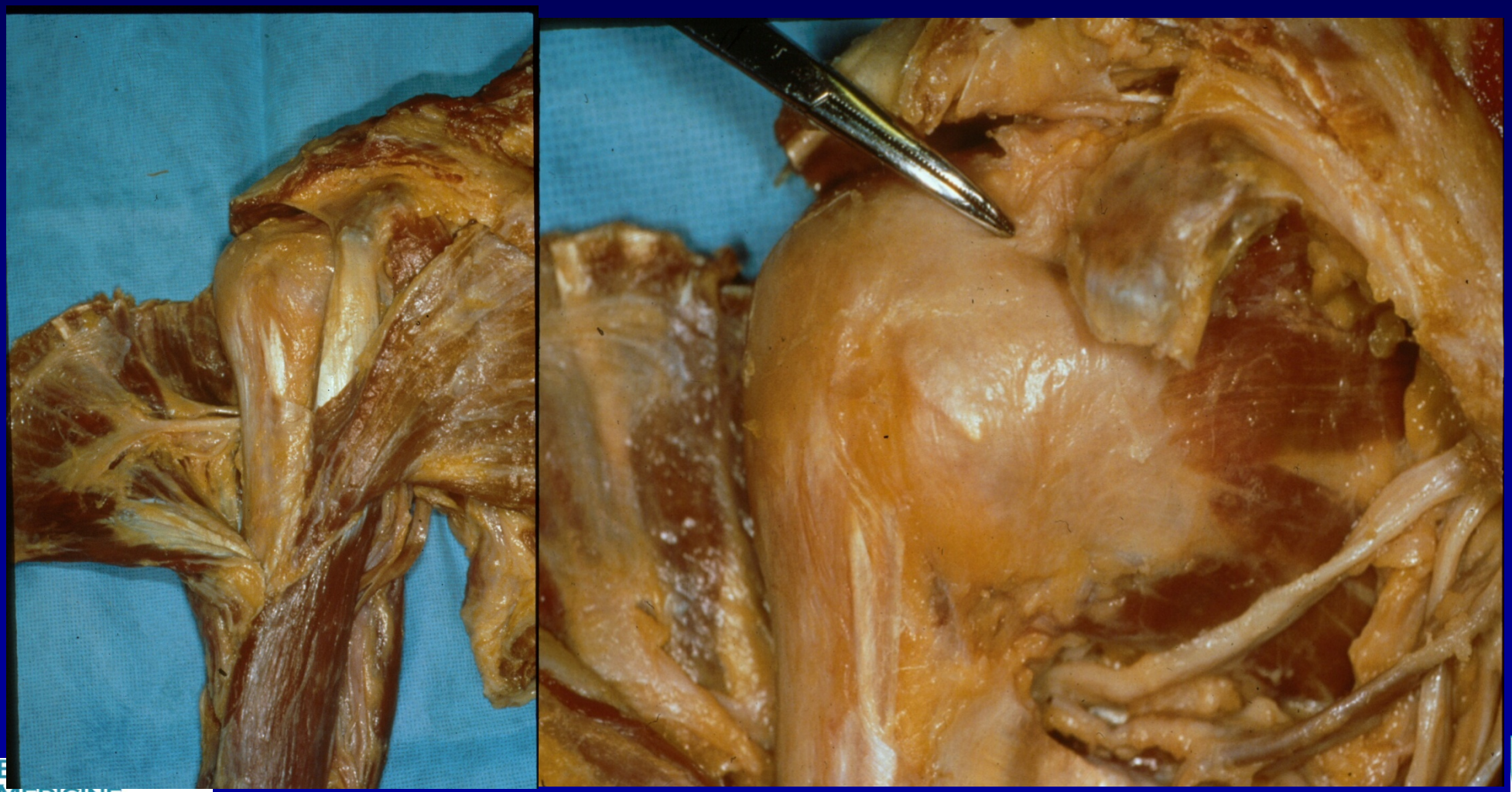
- H/o trauma
- When in doubt, X-ray!
- Don’t forget ligamentous injurie
- Immobilize
- Refer

Definitions

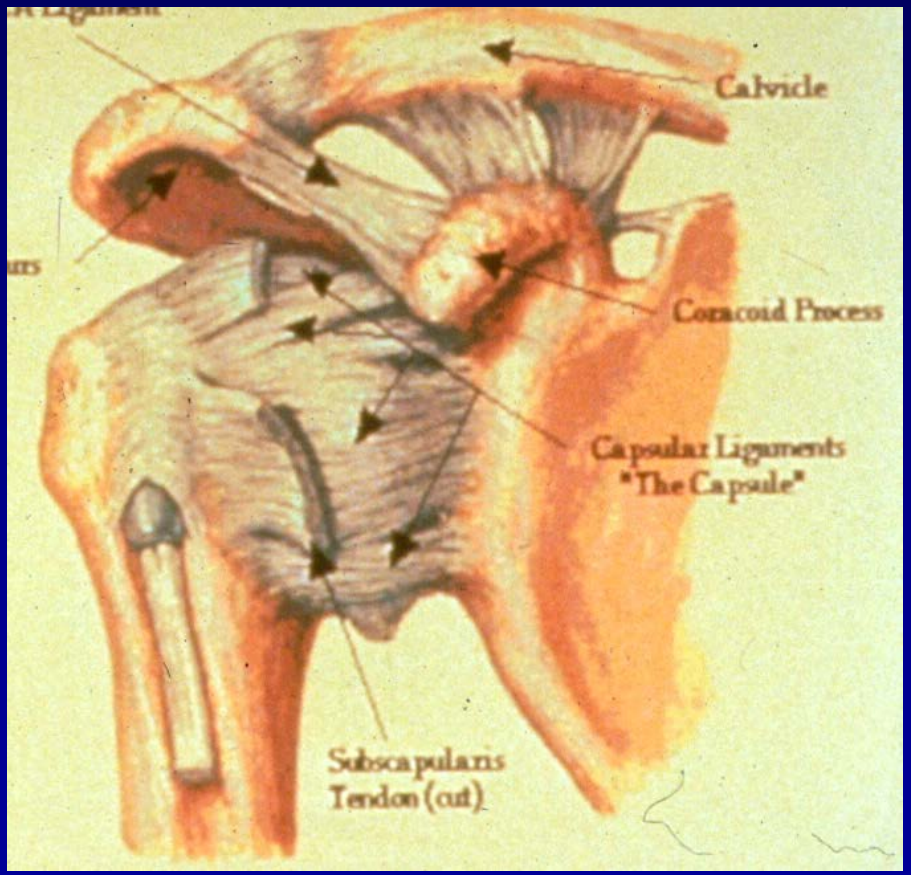
- Sprain - ligament injury
- Strain - muscle injury
- Tendon - muscle to bone
- Ligament - bone to bone
- Laxity - joint translation
- Subluxation - pathologic laxity
- Dislocation - no contact of joint surfaces

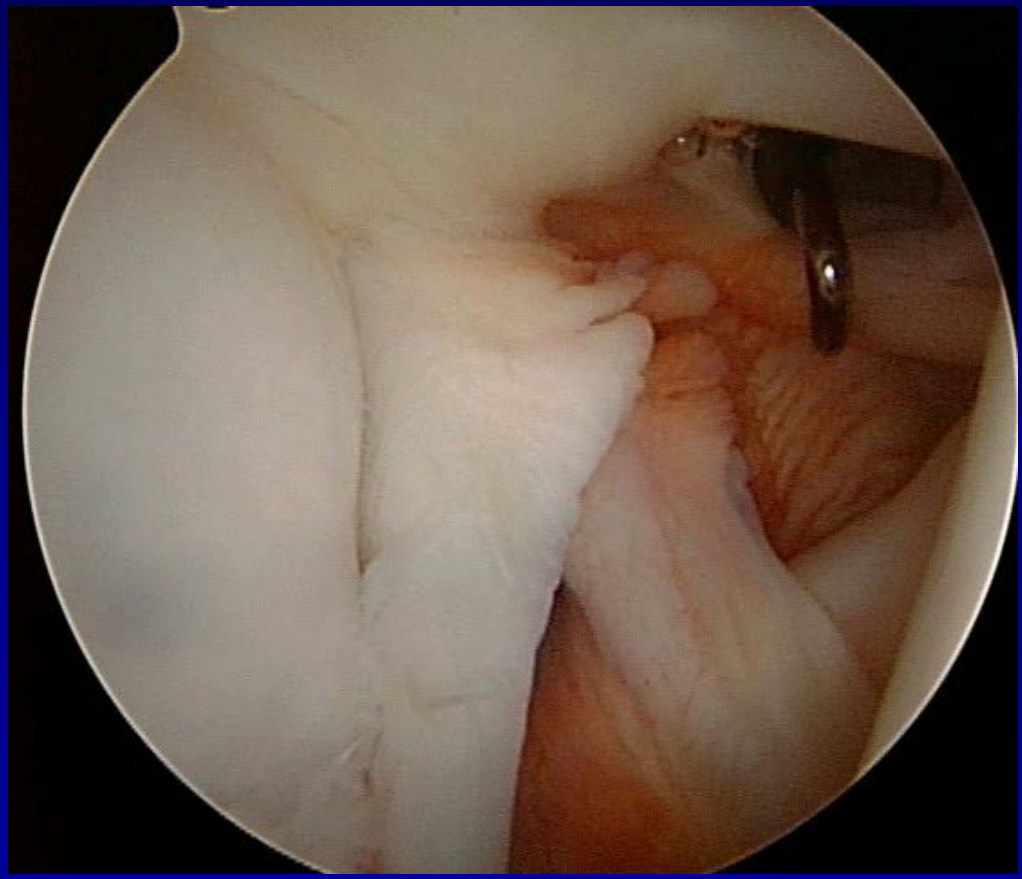


Anatomy of Muscles / Nerves



Anatomy of Ligaments / Capsule





Common Soft Tissue Injuries

- "Separated shoulder"
- Dislocation / subluxation
- Overuse injury (tendinitis, impingement)
- Rotator cuff tear
- Biceps tendinitis / rupture
- SLAP lesion

Case #2

- 31 y.o. hockey player
- Hit into glass
- C/o shoulder pain

“Separated Shoulder”

- Types I-VI
- I, II - non-operative
- III - ?
- IV, V, VI - surgery

A-C Sprain: “Separated Shoulder”

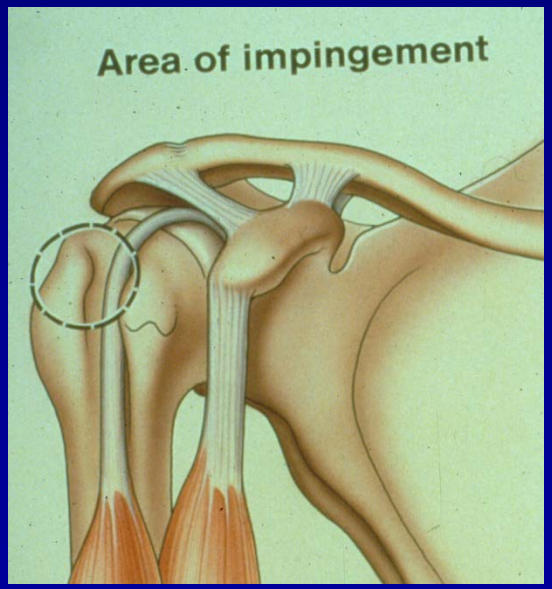
- Etiology: direct blow to shoulder; very common
- PE: tender over AC joint; pain with cross-body adduction
- X-ray: A-C joint widening / dislocation
- Ice, compression
- ? Injection acutely (marcaine, steroid)
- P.T. not needed, but maintain ROM
- Indications for surgery

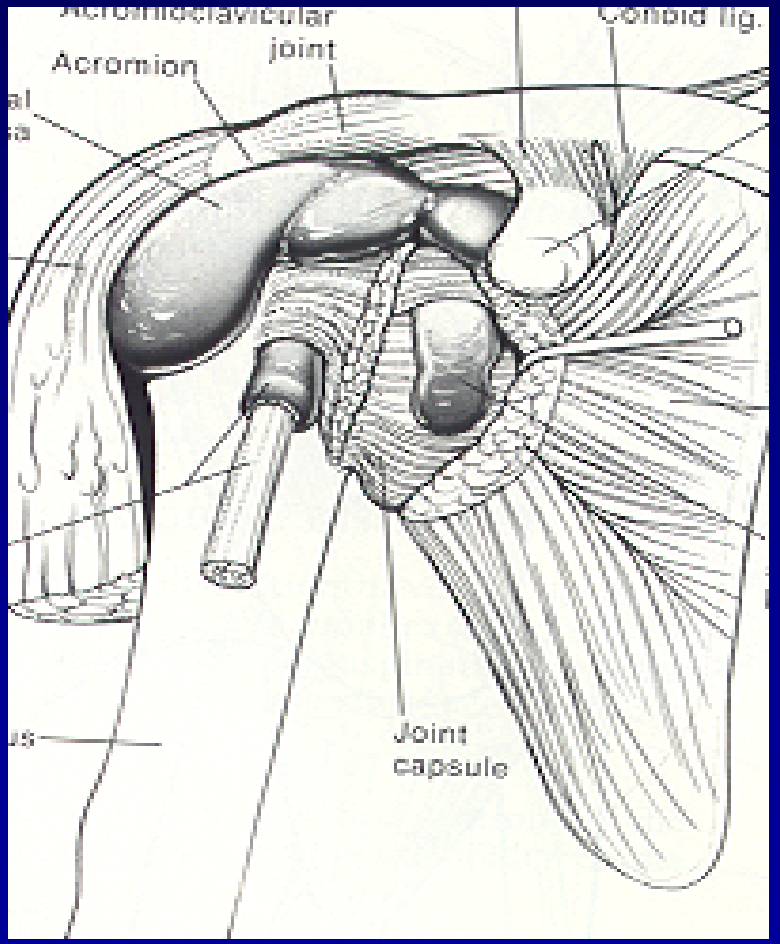
Case #3

- 49 y.o female c/o pain
- electrician
- night
- difficulty reaching overhead
- can’t swim, play tennis
- weak
- trauma?

Impingement Syndrome

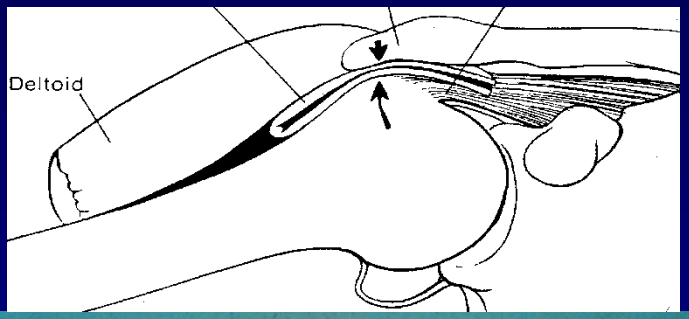
- Most common cause of pain
- Rotator cuff tendinitis, “bursitis”
- Cuff tears <u>rare</u> in patients < 35 y.o.





Impingement Syndrome

- Repetitive overhead activity
  - » throwers, tennis, swimmers, craftsmen



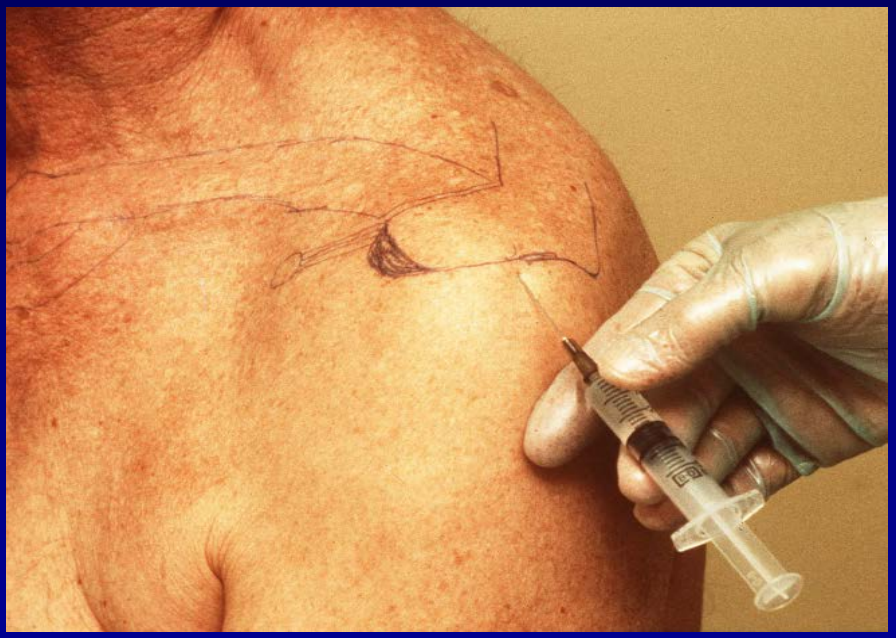
Diagnosis of Impingement

- History
  - » pain with overhead activity
  - » pain at night; +/- weakness
- Examination
  - » Neer and Hawkins impingement signs
  - » forward flexion; adduction/IR

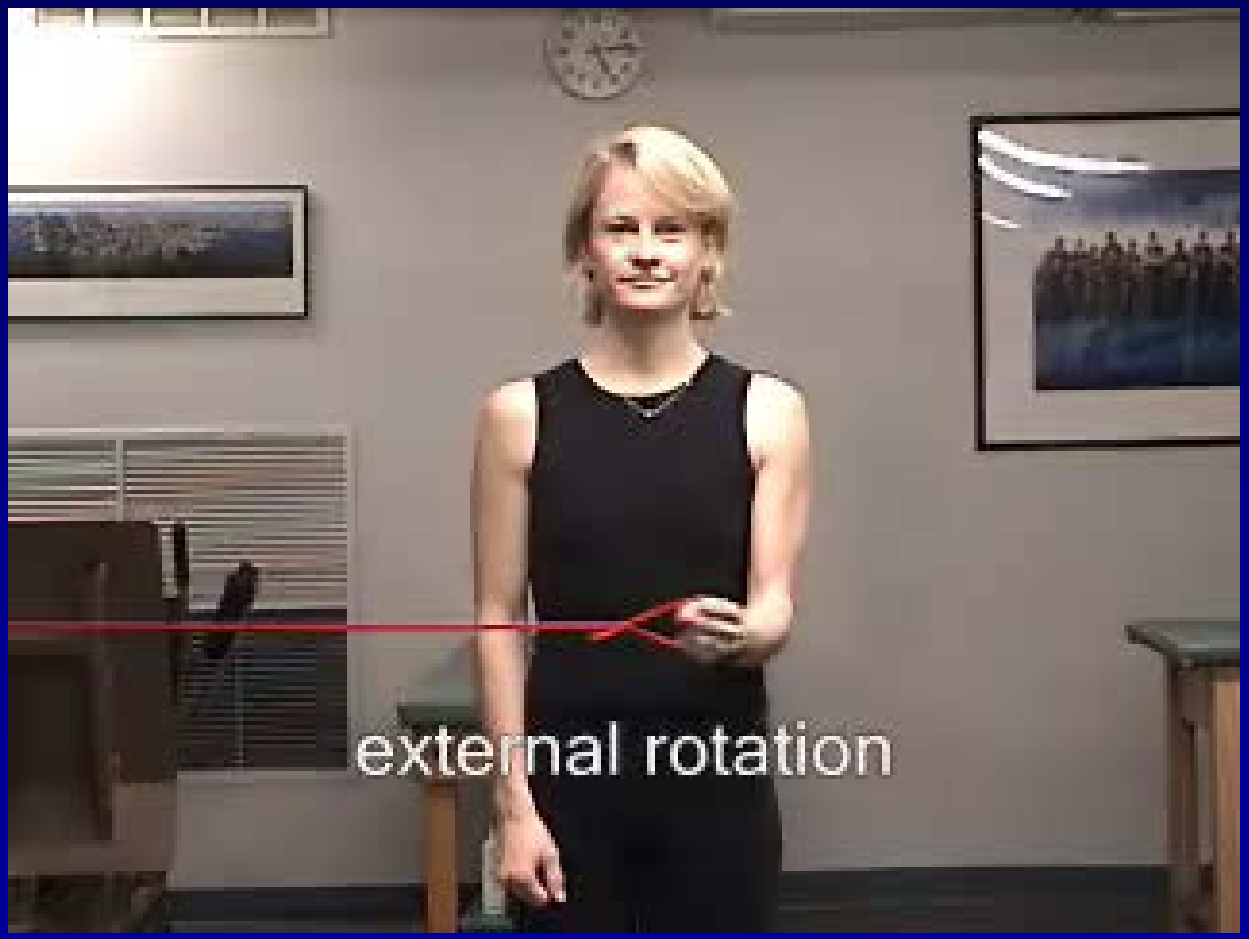
- Injection test - very helpful for diagnosis AND treatment
  - » up to 3 sometimes needed

Treatment of Impingement

- NSAID's
- Rotator cuff strengthening
- Injections x 3 (if needed)
- Up to 6 months rehab
- Arthroscopic decompression



Theraband Program



Rotator Cuff Tears

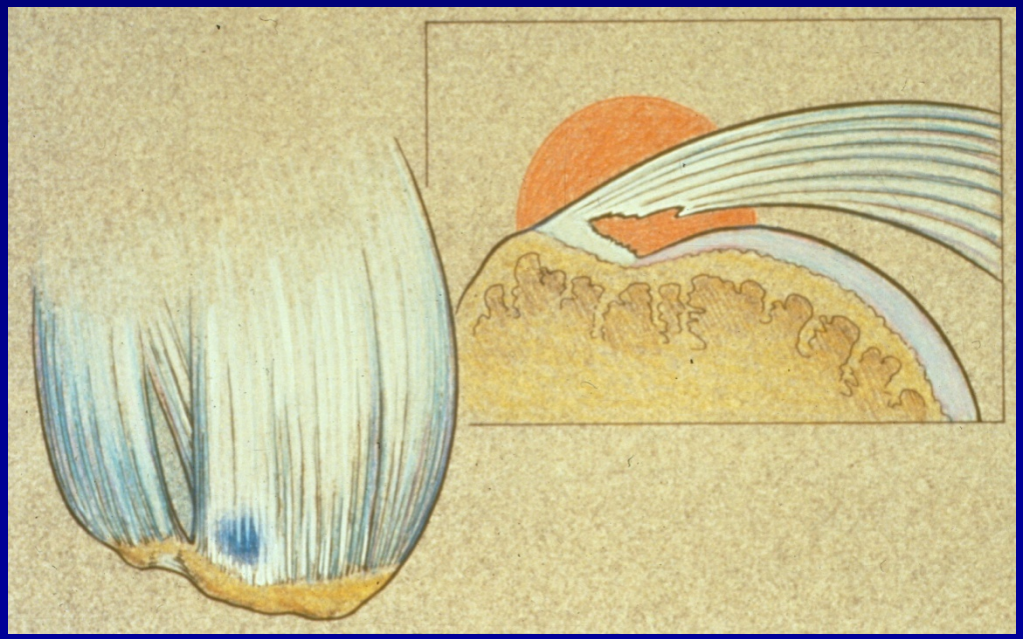
- Can be very debilitating / painful – don't ignore…

Diagnosis of RTC Tear

- Hx:
  - » pain at night
  - » pain with overhead use
- PE:
  - » impingement signs
  - » supraspinatus / ER resistance
  - » discrepancy between active / passive ROM
- Injection test

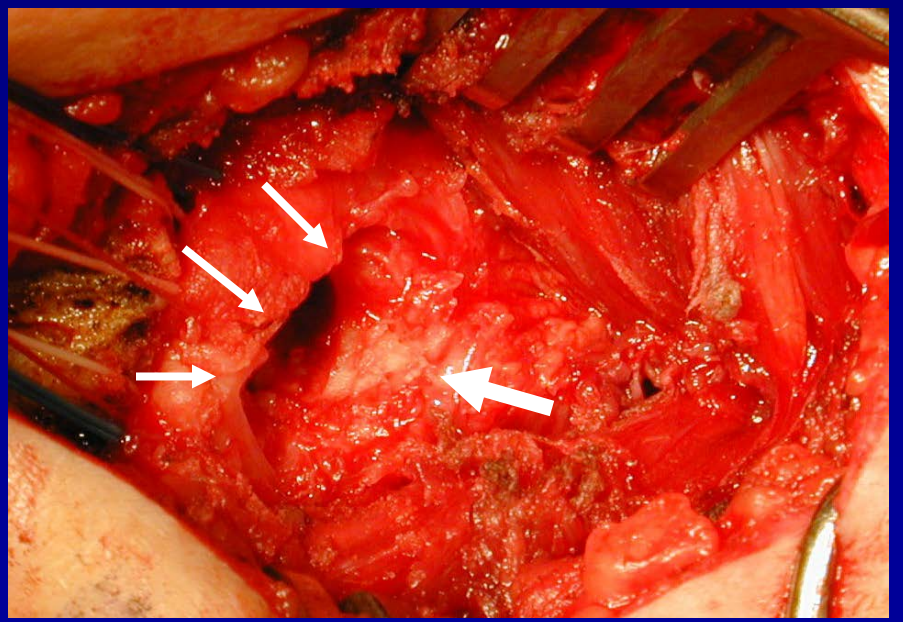
Imaging for RTC Tears

- MRI confirms PE findings
- Ddx:
  - » Impingement tendinitis, SLAP lesions, partial vs. full tears



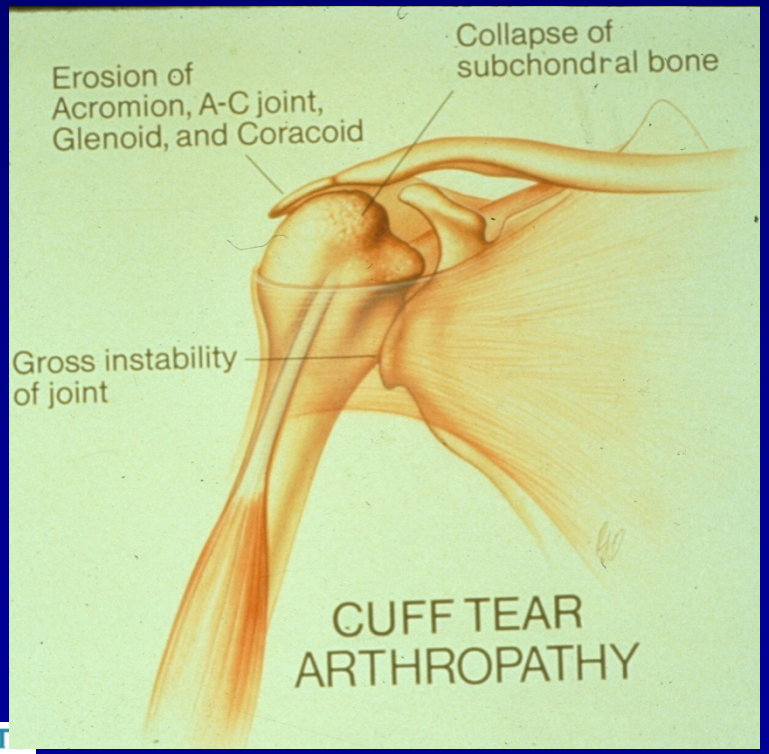
Treatment of RTC Tears

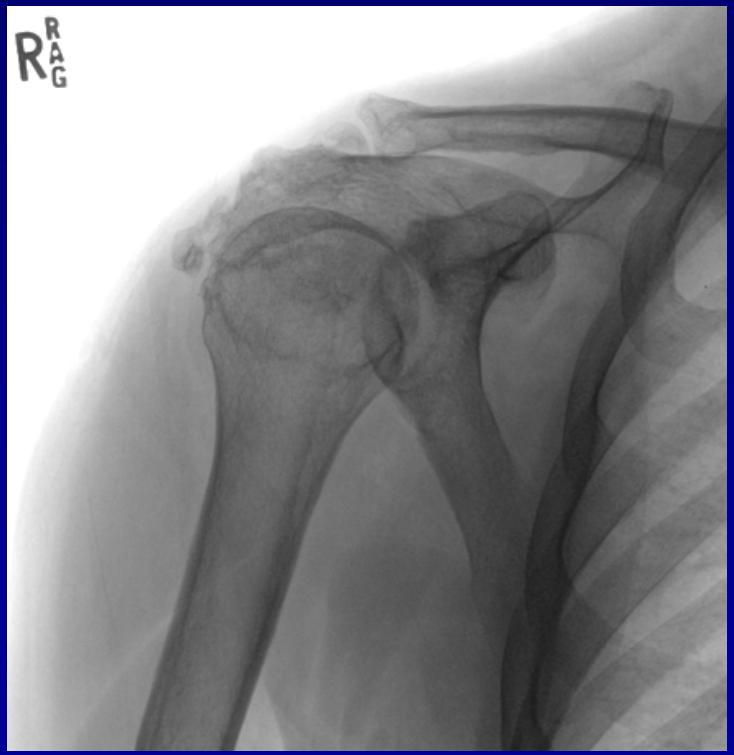
- P.T. role - to restore ROM pre-op, not "avoid surgery"
- Small tears tend to become large tears
- Large tears difficult/impossible to repair
  - » high rate of complications



RTC Repair

- Most full-thickness tears should be repaired, depending on patient co-morbidities





Case #4

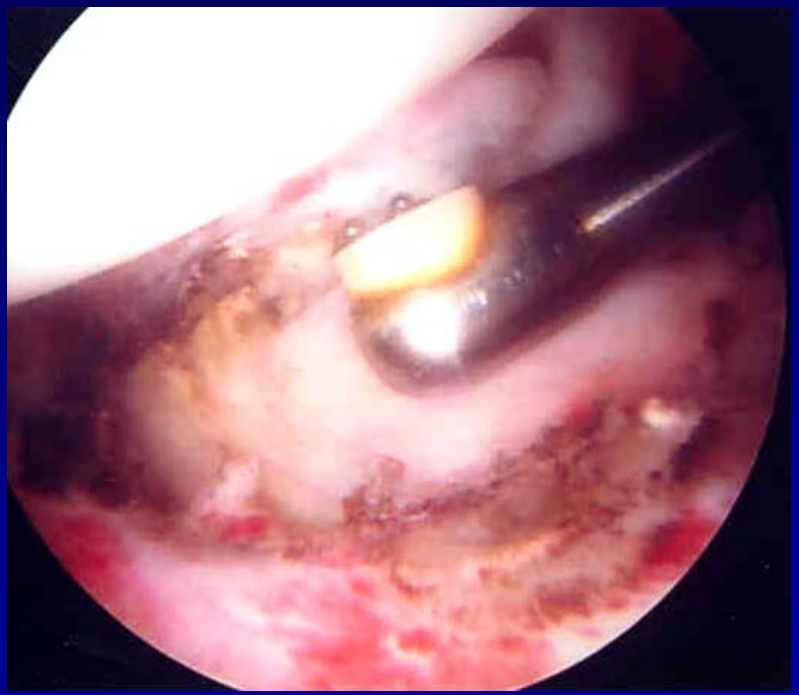
- 62 y.o. female
- C/o shoulder pain
- Limited ROM
- PMH: Diabetes

Adhesive Capsulitis
("Frozen Shoulder")

- Limited active and passive ROM
- Differentiate 1º vs. 2 º
- Different phases of pathology
- Hx: Pain, stiffness
- Diabetes

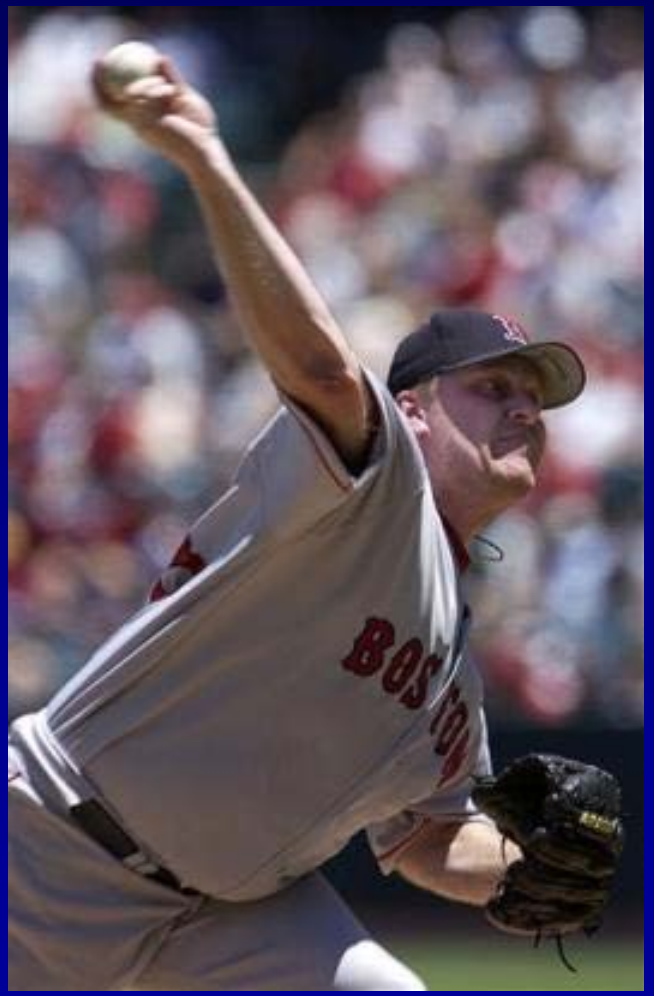
Adhesive Capsulitis: Treatment

- NSAID's
- Physical Therapy
- Subacromial Injection(s)
- Role of surgery



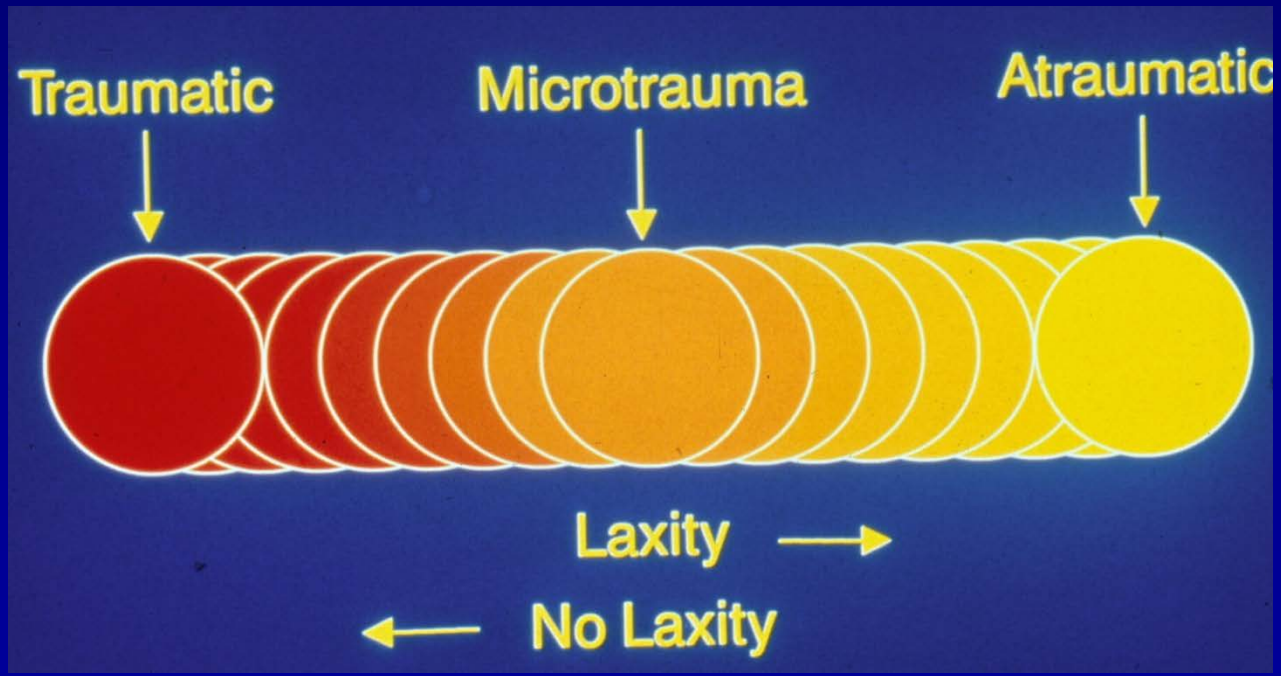
Case #5

- 28 y.o. man c/o pain
- night
- overhead
- reaching into back seat



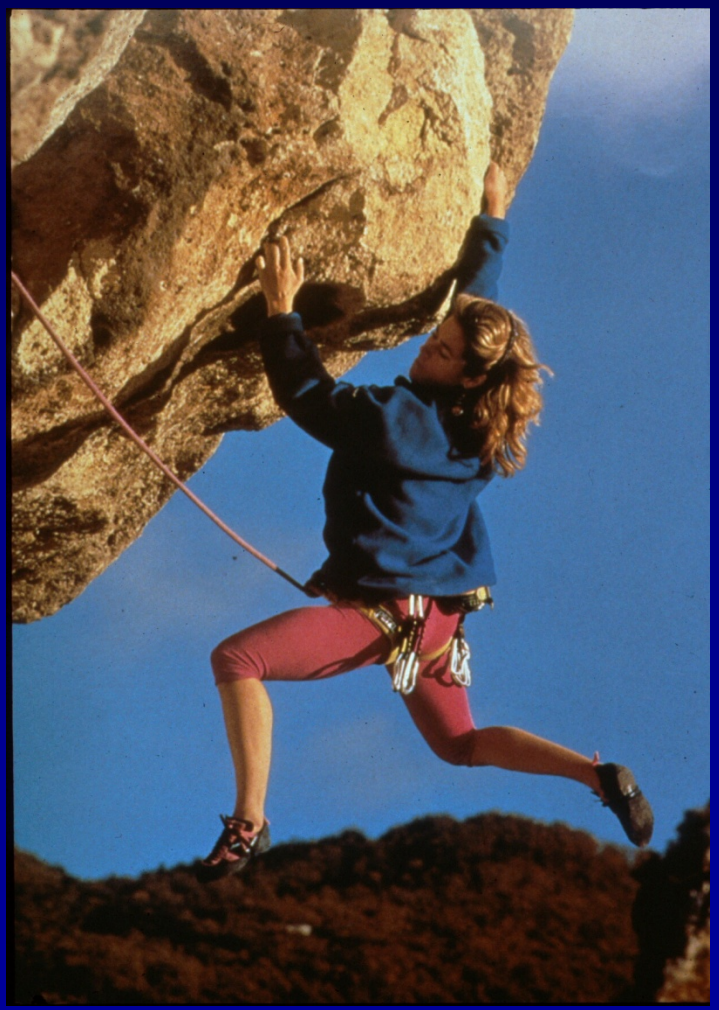
Shoulder Instability

- Must differentiate between shoulder “dislocation” and “subluxation”



Shoulder Instability: History

- Pathology occurs along a spectrum of severity
- Complaints or shoulder “pain” more common than “instability”



Shoulder Instability: History

- Does your shoulder feel loose?
- Have you ever dislocated your shoulder?
- Do you avoid placing your arm in certain positions?
- Do you have difficulty reaching behind you, throwing, or pushing open a heavy door?
- Is it difficult to lift a heavy bag?”

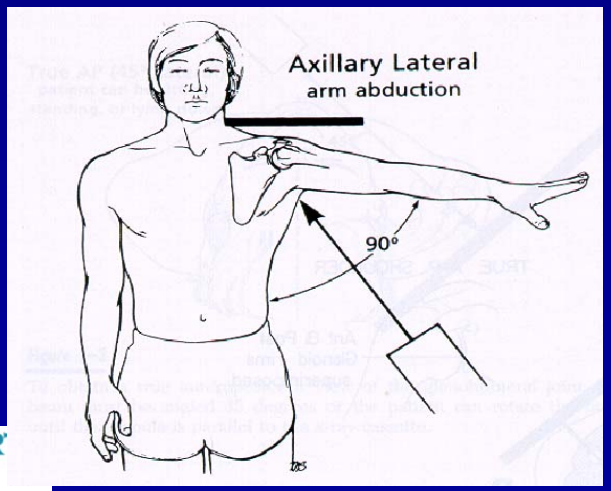
Shoulder Instability: Physical Exam

Apprehension test

Relocation test

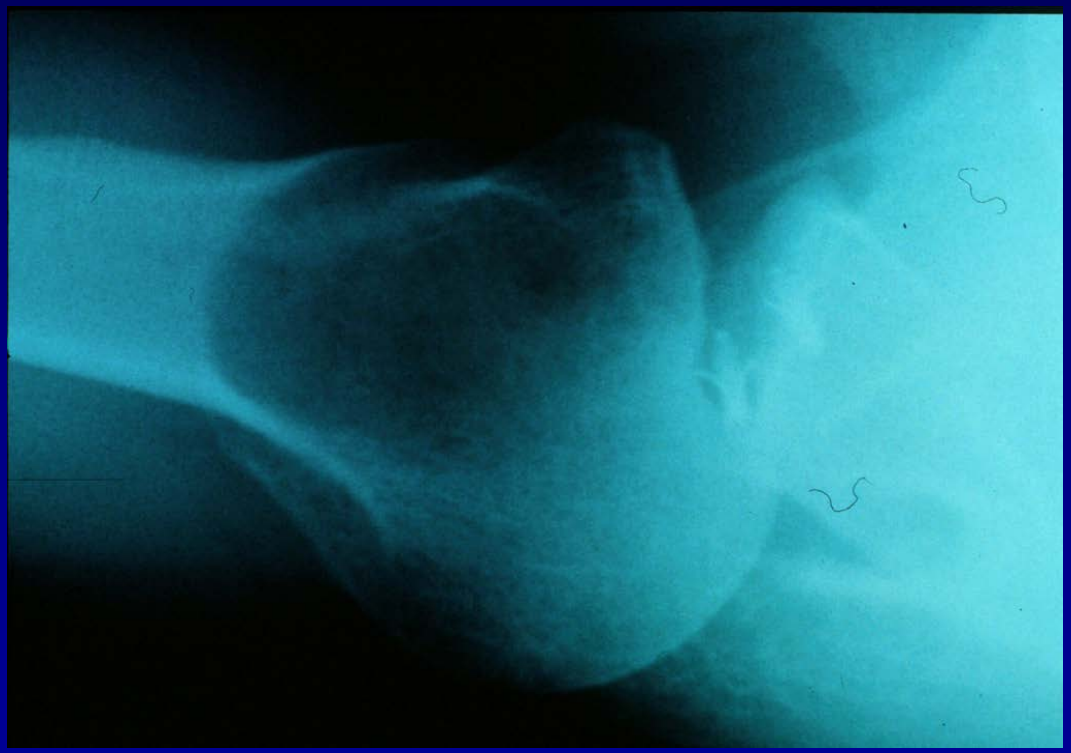
Shoulder Instability: Imaging

- MUST have axillary view or trans-scapular Y-view!
- AP alone NOT acceptable
- Hill-Sachs, Bankart lesion



Management of Instability

- Acute dislocation
  - » reduction, nv assessment
- > 40 years old
  - » r/o rotator cuff tear!
- Sling
  - » symptomatic relief only
  - » does not decrease recurrence rate

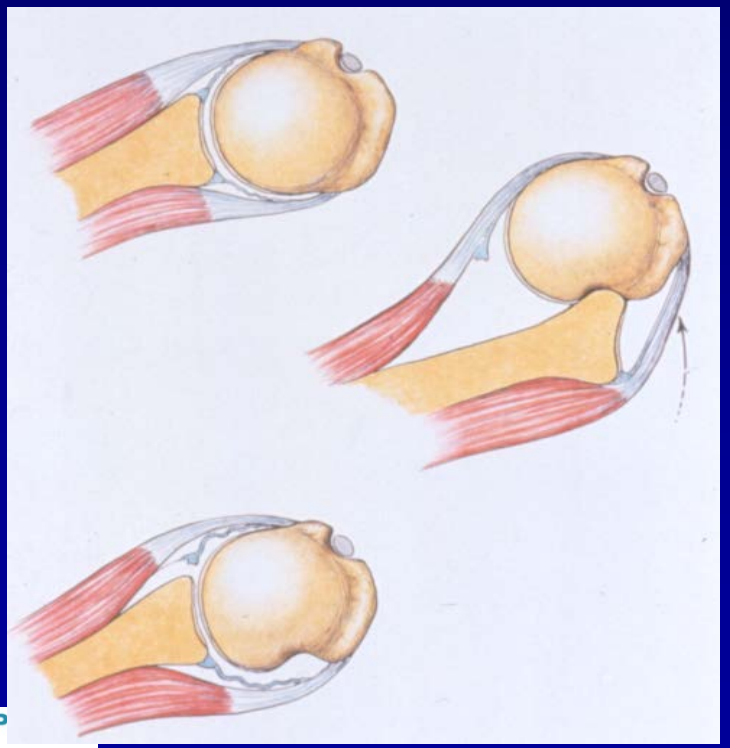


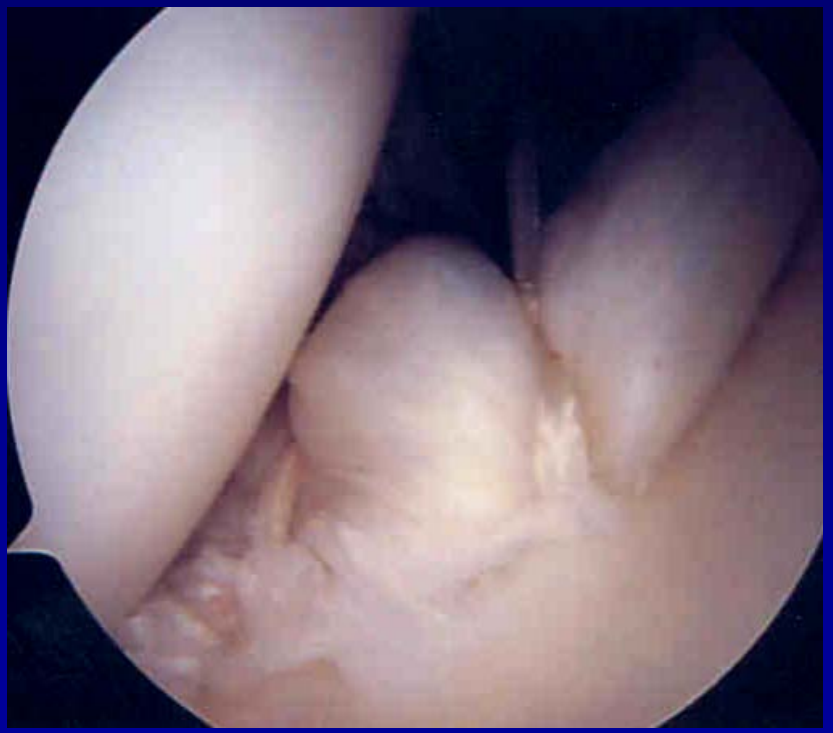
Management of Instability

- Re-establish early ROM
- Rotator cuff strengthening
- Recurrence rate
  - » > 90% less than 20 years old
  - » < 25% over 40 years old

Management of Instability

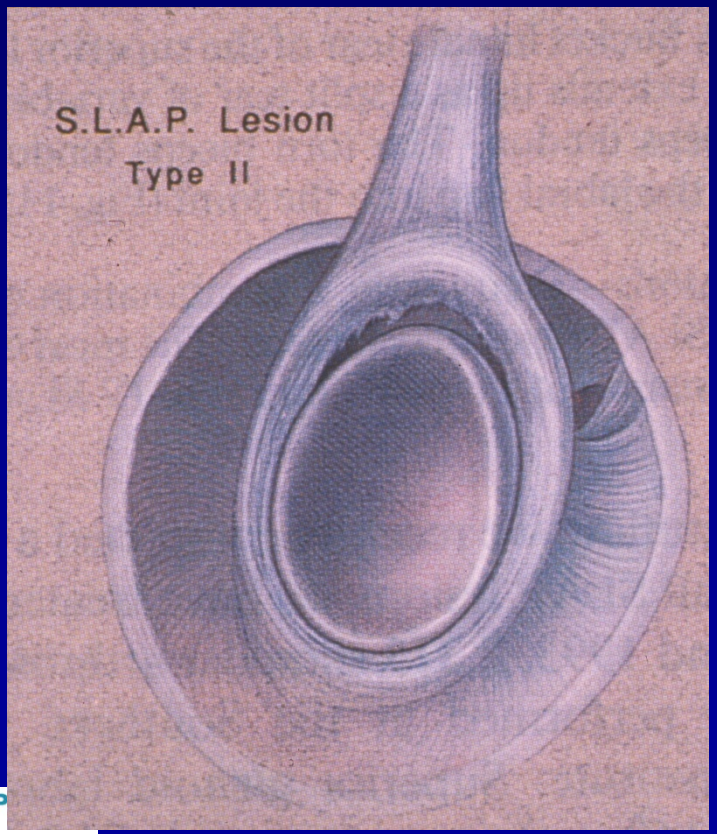
- Role for arthroscopy and early stabilization in young, athletic patients

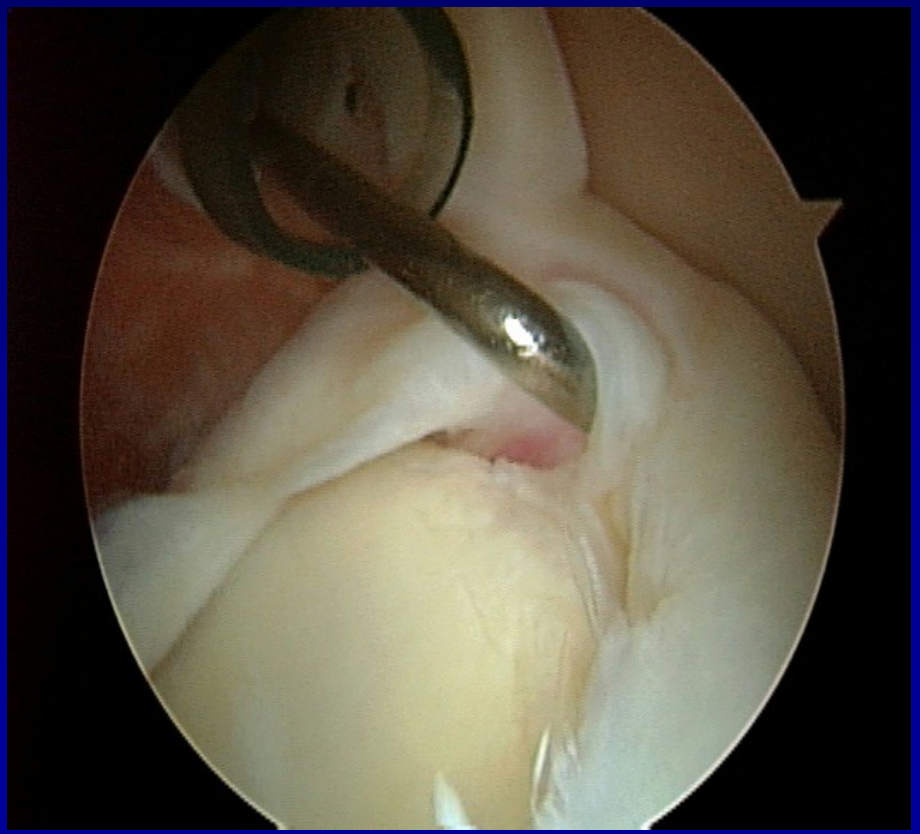




“SLAP” Lesion

- Superior Labrum, Anterior to Posterior tear





SLAP Diagnosis

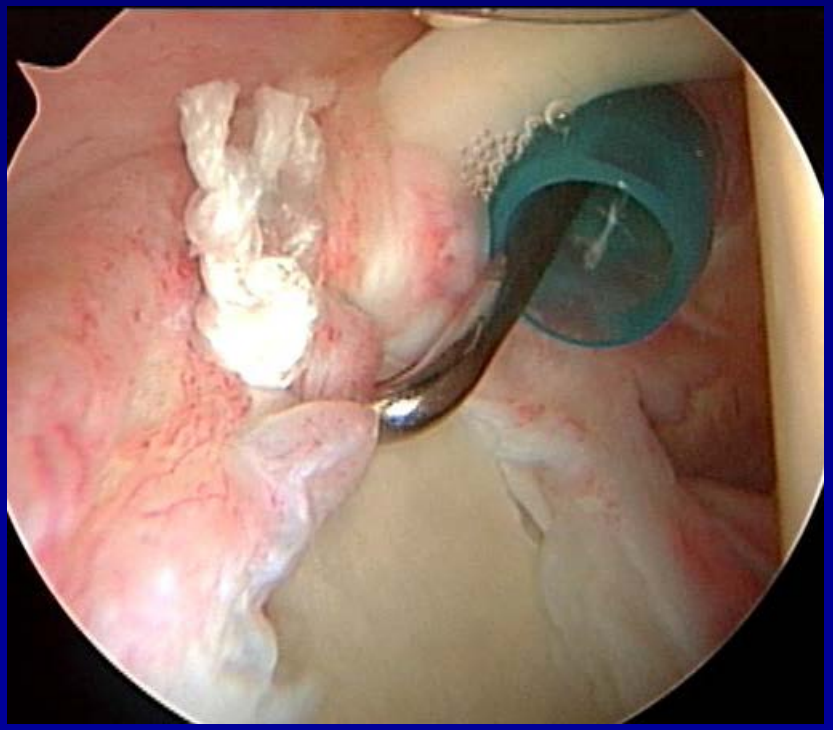
- Etiology: eccentric contraction of biceps muscle tears superior labrum at biceps anchor; deceleration phase of throwing; fall on outstretched arm

SLAP Diagnosis

- History
  - » anterior shoulder pain
  - » “rotator cuff symptoms”
- Examination
  - » O’Brien’s sign
  - » resistance in humeral adduction/flexion/IR
  - » weakness on rotator cuff testing

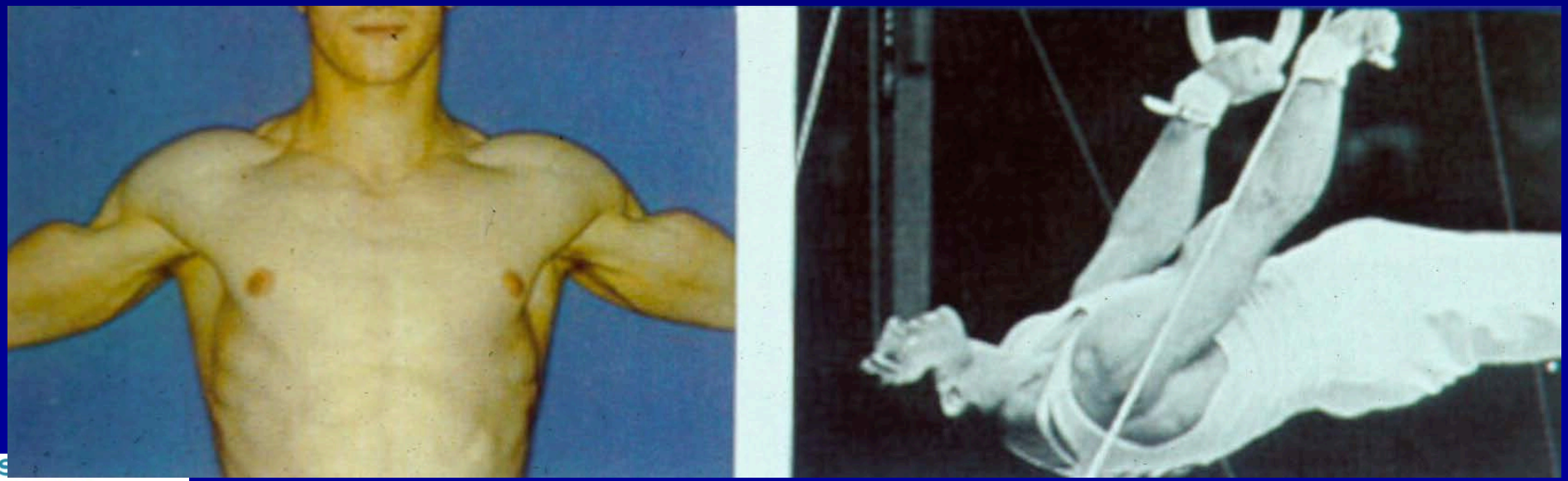
Treatment of SLAP Lesions

- MRI - can be very helpful in ddx
- Rx: Arthroscopic repair for persistent pain/weakness



Biceps Rupture

- Proximal - long head of biceps at biceps groove or glenoid attachment
- Distal - biceps tuberosity at elbow

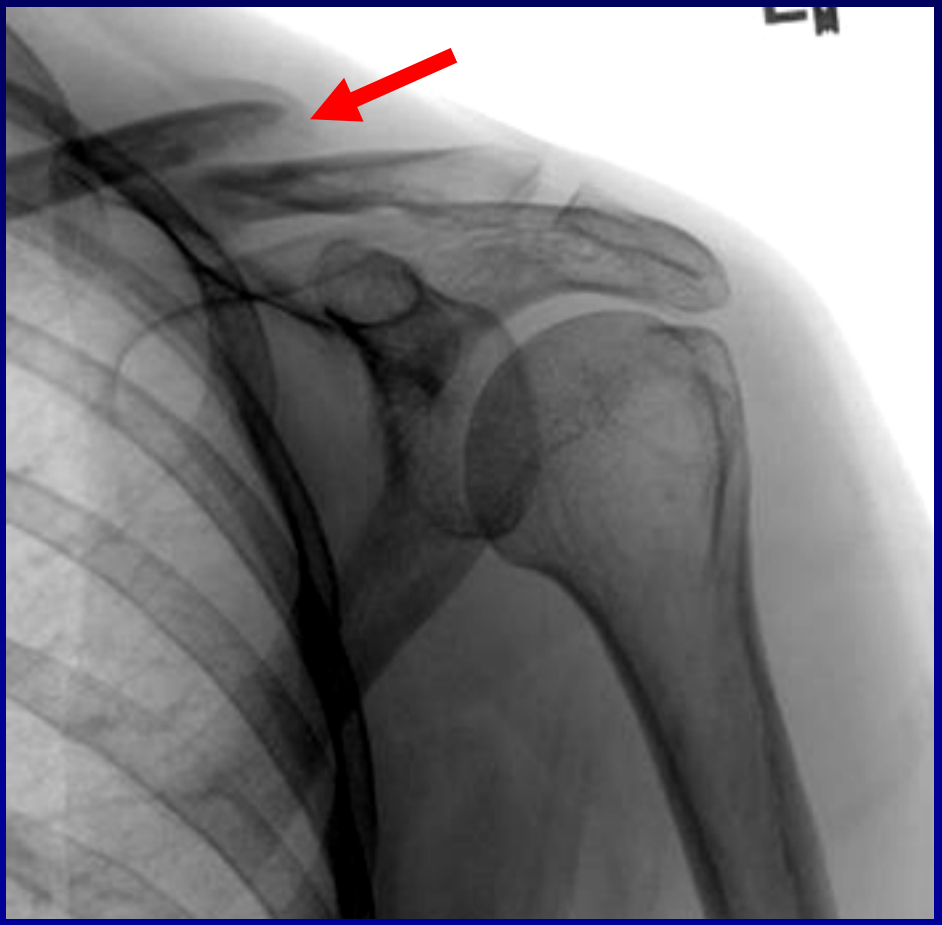


Treatment of Biceps Ruptures

- Hx: “I felt a pop/tear in my arm”
- PE: “Popeye” deformity; loss of elbow flexion / supination strength; tenderness
- Early surgical repair for distal ruptures
- Proximal repair - controversial; ? rehab alone
- If surgery is needed, “the earlier, the better”

Shoulder: Fractures

- Clavicle
- Greater tuberosity
- Proximal humerus
- Physeal (children, especially throwers)

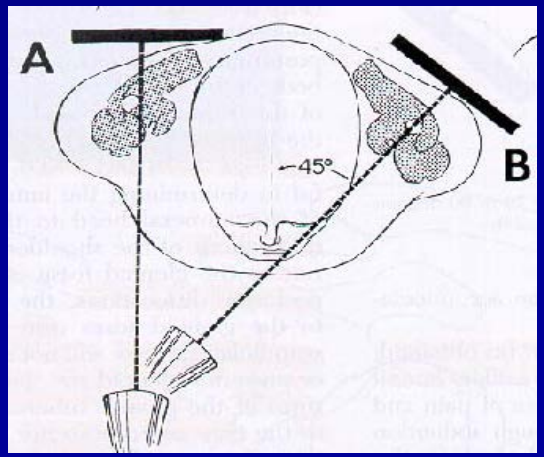


Case #6

- 72 y.o. man
- pain
- limited ROM
- getting worse
- can’t sleep

Glenohumeral Arthritis

- Shoulder is typically not a "weight-bearing joint"
- Less common than in hip or knee
- Dx:
  - » crepitus on ROM; limited ROM
- Need <u>true</u> AP X-ray of glenohumeral joint
  - » "Graci view"



Glenohumeral Arthritis

- Mild DJD - NSAID's, preserve ROM
- Mod DJD - ? Indication for arthroscopy
- Severe DJD - total shoulder arthroplasty
  - » TSA indicated for pain, <u>not</u> necessarily ROM

Team approach:
Don’t hesitate to ask a colleague

Thank you

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