

Shoulder, Elbow, Wrist, Hand Pain: Diagnosis and Management

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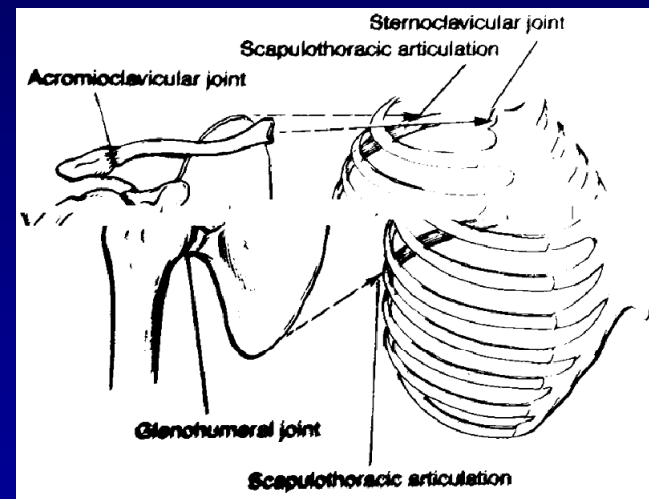
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The “Shoulder”

- 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

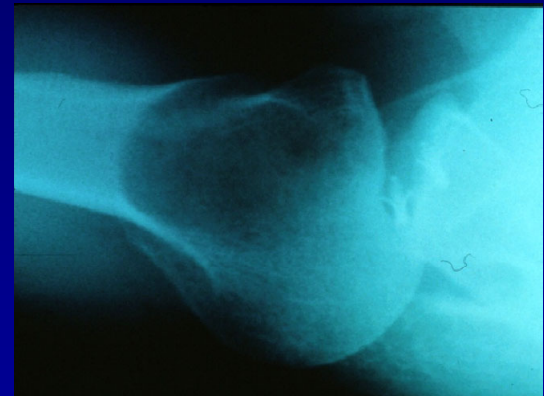
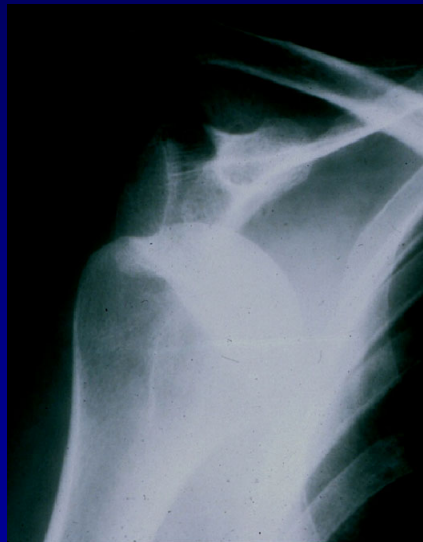
- C5 - biceps
- C6 - brachioradialis
- C7 - triceps

Pulses

- Adson/Wright, Roos tests

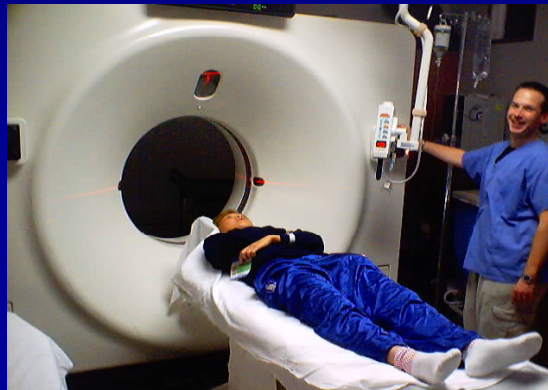
Radiographic Studies

- 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 Examination

- ROM
- Tenderness
- L'Hermitte's sign
- Spurling's Test



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



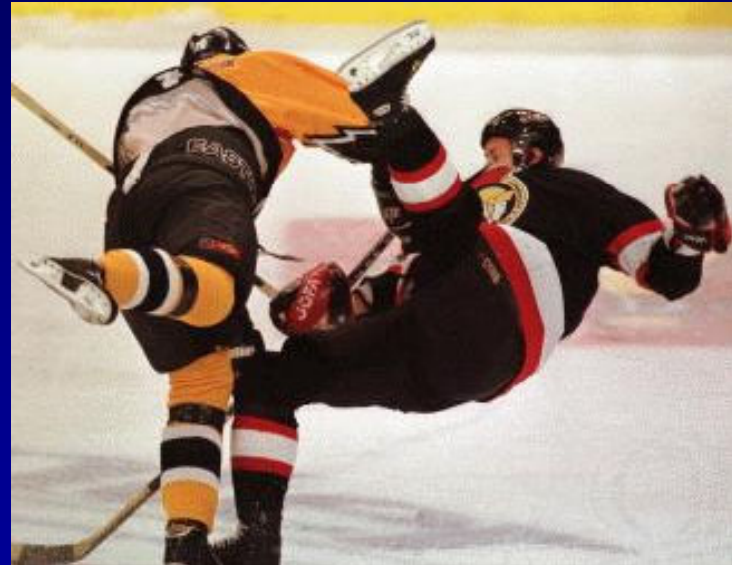
“Burners”



- 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

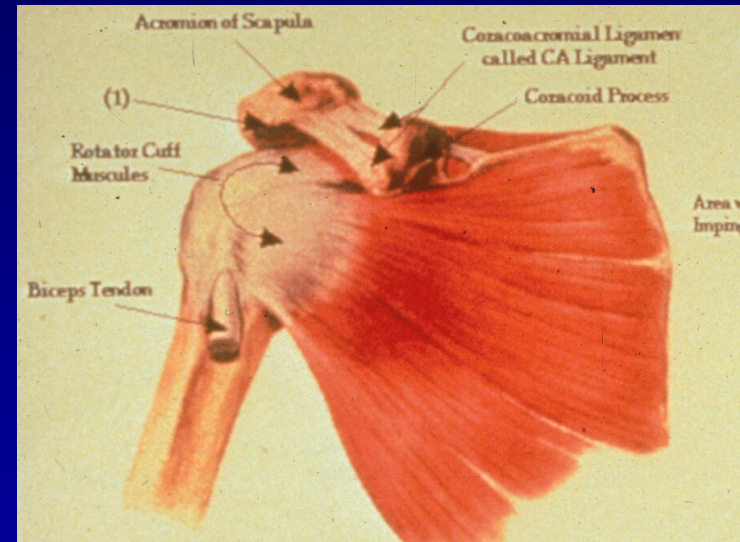
Fractures

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

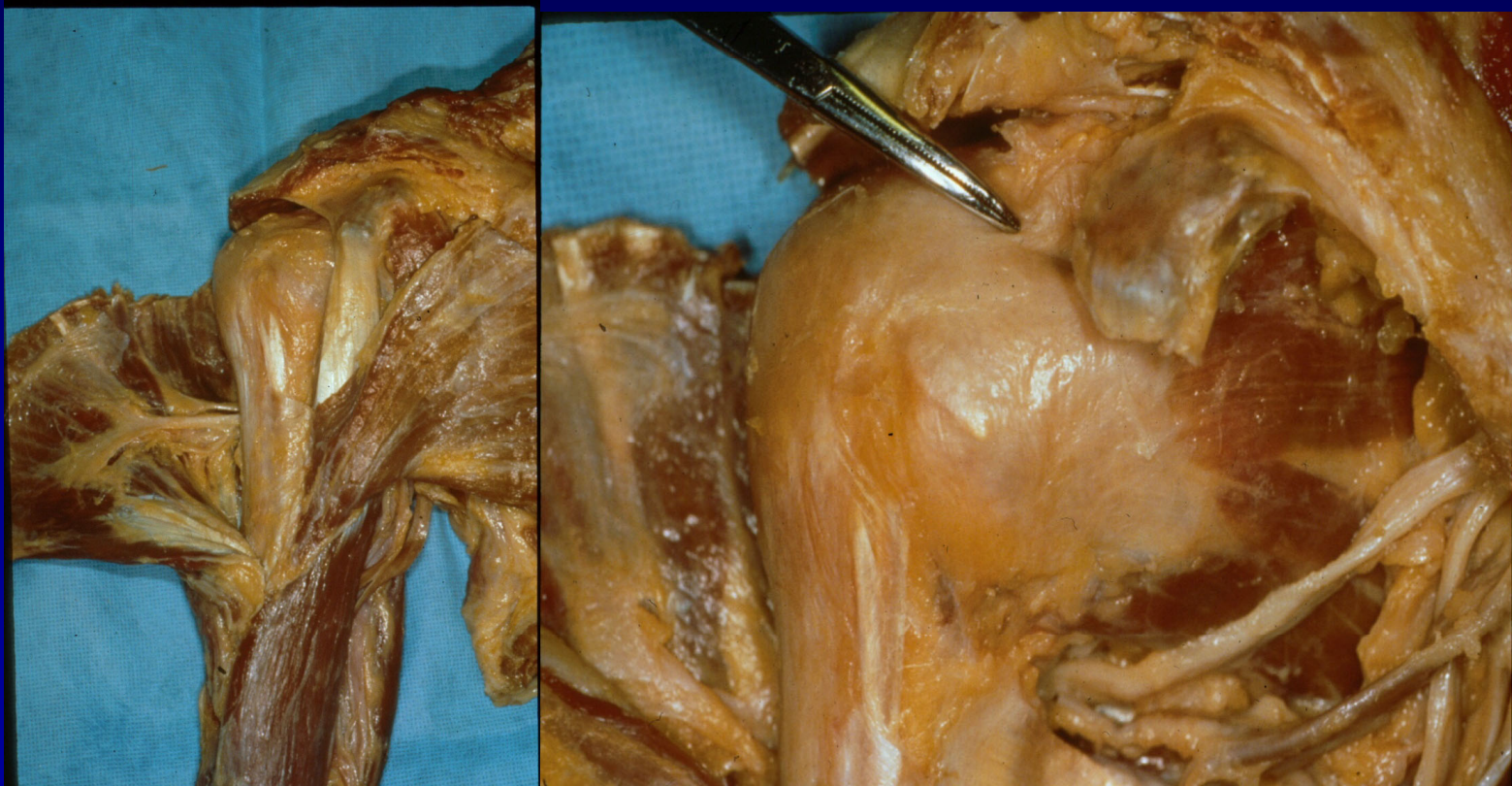


Definitions

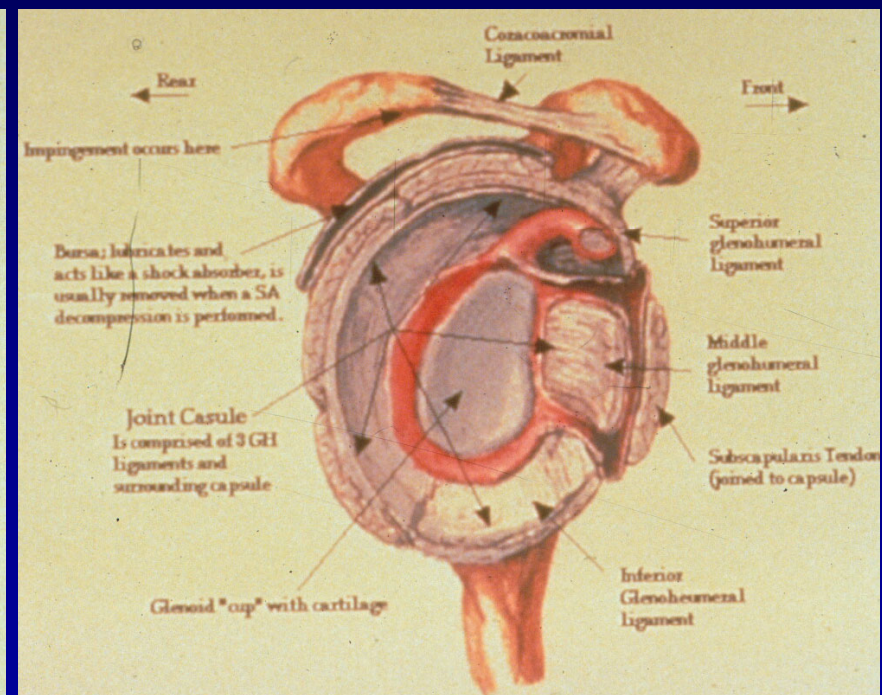
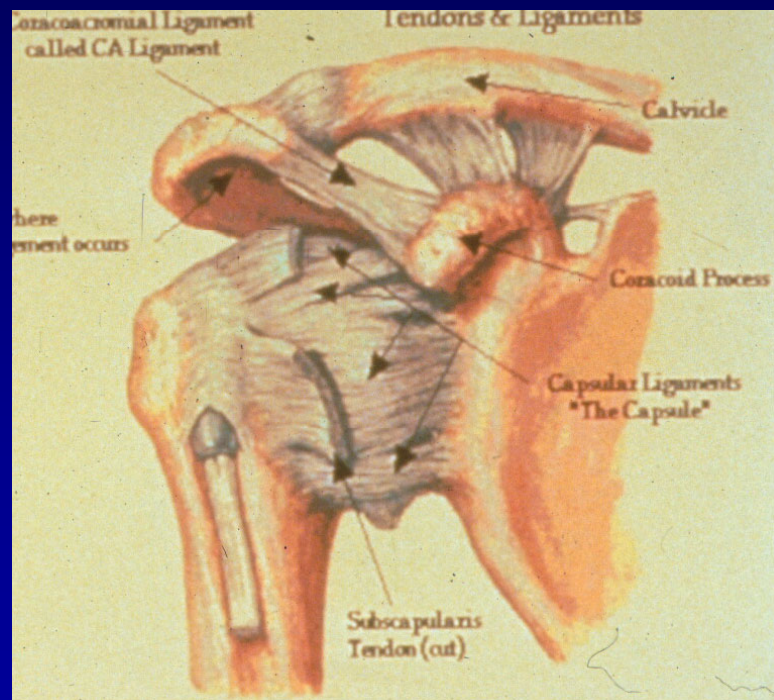
- Sprain - ligament injury
- Strain - muscle injury
- Tendon - muscle to bone
- Ligament - bone to bone
- Laxity - joint translation
- Subluxation - pathologic laxity
- Dislocation - no contact of joint surfaces



Anatomy of Muscles / Nerves



Anatomy of Ligaments / Capsule



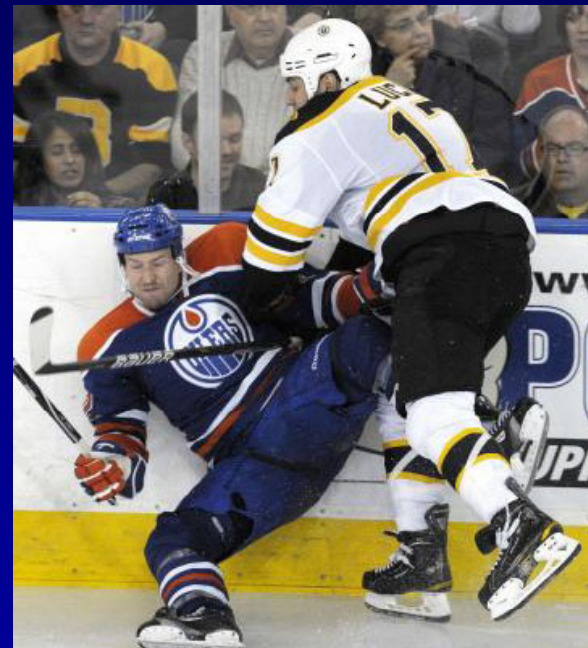
Common Soft Tissue Injuries

- “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



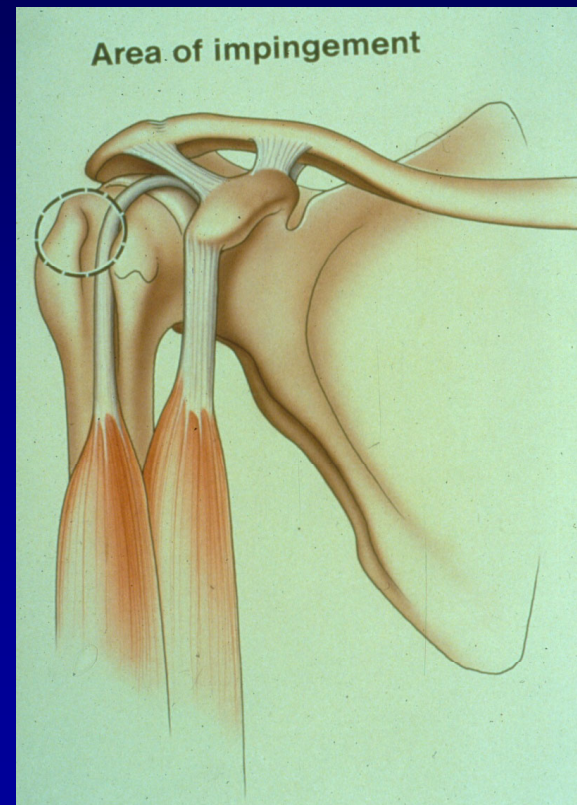
Case #3

- 49 y.o woman c/o pain
- night
- overhead
- can't swim, play tennis
- weak
- trauma?



Impingement Syndrome

- Most common cause of pain
- Rotator cuff tendinitis
- “Bursitis”
- Cuff tears rare in patients < 35 years of age



Impingement Syndrome

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



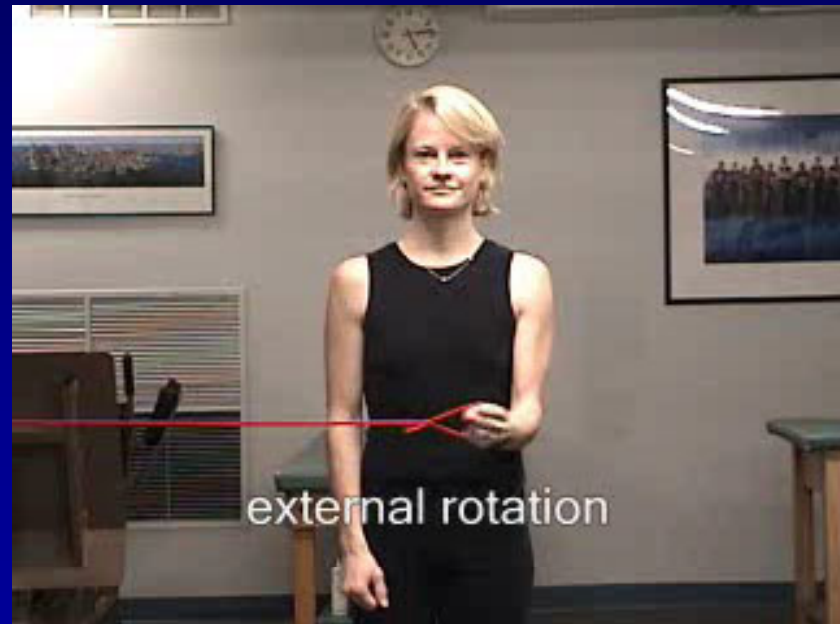
Diagnosis of Impingement

- 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



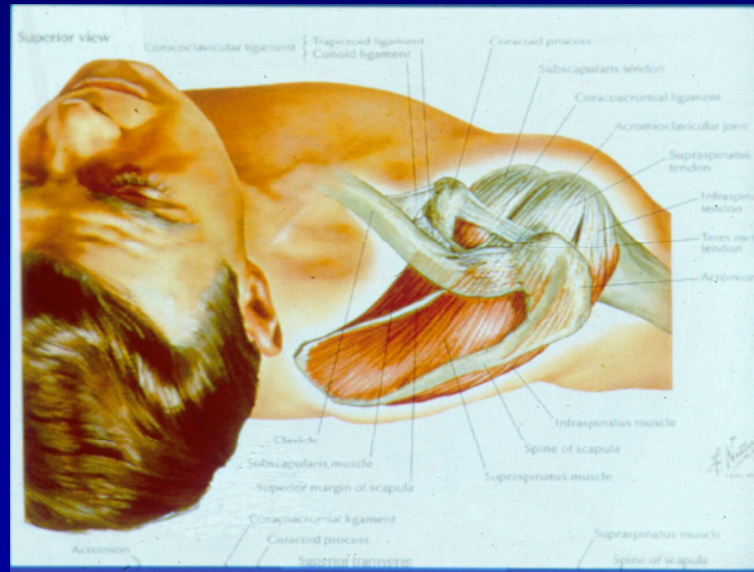
Treatment of Impingement

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



Rotator Cuff Tears

- Partial - thickness vs. full-thickness
- Can be very debilitating / painful



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



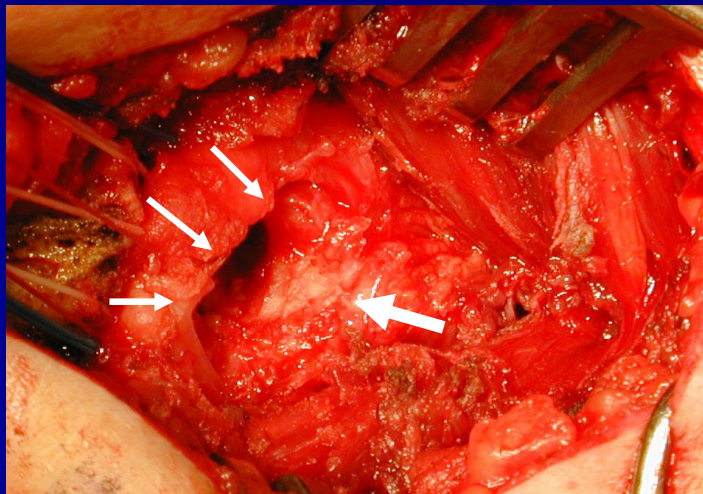
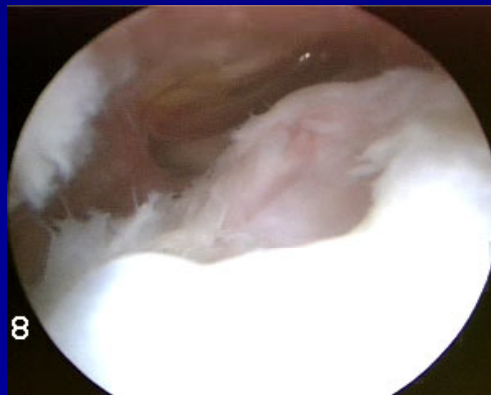
Imaging for RTC Tears

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



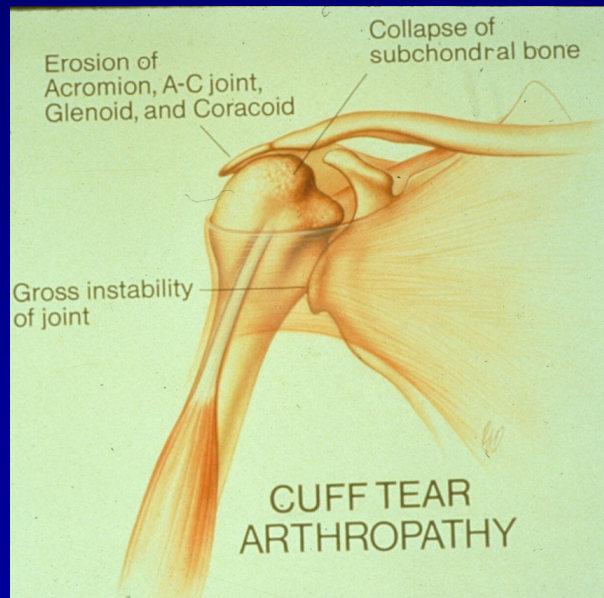
Treatment of RTC Tears

- 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

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



Adhesive Capsulitis

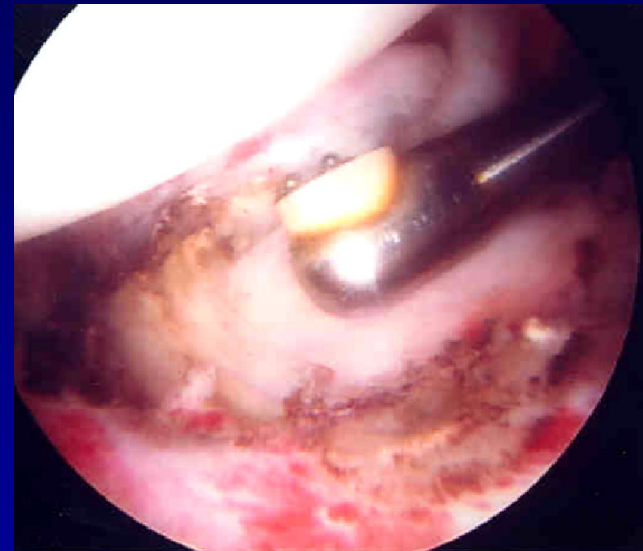
("Frozen Shoulder")

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



Adhesive Capsulitis: Treatment

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



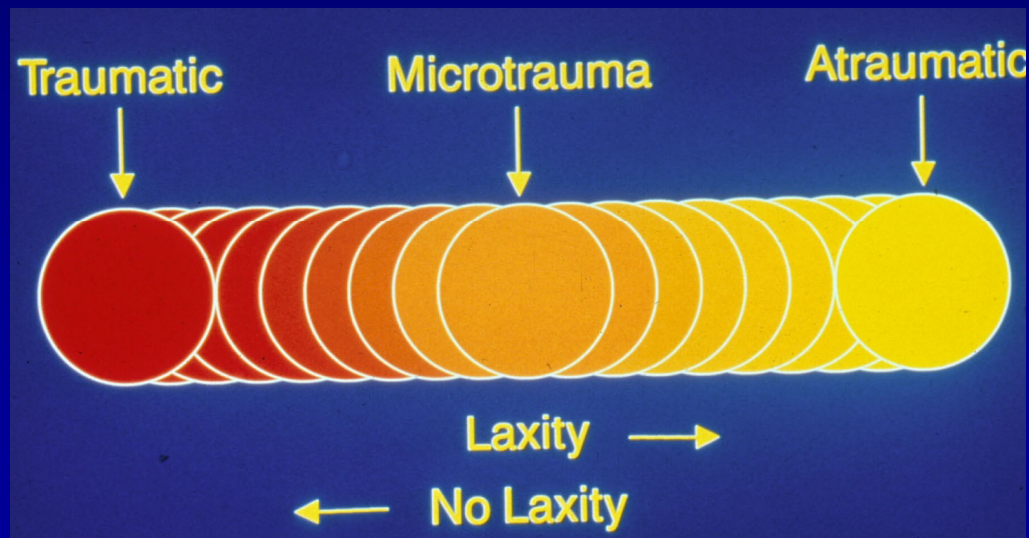
Case #5

- 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 of 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

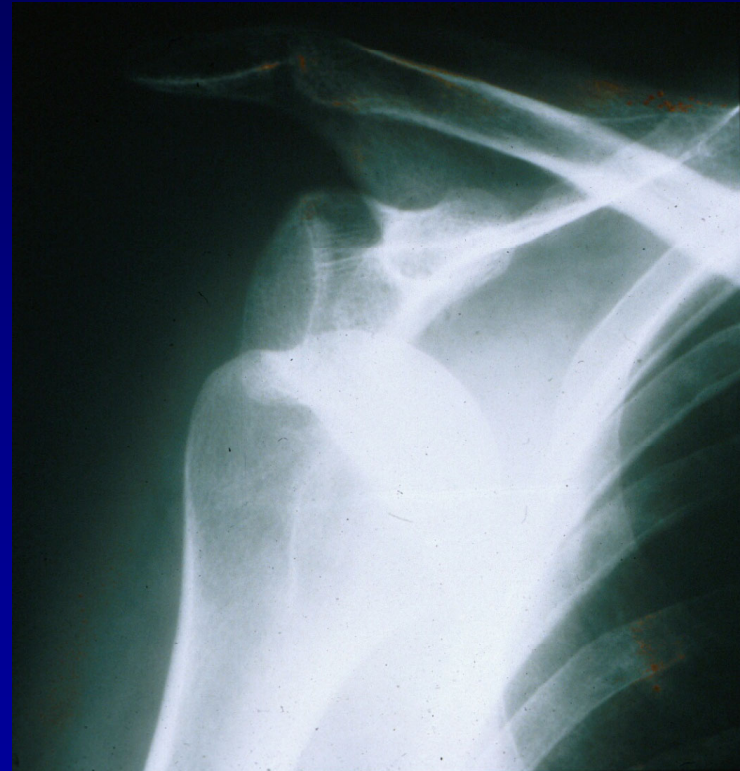


Relocation test



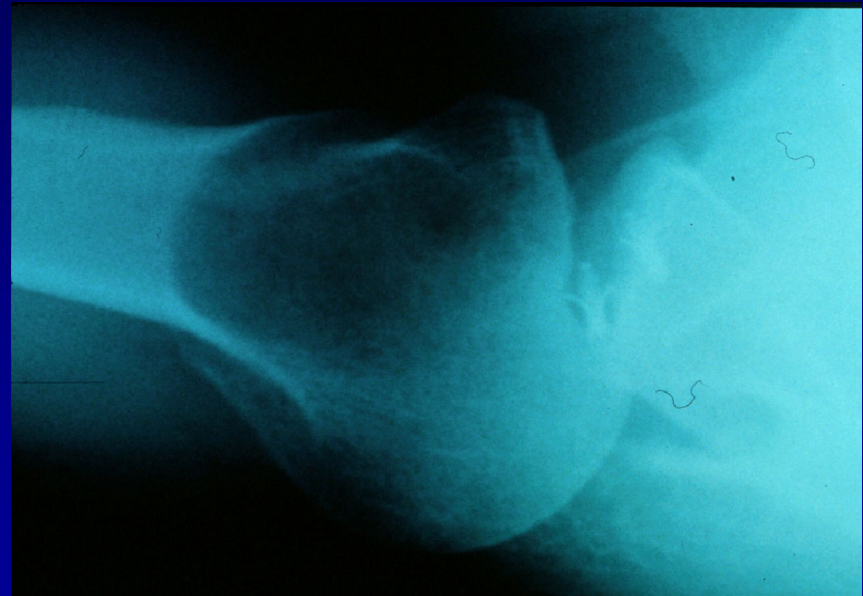
Shoulder Instability: Imaging

- 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



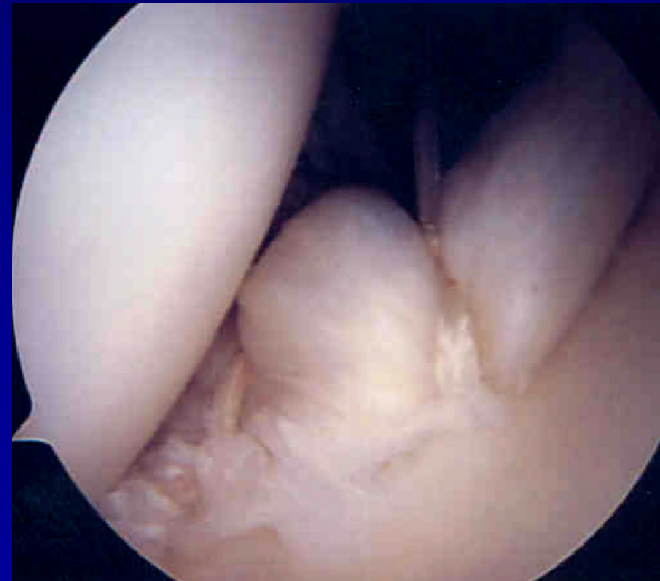
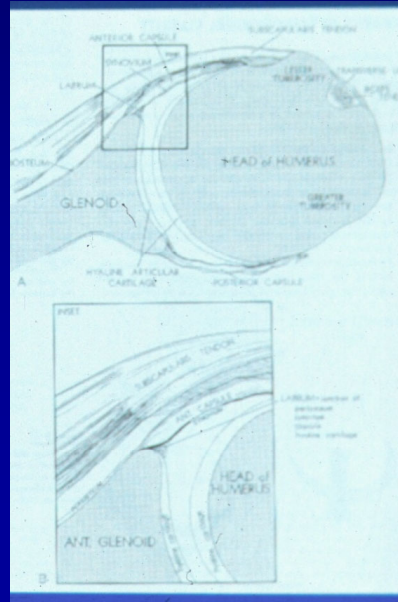
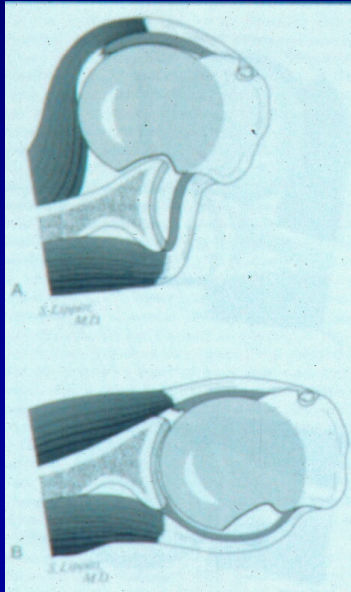
Management of Instability

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



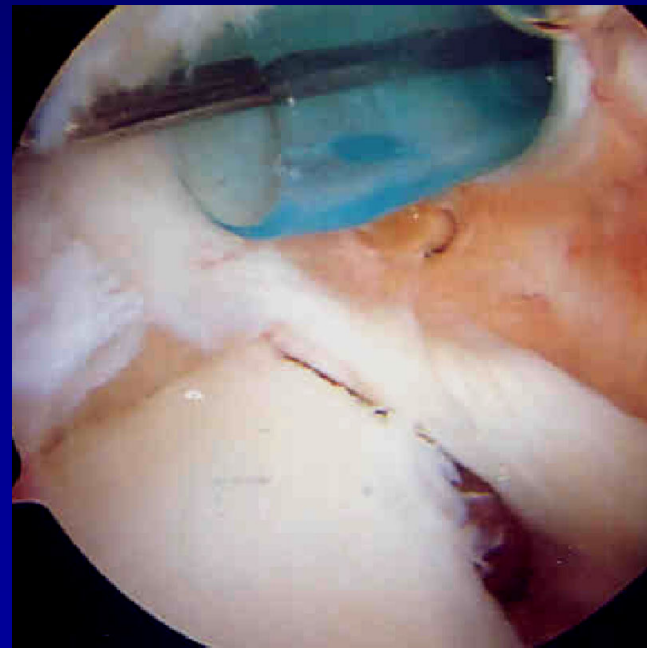
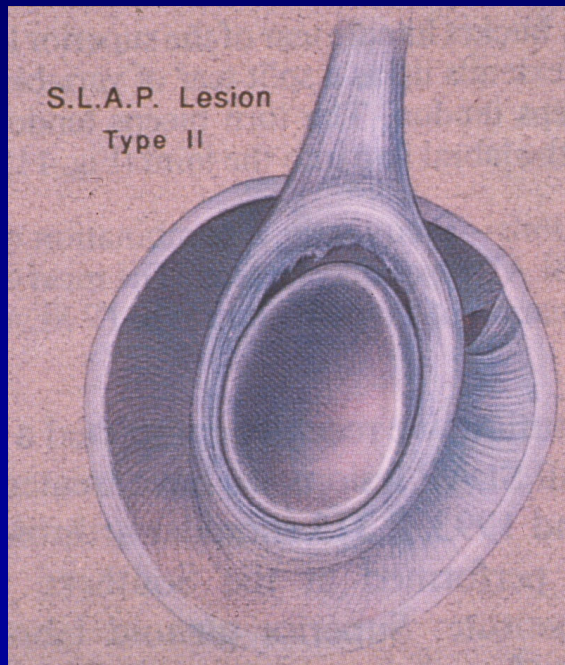
Management of Instability

- 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



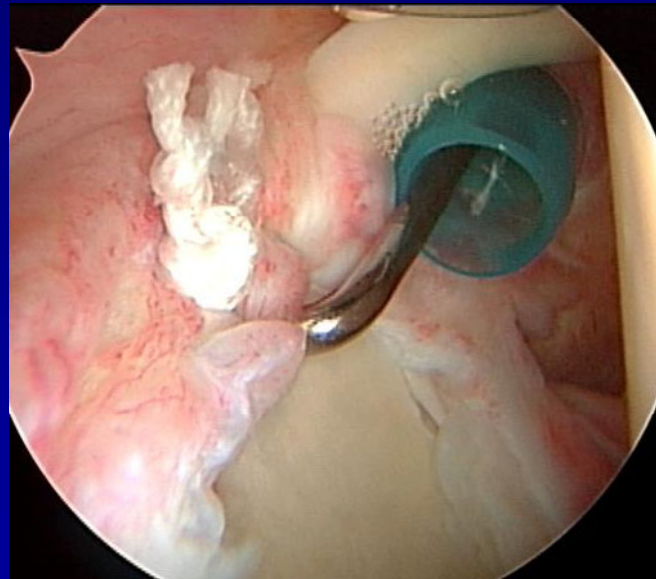
SLAP Diagnosis

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



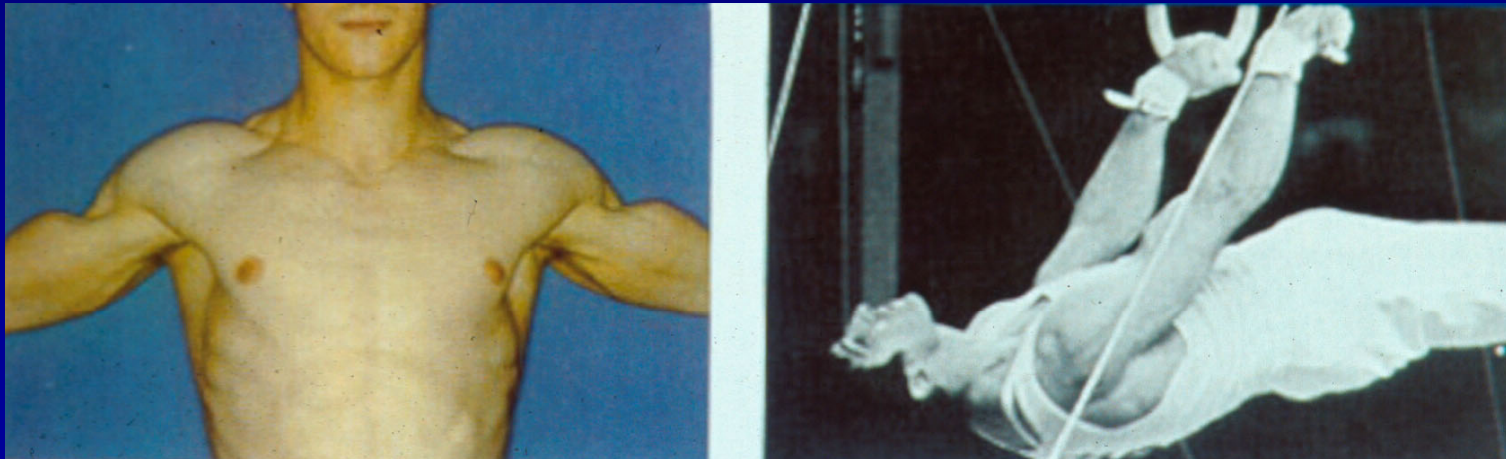
Treatment of SLAP Lesions

- 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

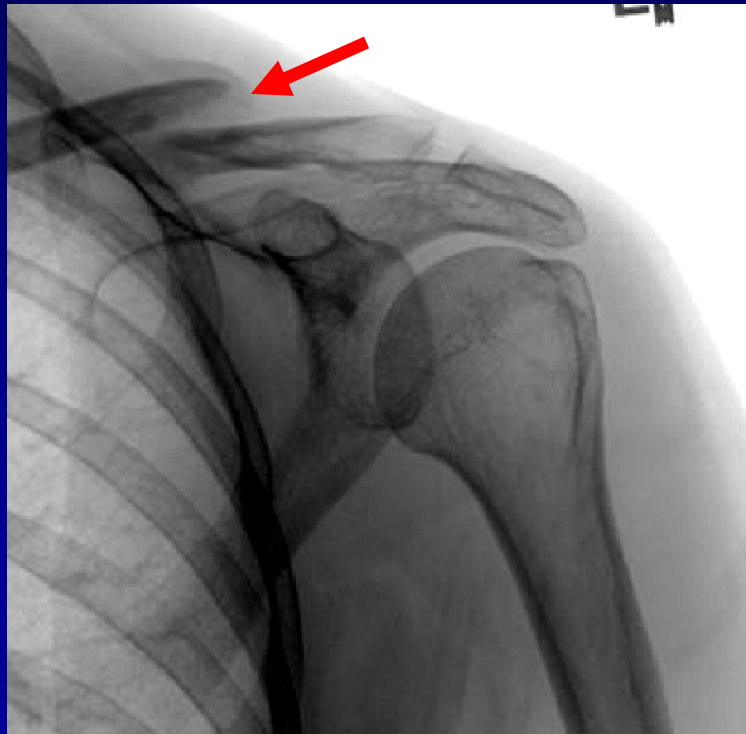


Treatment of Biceps Ruptures

- 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”

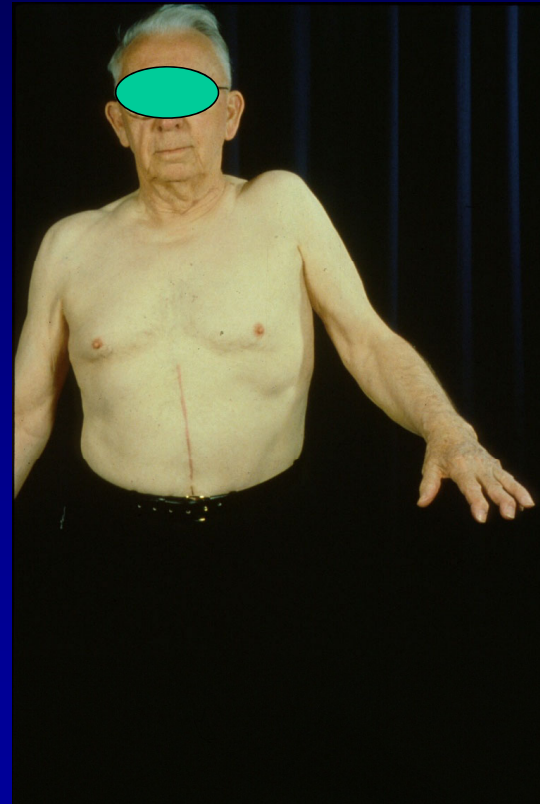
Shoulder: Fractures

- 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 true 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, not necessarily ROM



Elbow Pain

Anatomy is essential...



Lateral Epicondylitis: “Tennis Elbow”

- Hx: “My elbow hurts!”
- PE:
 - » Tender over lateral epicondyle
 - » pain with resisted wrist extension
- Tendinosis, not tendinitis
- Chronic degeneration
 - » overuse at ECRB



Tennis Elbow: Treatment

- NSAID's, forearm strap, wrist spint, ice
- Formal P.T.
 - » often aggravates condition
 - » stretching only initially!
- Injections
 - » often expedite resolution
- Recalcitrant cases
 - » surgical debridement
 - » less than 1% of cases



Medial Epicondylitis: “Golfer’s Elbow”

- Common flexor mass
- Pain with grasp, flexion
- Rx: same as tennis elbow



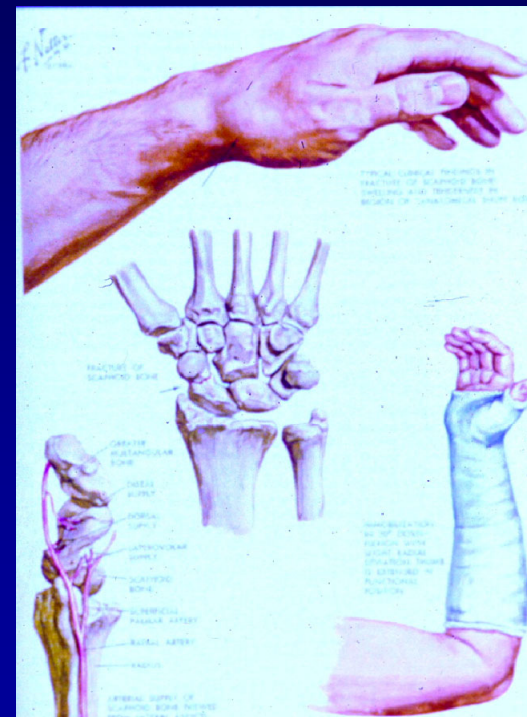
“Little League Elbow”

- Medial epicondylitis +/- avulsion of apophysis
- Capitellar OCD
- Valgus overload from repetitive microtrauma
- Limit throwing / cross-train
 - » must be pain-free with full ROM
 - » avoids extensive chondral injury



Wrist Pain

- X-rays for all trauma
- “Sprain”
 - » must r/o scaphoid fracture!
- If dx unclear ...
 - » place in thumb spica splint
 - » re-image in 10 days
- Refer to ortho



Carpal Tunnel Syndrome: History

- Numbness
- Weakness
- “Clumsiness”
- Can’t hold cup
- Worse in a.m.
- Median nerve distribution
 - » thumb, index, long



Carpal Tunnel Syndrome

- PE:
 - » Thenar atrophy
 - » hypesthesia thumb, index, long
 - » Tinel's sign
 - » Phalen's test
- EMG
- Night splints
- Refer - Role of surgery



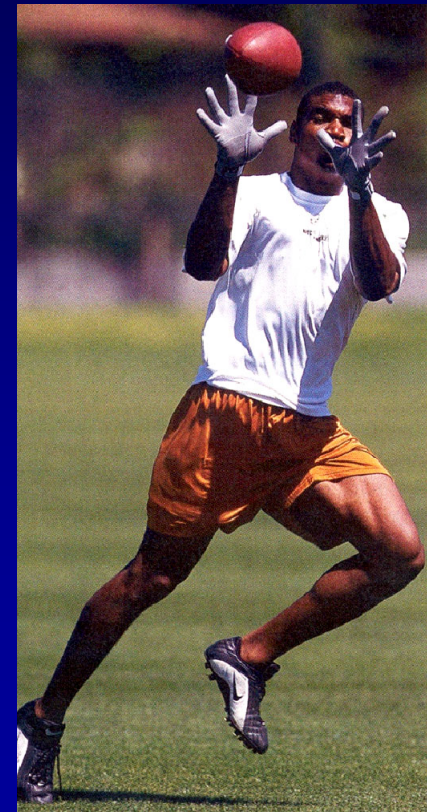
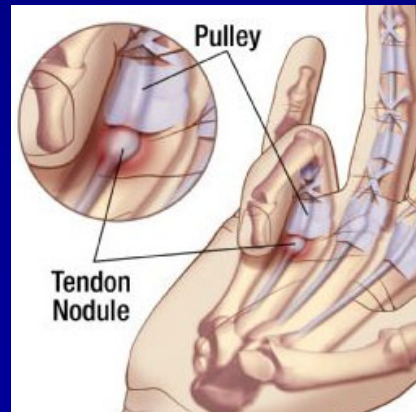
De Quervain's Tenosynovitis

- 1st dorsal extensor compartment
- APL, EPB
- Finkelstein's test
- Splint
- Injection



Hand

- Trigger finger
- Dupuytren's contracture
- PIP dislocation
 - » “rugger-jersey finger”
- Trauma
 - » xray
 - » splint
 - » “functional position”
 - holding a can



Thank You



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