

Common Orthopaedic Conditions of the Shoulder

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A PA's Guide to the Musculoskeletal Galaxy
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Disclosures

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The Shoulder - An Intern's View



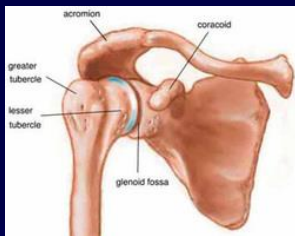
Introduction

- Shoulder anatomy
- Shoulder impingement
- Rotator cuff disease
- Labral injuries
- Shoulder dislocations
- AC joint separations



Shoulder anatomy

- Three bones
 - ❖ Scapula
 - ❖ Humerus
 - ❖ Clavicle
- Joints
 - ❖ Glenohumeral
 - ❖ Acromioclavicular
 - ❖ Sternoclavicular
 - ❖ Scapulothoracic



Rotator Cuff

- Four muscles/tendons covering scapula
 - ❖ Supraspinatus
 - ❖ Infraspinatus
 - ❖ Subscapularis
 - ❖ Teres minor



Labral anatomy

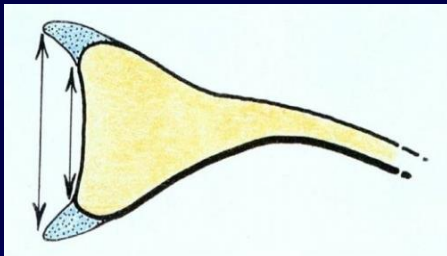
- Soft tissue sleeve surrounding glenoid
- Contiguous with joint capsule
- Clock face nomenclature
- LH Biceps attaches at 12 o'clock



Labral anatomy



Labral anatomy



Case #1

- 54yo RHD male avid tennis player presents with a 2 month h/o right shoulder pain
- Localized deep and lateral
- Increased with overhead serves
- Relieved by rest and NSAIDs



Case #1

- Exam reveals painful arc of motion in forward elevation and abduction
- Positive Neer and Hawkins signs
- Mild weakness in abduction and ER



Case #1



Case #1

- Diagnosis?



Impingement Syndrome

- Most common overuse problem in the shoulder in the overhead athlete
- Compression of subacromial bursa and/or rotator cuff tendons between humeral head and undersurface of the acromion
- Subacromial bursitis
- Rotator cuff tendinitis



Impingement Syndrome

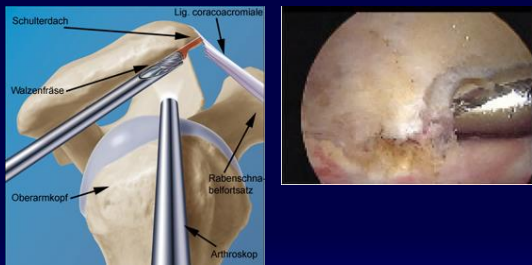


Impingement Syndrome

- Treatment
 - ❖ Rest
 - ❖ NSAIDs
 - ❖ Cortisone Injections
 - ❖ Physical therapy for RC strengthening
- Surgical decompression
 - ❖ Partial bursectomy
 - ❖ Acromioplasty

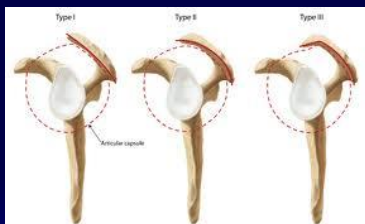


Subacromial Decompression



Impingement Syndrome

- Increased risk of rotator cuff disease

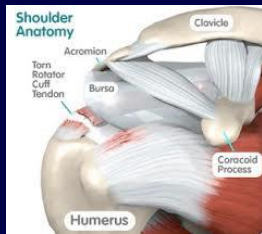


Rotator Cuff Tears

- Most often chronic, degenerative tears or acute-on-chronic presentations
- Initial symptom may be pain only
- Many have few symptoms
- Ultimately results in weakness as tear worsens and RC muscle atrophy occurs



Rotator Cuff Tears

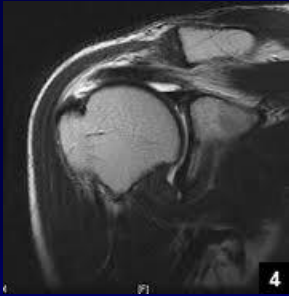


Rotator Cuff - Exam

- Painful ROM, especially ABER
- Positive Neer and Hawkins signs
- Weakness in ABER
- Drop arm sign
- ER lag
- Muscle atrophy
- Hornblower's sign



Rotator Cuff - MRI



Rotator Cuff Tears

- Initial treatment may be the same as that for subacromial impingement
- Many tears slowly progress and worsen
- Arthroscopic or open rotator cuff repair is often the treatment of choice
- Advanced RC disease often results in secondary glenohumeral DJD
- Rotator cuff arthropathy



Rotator Cuff Repair





Diagnosis?



Rotator Cuff Arthropathy



Rotator Cuff Arthropathy

- Growing problem
- Failed RC repair
- Neglected RC tear
- Loss of depressing force of cuff
- Superior migration of humeral head
- Deltoid shortens, becomes weak
- Pseudoparalysis



Rotator Cuff Arthropathy

- Conservative treatment
 - ❖ PT
 - ❖ Pain management
 - ❖ Cortisone injections
 - ❖ Activity modification
- Surgical Management
 - ❖ Reverse TSA
 - ❖ SCR



Reverse Shoulder Arthroplasty



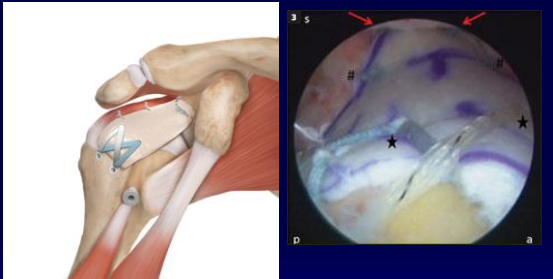


Superior Capsular Reconstruction

- Placement of ITB or dermal allograft
- Arthroscopic procedure
- Restores tether/fulcrum to prevent superior migration of humeral head
- Limited experience
- May reverse pseudoparalysis over time



Superior Capsular Reconstruction



Case #2

- 48yo RHD female community league softball pitcher presents with one year h/o intermittent right shoulder pain
- Localized deep and radiates down the front of her upper arm
- Aggravated by overhead reaching
- Relieved by NSAIDs



Case #2

- Exam reveals a positive O'Brien's test and slightly limited internal rotation
- Positive biceps load test
- No significant weakness
- Plain x-rays normal
- Any other studies?



Case #2



Case #2

- Diagnosis?

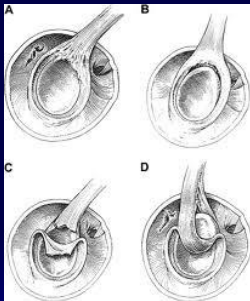


SLAP Lesions

- Superior Labral Anterior Posterior
- Common in overhead athletes
- Degenerative, attritional injury
- Labral tear of variable size at biceps anchor
- May involve a portion of the biceps



SLAP Lesions



SLAP Lesions



SLAP Lesions

- Conservative treatment includes rest, PT with ROM and terminal stretching exercises
- NSAIDs for pain
- Activity modification
- Most often result in arthroscopic repair
- Consider biceps tenodesis in Pts >40



SLAP Repair



Case #3

- 18yo high school football player is tackled, landing on his right extended arm
- Immediate deep pain
- Unable to move shoulder



Case #3



Case #3

- Diagnosis?



Glenohumeral Instability

- Loosely divided between traumatic and atraumatic etiology.
- Traumatic usually unidirectional
- Atraumatic usually multidirectional
- TUBS
- AMBRI



Glenohumeral Instability

- TUBS
 - ❖ Traumatic
 - ❖ Unilateral
 - ❖ Bankart lesion
 - ❖ Surgical management



Glenohumeral Instability

- AMBRI
 - ❖ Atraumatic
 - ❖ Multidirectional
 - ❖ Bilateral
 - ❖ Rehabilitation
 - ❖ Inferior capsular shift



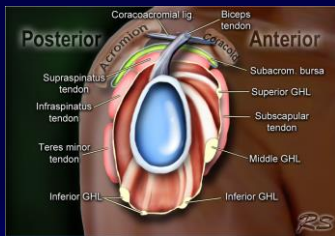
Glenohumeral Dislocations

- Very common injury in younger age groups
- Males (9:1)
- FOOSH
- ABER position
- Majority of traumatic dislocations are anterior/anteroinferior
- Posterior associated with epileptic seizures and electrocution



Glenohumeral Dislocations

- Anatomy review
 - ❖ Glenoid
 - ❖ Labrum
 - ❖ Capsule

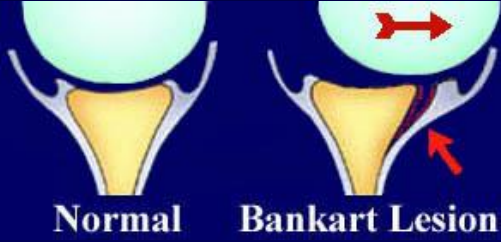


Glenohumeral Dislocations

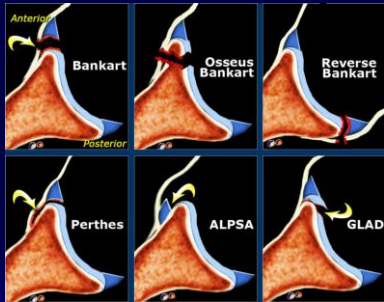
- Bankart lesion is nearly an “essential” injury in traumatic glenohumeral dislocation
 - ❖ Capsulolabral injury
 - ❖ Bony Bankart
- Hill-Sachs lesion is a frequent concomitant injury to posterior humeral head



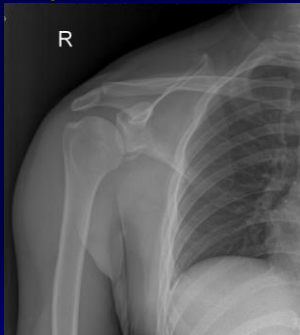
Glenohumeral Dislocations



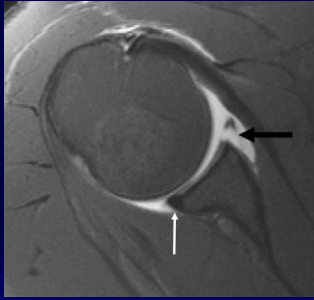
Bankart Lesion



Bony Bankart – X-Rays



Bankart - MRI



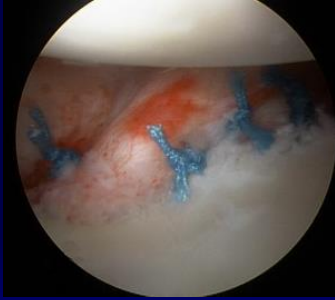
Bankart Lesion



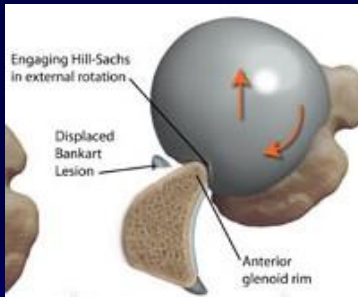
Bankart Repair



Bankart Repair



Hill-Sachs Lesion



Hill-Sachs Lesion



Glenohumeral Dislocations

- Examination
 - ❖ Sulcus sign
 - ❖ Prominent acromion
 - ❖ Limited AROM/PROM
- Imaging
 - ❖ Plain X-rays diagnostic (axillary view!)
 - ❖ MRI arthrogram shows Bankart
 - ❖ CT best for determining glenoid bone loss



Glenohumeral Dislocations



Glenohumeral Dislocations

- Management
 - ❖ Closed reduction under anesthesia
 - ❖ Sling immobilization
 - ❖ Pain management
 - ❖ PT/Rehabilitation
 - ❖ Surgery?
 - ❖ Recurrent instability



Glenohumeral Dislocations

- Recurrent instability
 - ❖ Rates of re-dislocation higher in young Pts
 - ❖ 67% of first time dislocators will have a second
 - ❖ 90% of two-time dislocators will have a third
- Some surgeons have recommended operative management of first time dislocators, especially young athletes



Recurrent Instability

- Age at first dislocation is most important factor in predicting recurrence
 - ❖ 15-20% in Pts older than 40 years
 - ❖ 60-80% in Pts 20-30 years old
 - ❖ 70-95% in Pts younger than 20 years old
 - ❖ Almost 100% in Pts with open growth plates

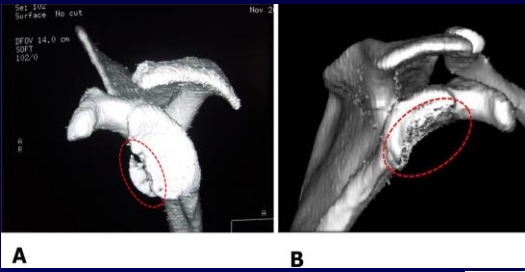


Recurrent Instability

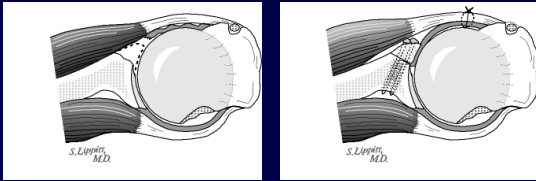
- Consider mechanism
- Beware of glenoid bone loss, especially in multiple time dislocators
- CT scan with 3D recons
- Most will require surgical management
- Bone augmentation
 - ❖ Latarjet
 - ❖ Bone graft



Recurrent Instability



Recurrent Instability



Multidirectional Instability

- Usually atraumatic
- Multiple subluxation episodes
- Often never required reduction
- “Loose-jointed”
- Positive sulcus/apprehension signs
- Management is PT, then PT, and more PT
- Inferior capsular shift or arthroscopic plication



Case #4

- 28 yoWM skier crashes into a house
- Notices pain and deformity at top of his right shoulder





Acromioclavicular separations

- Relatively common injury resulting from a direct blow to top of shoulder
- Bicycling
- Snowboarding



Acromioclavicular Separations



Acromioclavicular Separations

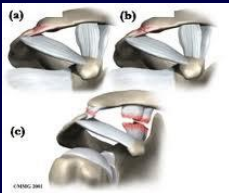
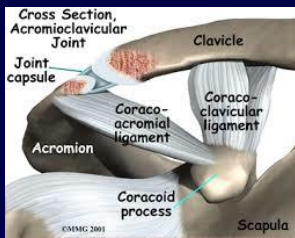
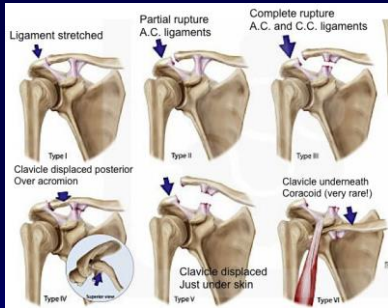


Figure 2.4 Ligament sprains
(a) Grade I (b) Grade II (c) Grade III



Acromioclavicular separations

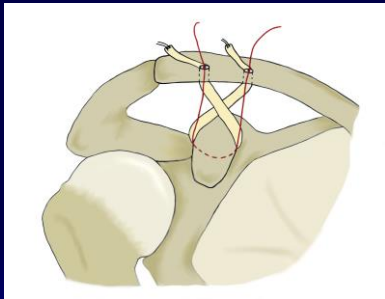


Acromioclavicular separations

- Grade of injury directs management
 - ❖ 1-2: Conservative
 - ❖ 3: Controversial
 - ❖ 4+: Operative
- Numerous procedures described
- Anatomic reconstruction of coracoclavicular ligaments is probably best



Acromioclavicular separations





Thank You!
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