A Simplified Approach to Common Shoulder Problems

Objectives:
- Understand the basic categories of common shoulder problems.
  - Understand the common patient symptoms.
  - Understand the basic exam findings.
  - Understand common imaging options.
- Understand the principles of non-operative treatment.
- Understand the potential surgical treatment.

Common Shoulder Problems:

**ROTATOR CUFF SYNDROME**
- Rotator Cuff Strain
- Rotator Cuff Tendonitis
- Partial-Thickness Rotator Cuff Tear
- Full-Thickness Rotator Cuff Tear

**INSTABILITY**
- Anterior Instability
- Posterior Instability
- Multidirectional Instability
- Labral Tears

**ADHESIVE CAPSULITIS**

**GLENOHUMERAL DJD**
ROTATOR CUFF SYNDROME
Spectrum of Pathology
RC Strain => RC Tendonitis/Bursitis => Partial-Thickness RCT => Full-Thickness RCT

Impingement Syndrome
(RC strain, RC tendonitis/Bursitis, Partial-thickness RCT)
- Irritability of the rotator cuff from trauma or chronic compression against the acromion
- Can also involve the biceps tendon leading to biceps tendonitis
- AC inflammation/AC arthrosis common associated condition
- Significant injury or persistent impingement can lead to Partial-Thickness RCT

Common Patient Symptoms:
- Ache or throbbing in shoulder or upper arm
- Night pain, often described as “toothache” in shoulder/upper arm
- Pain with reaching overhead, behind back, or to the side

Exam Findings:
- Pain with impingement signs
- Occasional crepitus due to bursitis
- Occasional pain over biceps tendon in bicipital groove

Imaging:
- AP, axillary, and outlet views show acromial morphology and assess AC joint for spurring.

Non-Operative Treatment:
- NSAID’s
- Physical Therapy => builds up strength and endurance to rotator cuff
- Corticosteroid injections => calms down inflammation of irritated tissue

Surgical Principles:
- Decompress the subacromial space (subacromial decompression) => opens the space available for the rotator cuff and biceps tendon, decreasing the compression
- Distal clavicle resection, if warranted => removes prominence of distal clavicle
- Arthroscopic SAD/DCR - Has become gold standard for surgical treatment
  - No deltoid detachment
  - Less invasive
  - Decreased AC destabilization
  - Less post-operative pain
  - Ability to detect other associated pathology

Full-Thickness Rotator Cuff Tear
- Can occur from trauma or chronic degeneration, often from impingement
- Opening in rotator cuff allows connection of glenohumeral joint to subacromial space
- Has no inherent ability to “heal”

Common Patient Symptoms:
- Ache or throbbing in shoulder or upper arm.
- Night pain, often described as “toothache” in shoulder/upper arm
- Pain with reaching overhead, behind back, or to the side
- Weakness
- Clicking or grinding with motion
Exam Findings:
- Pain with impingement signs
- Occasional crepitus, especially at 90 degrees abduction
- Weakness with rotator cuff testing

Imaging:
- Arthrogram will give “yes” or “no” answer
- MRI will allow for evaluation of size of the tear, amount of retractions, and any possible atrophy of muscle belly

Non-Operative Treatment:
- NSAID’s
- Physical Therapy => builds up strength and endurance of any remaining rotator cuff
- Corticosteroid injections => calms down inflammation of irritated tissue
- Non-operative treatment only treats the pain, not the problem

Surgical Principles:
- Re-attach torn end of rotator cuff tendon
- Decompress subacromial space to prevent continued impingement
- Arthroscopic versus mini-open repair depending on location and orientation of tear

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INSTABILITY

- Anterior instability and posterior instability are most often from trauma
- Multidirectional instability is most often developmental
- Superior labral tears (SLAP tears) can be traumatic or degenerative

Anterior Instability
- Primary event is often a sports injury or fall => anterior dislocation resulting in anterior labral tear (Bankart lesion) and capsular injury
- Persistent labral deficiency and capsular redundancy leads to instability

Common Patient Symptoms:
- Recurrent dislocations or subluxations
- Pain from secondary impingement
- Sense of instability with overhead activities

Exam Findings:
- Positive anterior glide test
- Positive apprehension test
- Positive relocation test
- Positive anterior load-shift test

Imaging:
- MR Arthrogram best to evaluate subtle labral irregularities

Non-Operative Treatment:
- Physical therapy can improve dynamic stability which MAY decrease frequency of dislocations or sense of instability

Surgical Principles:
- Surgery reserved for patients with persistent instability despite non-operative treatment
- Re-establish labral “bumper”
- Plicate the capsule
Multidirectional Instability
- Often related to generalized laxity
- Labrum usually intact, but capsule and ligaments lax

Common Patient Symptoms:
- General sense of looseness
- Dislocations can occur
- Secondary impingement pain common due to irritation of the rotator cuff which is attempting to stabilize shoulder

Exam Findings:
- Generalized laxity in all directions
- Positive sulcus sign
- Apprehension test and relocation test often negative

Imaging:
- MR Arthrogram can help rule out labral tear

Non-Operative Treatment:
- Physical therapy to help provide dynamic stability
- Corticosteroid injections can help relieve the associated impingement pain
- If physical therapy fails => try more physical therapy!!

Surgical Principles:
- Only indicated for persistent instability despite long-standing therapy
- Increase labral height and tighten the capsule through plication

SLAP Tears
- Superior Labrum Anterior to Posterior tears
- Can be from trauma => traumatic pull on biceps
- Can be from micro trauma => common in throwing athletes
- Can be from degeneration => associated with impingement

Common Patient Symptoms:
- Pain with overhead activities
- Clicking, especially with rotation
- Pain with throwing

Exam Findings:
- Many, many examination tests described, all with variable sensitivity and specificity
- Generally accepted tests:
  - Pain with O'Brien's test
  - Pain with Crank test
  - Pain with Speed's test

Imaging:
- MR Arthrogram is the gold standard => contrast extends under superior labrum

Non-Operative Treatment:
- Physical therapy may help => improves shoulder mechanics
- Corticosteroid injection may help if impingement is large contributor to pain
- Surgical treatment is usually necessary for complete resolution of symptoms

Surgical Principles:
- Debride labral fragmentation
- Repair unstable biceps anchor
ADHESIVE CAPSULITIS

- Capsular inflammation eventually leads to capsular contraction leading to motion deficits and pain
- Very common in diabetic patients
- Can occur after trauma, even minor trauma

**Common Patient Symptoms:**
- Stiffness
- Pain with overhead activities
- Pain with any sudden movements => positive “startle” pain

**Exam Findings:**
- Range of motion deficits, especially internal rotation
- Pain at the extremes of motion

**Imaging:**
- AP, axillary, and outlet views of the shoulder help rule out underlying arthritis as source of pain and stiffness

**Non-Operative Treatment:**
- NSAID’s
- Physical therapy
- Corticosteroid injection into subacromial space

**Surgical Principles:**
- Manipulation under anesthesia can regain motion by tearing the capsule => aggressive post-op physical therapy then maintains motion
- Arthroscopic anterior capsulectomy with synovectomy

GLENOHUMERAL DJD

- Can be post-traumatic or degenerative
- Progressive deformity => humeral head flattening, loss of joint space, spurring

**Common Patient Symptoms:**
- Stiffness
- Pain with overhead activities
- Clicking or grinding
- Occasional weakness

**Exam Findings:**
- Motion deficits
- Pain with overhead movement
- Crepitus, especially with external rotation

**Imaging:**
- AP, axillary and outlet views of the shoulder provide an excellent evaluation of the glenohumeral joint
- MRI helpful if associated rotator cuff tear suspected

**Non-Operative Treatment:**
- NSAID’s
- Physical therapy
- Corticosteroid injections
- Viscosupplementation

**Surgical Principles:**
- Arthroscopic debridement can help if mechanical symptoms predominate
- Shoulder replacement surgery (hemiarthroplasty vs. total shoulder replacement) if pain interferes with ADL’s
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Take Home Message:
- Try to categorize diagnosis based on history and patient symptoms.
- Use exam to confirm category and help define specific diagnosis.
- Start with non-operative treatment.
- Use imaging if symptoms persist to define/confirm the specific diagnosis.
- Continue non-operative treatment or proceed to surgical treatment if appropriate.
- Full-thickness rotator cuff tears and labral tears will require surgical treatment if symptomatic =>
  non-operative treatment can improve symptoms, but not likely resolve them.