Common Problems of the Shoulder

UCSF Essentials of Women’s Health
July 9, 2015
Carlin Senter, M.D.

I have nothing to disclose
At the end of this hour you will know

1. The differential diagnosis for patients with decreased AROM and PROM of shoulder.
2. The key difference between impingement syndrome and rotator cuff tear.
3. The indications for non operative vs operative treatment for rotator cuff tears.
4. When to be concerned about a SLAP tear.

Musculoskeletal work-up

- History
- Inspection
- Palpation
- Range of motion
- Other Tests
## Shoulder pain differential diagnosis

<table>
<thead>
<tr>
<th>Shoulder pathology by symptoms</th>
<th>Shoulder pathology by age</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Night pain—impingement</td>
<td>• &lt;30—think instability/labral tear</td>
</tr>
<tr>
<td>• Weakness—RTC tear</td>
<td>• 30-50—impingement/biceps</td>
</tr>
<tr>
<td>• Instability/popping—Labral tear</td>
<td>• &gt;50—RTC tears/adhesive capsulitis</td>
</tr>
<tr>
<td>• Stiffness—OA/Adhesive Capsulitis</td>
<td>• &gt;70—shoulder arthritis</td>
</tr>
<tr>
<td>• Pain past elbow—Cervical spine</td>
<td></td>
</tr>
</tbody>
</table>

*Slide courtesy of Brian Feeley, MD.*

## Shoulder examination

- **Inspection**
- **Palpation**
- **ROM**
  - Abduction
  - Forward flexion
  - ER
  - IR
- **Strength**
  - Supra
  - Infra and teres minor
  - Subscapularis
- **Other tests**

[http://www.aafp.org/afp/20000515/3079.html](http://www.aafp.org/afp/20000515/3079.html)
Case #1

50 y/o RHD woman with DM2 presenting with R shoulder pain. No injury. Waking up at night during sleep. Shoulder feels very stiff, having trouble reaching behind and raising above head.

Exam: no muscle atrophy; nontender clavicle, biceps tendon, AC joint.

Range of motion

Abduction

Flexion
Range of motion

External rotation

Internal rotation

Supine shoulder PROM

External rotation

Internal rotation
Physical exam: (+) shrug sign

Unable to lift the shoulder so uses entire shoulder girdle to abduct and FF.


Physical examination: PROM

Forward flexion  Abduction

http://www.youtube.com/watch?v=p521dSVqyjo
Case #1: 50 y/o woman with DM2 and R shoulder pain with limited active and passive range of motion.

A. Adhesive capsulitis  
B. Rotator cuff tear  
C. Impingement syndrome  
D. Glenohumeral joint osteoarthritis

Shoulder: diagnosis driven exam

- Active ROM
  - Normal
  - Decreased

- Passive ROM
  - Normal
  - Decreased

- X-ray
  - Normal
  - Abnormal

- Frozen shoulder

- Impingement
  - RC tear
  - Labral tear
  - Biceps tendinitis
  - AC joint OA

- GH joint OA
Shoulder x-rays

• Evaluate etiology of decreased passive and active ROM

Weighted abduction: diagnose glenohumeral joint OA

X-rays courtesy of Ben Ma.
Adhesive capsulitis

Associated with

- Diabetes
- Hyper and hypothyroidism
- Hypoadrenalism
- Parkinson’s disease
- Cardiac disease
- Pulmonary disease
- Stroke
- Surgery (cardiac, cardiac cath, neurosurgery, radical neck dissection)
Adhesive capsulitis is a clinical diagnosis

• No need for MRI
• Xrays helpful to r/o GH joint OA

Active ER key finding
3 stages of adhesive capsulitis

- Freezing
  - 3-9 months
  - ↑ pain
  - ↓ ROM
  - Pain at rest, sleep

- Frozen
  - 4-12 months
  - ↓ pain
  - Stable, decreased ROM

- Thawing
  - 12-42 months
  - Gradual ↑ ROM

Resolution
- Average time to resolution: 1-3 years

Treatment for adhesive capsulitis

- Pain control: NSAIDs, oral or injected corticosteroids (either in GH joint or subacromial bursa)
  - Does not change disease course
  - Does help significantly with pain control
- +/- physical therapy to help restore ROM
- Capsular distention injections
- Surgery
  - Manipulation under anesthesia
  - Arthroscopic release and repair

Case #2

57 y/o RHD woman presents with R shoulder pain that started after she slipped and fell 3 months ago. Pain at R deltoid. She tried physical therapy without benefit. Waking at night from sleep due to pain.

Differential diagnosis?
Rotator cuff disease in primary care

- The 3rd most frequent musculoskeletal reason patients present to the office
- The most common cause of shoulder pain in patients in the US primary care settings


What is rotator cuff disease?

- Impingement
- Tendinitis/tendinopathy
- Partial thickness tear
- Full thickness tear
Rotator cuff function

- Abduction
- External rotation
- Internal rotation
- Keeps humeral head depressed in glenohumeral joint during abduction

Rotator cuff disease treatment

Most do well with conservative treatment
- Impingement
- Tendinitis, tendinopathy
- Partial thickness tear
- Full thickness tear → Consider ortho referral.

PT +/- Injection +/- Medication
Rotator cuff surgery outcomes

Better if (acute) full thickness rotator cuff tears fixed earlier than later

- Smaller tear size associated with better outcome (Cofield RH et al. Surgical repair of chronic rotator cuff tears. JBJS 2001.)

- Less fatty infiltration and muscle atrophy associated with better outcome (Gladstone JN et al. Fatty infiltration and atrophy of the rotator cuff do not improve after rotator cuff repair and correlate with poor functional outcome. AJSM 2007.)

Shoulder: diagnosis driven exam

Active ROM
- Normal
- Decreased

Passive ROM
- Normal
- Decreased

Xray
- Normal
- Abnormal

GH joint OA

Frozen shoulder

Rotator cuff tear
Other rotator cuff dz
Labral tear
Biceps tendinitis
AC joint OA

OA
Physical exam maneuvers that increase likelihood of rotator cuff disease

1. Painful arc
2. Drop arm test

Pain test: Painful arc

If painful, positive LR 3.7 for RCD.
If not painful, negative LR 0.36 for RCD.

JAMA. Rational clinical exam: Does this patient have rotator cuff disease? Aug 2013.
Pain/strength test: Drop arm test

JAMA. Rational clinical exam: Does this patient have rotator cuff disease? Aug 2013.

Positive LR 3.3, negative LR 0.82 for rotator cuff disease.

Physical exam maneuvers that increase likelihood of full thickness rotator cuff tear

1. External rotation lag test
2. Internal rotation lag test

https://www.healthbase.com/hb/images/cm/procedures/orthopedics/rotator_cuff_tear.jpg
**Strength test:**
External rotation lag test

Examiner passively rotates the patient’s arm into full external rotation.

Positive test result: patient is unable to maintain a position of full external rotation.

JAMA. Rational clinical exam: Does this patient have rotator cuff disease? Aug 2013.

**Pain & Strength test:**
Subscapularis = internal rotation lag test aka ‘lift off’

Hand of affected arm is lifted off of back by examiner, and patient is asked to maintain position.

Positive test result: patient is unable to maintain the position.

JAMA. Rational clinical exam: Does this patient have rotator cuff disease? Aug 2013.
Case #2

57 y/o RHD woman presents with R shoulder pain that started after she fell 3 months ago. Pain at R deltoid. She tried physical therapy without benefit. Waking at night from sleep due to pain.

Exam: no atrophy. Nontender biceps, AC Joint. AROM symmetric bilaterally (forward flexion, external + internal rotation, abduction).

(+) painful arc, (+) drop arm, (+) ER lag, (+) IR lag

Diagnosis

A. Adhesive capsulitis
B. Rotator cuff tear
C. Impingement syndrome
D. Glenohumeral joint osteoarthritis
Shoulder: diagnosis driven exam

Active ROM
- Normal
- Decreased

Passive ROM
- Normal
- Decreased

Xray
- Normal
- Abnormal

GH joint
- OA

Rotator cuff tear
Other rotator cuff dz
Labral tear
Biceps tendinitis
AC joint OA

Frozen shoulder

Treatment
A. Refer for surgical consult.
B. Repeat trial of physical therapy.
C. 2 week trial of NSAIDs.
D. Give subacromial injection.
Rotator cuff tear more likely if...

- Older patient
- Traumatic mechanism
- Weak on exam

Rotator cuff disease treatment

Most do well with conservative treatment

- Impingement
- Tendinitis, tendinopathy
- Partial tear
- **Full thickness tear** → Consider ortho referral.

PT

+/- Injection
+/- Medication
Case #3

• 30 y/o RHD woman fell off bike 9 months ago, injured R shoulder
• Went to physical therapy but continues to have pain
• Deep, posterior shoulder pain
• Only feels pain if moves shoulder in certain directions quickly
• Does not wake her from sleep at night

Differential diagnosis
traumatic shoulder injury

• AC joint separation
• Labral tear
• Rotator cuff tear
• Shoulder dislocation
• Fracture
  – Humerus or clavicle
Physical examination

- No atrophy
- Tender biceps tendon, nontender AC joint
- AROM R shoulder
  - FF 0-170 with pain at top
  - Abd 0-170 with pain at top
  - ER 45, IR L1 (Same as L shoulder)
- (-) Painful arc, (-) drop arm, (-) ER lag, (-) IR lag
- (+) O’Brien’s test

What is the most likely diagnosis?

A. AC joint separation
B. Labral tear
C. Rotator cuff tear
D. Shoulder dislocation
E. Proximal humerus fracture
Glenoid labrum

- Superior Labrum Anterior to Posterior
  - Many different types, classifications
- Definitive diagnosis: MR arthrogram
- Treatment: physical therapy and if that doesn’t help then surgery
  - Debridement
  - Repair
- This is a disease of young people (do not consider as etiology for shoulder pain in most >40 y/o as labrum degenerates naturally)

SLAP tears
O’Brien’s Test  
To r/o Labral Tear

- Arm forward flexed to 90°
- Elbow fully extended
- Arm adducted 10° to 15° with thumb down
- Downward pressure
- Repeat with thumb up
- Suggestive of labral tear if more pain with thumb down
- Sens = 59-94%, Spec = 28-92%

At the end of this hour you will know

1. The differential diagnosis for patients with decreased AROM and PROM of shoulder.  
Adhesive capsulitis and Glenohumeral joint OA
2. The key difference between impingement syndrome and rotator cuff tear.  
   Patient with rotator cuff tear has weakness on exam
3. The indications for non operative vs operative treatment for rotator cuff tears.  
   Non op = partial thickness, full strength  
   Operative = full thickness (especially acute)
4. When to be concerned about a SLAP tear.  
   Patient < 40 y/o, acute injury, (+) O’Brien’s test
Thank you
Carlin Senter, MD
Carlin.Senter@ucsf.edu