PEARLS FOR UPPER EXTREMITY JOINT EXAMS

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Disclosures

None
Objectives

- Review pertinent anatomy of shoulder
- Improve diagnostic ability of common shoulder problems
- Understand role of MRI
Bony Anatomy
Anterior

- Acromion
- Clavicle
- Head of humerus
- Coracoid process
- Intertubercular groove (for long head of biceps muscle)
- Glenoid cavity
- Scapula
LABRUM
The Rotator Cuff Muscles: SITS

- **Supraspinatus**: Abduction
- **Infraspinatus**: ER
- **Teres minor**: ER
- **Suprascapularis**: IR

Depress humeral head against glenoid to allow full abduction
Other Anatomy

- Deltoid
- Rotator cuff
- Teres major
- Latissimus dorsi
- Biceps
- Pectoralis muscles
Shoulder Anatomy

Matsen Fig. 2-03
Exams
Physical Exam

Inspection

- Front & back
- Height of shoulder and scapulae
- Muscle atrophy, asymmetry
Physical Exam

Range of Motion

Abduction 0-180°
Physical Exam
Range of Motion

- Forward flexion:
  - $0^\circ$ – $180^\circ$
Physical Exam
Range of Motion

- **Internal rotation**
  - T7 segment

- **External rotation**
  - 60-90°
Physical Exam
Strength

- Empty can test
  - 30° angle
  - Steady downward pressure
  - Tests supraspinatus strength and pain
Physical Exam

Strength

- Resisted external rotation
  - Tests infraspinatus, teres minor strength
Physical Exam
Strength of Subscapularis

Liftoff test

Belly press test
Cross-Arm Adduction Test

- AC joint pathology
- Arm flexed to 90°
- Hyperadduct arm across body as far as possible
- Pain in AC = (+) test
Impingement Signs

Hawkins

Neer
Speed’s Test
Biceps Tendinopathy

- Long head of biceps tendonitis
- Fwd flex to 90°, abd 10°, full supination
- Apply downward force to distal arm
- Pain = (+) test
  - weakness w/o pain = muscle weakness or rupture
Apprehension Test

- Anterior instability
- Shoulder at 90° abducted, slight anterior pressure & External rotation
- (+) test = apprehension
  - some false (+)
Spurlings

Maximum Cervical Compression Test
List of Common Pathology

- Biceps Tendonitis
- Rotator Cuff Tear
- Impingement
- Bursitis
- AC joint Arthritis
- Multidirectional instability
- Adhesive capsulitis
Case

- 48 y/o F, on disability
- Right shoulder pain x 2 months after vacuuming in her house
- RHD
- Went to the ED because pain worsened
- In your clinic for follow up
Case continued

- Exam
  - No atrophy
  - FF 100
  - ER 40
  - IR T7
  - Abduction 80
  - 4/5 strength with empty can test
  - + Neer and hawkins test
Case Continued

- Diagnosis?
  - Rotator cuff tear

- Subacromial injection + physical therapy

- Comes back in 8 weeks still in pain. What now?
MRI

- Standard for imaging modalities
- Order after trial of conservative treatment
- Order non contrast studies
- Partial thickness vs Full thickness
Moving forward

Diagnostic accuracy of ultrasonography, MRI and MR arthrography in the characterisation of rotator cuff disorders: a meta-analysis

Jean-Sébastien Roy,¹,² Caroline Braën,²,³ Jean Leblond,² François Desmeules,³,⁴ Clermont E Dionne,¹,⁵ Joy C MacDermid,⁶ Nathalie J Bureau,⁷ Pierre Frémont¹,⁵

Conclusion: US is the best option when considering accuracy, cost and safety
Questions?