Evaluation of the adult with shoulder complaints – UpToDate: Part 1

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Shoulder pain

• Intrinsic

• Referred
Shoulder pain

• Intrinsic:
  – Injuries
  – Acute or chronic degeneration or inflammation
    • Shoulder joint
    • Tendons
    • Surrounding ligaments
    • Periarticular structures

• Referred
• An overview of common presentations and causes of shoulder discomfort and a basic clinical approach to diagnosis
ANATOMY AND BIOMECHANICS

• Complex anatomy:
  – Tremendous mobility, greater than any other joint in the body
• **3 Bones:**
  – Clavicle
  – Scapula
  – Proximal humerus

• **Four articular surfaces**
  – Sternoclavicular [SC]
  – Acromioclavicular [AC]
  – Glenohumeral
  – Scapulothoracic
Glenohumeral structures

• Loosely constrained
• Thin capsule bounded by surrounding muscles and ligaments
• Shallow depth of the glenoid and the limited contact between the glenoid and the humeral head (25%)
• Labrum, a fibrocartilaginous ring
• Primary static stabilizers:
  – Glenohumeral ligaments

• Primary dynamic stabilizer:
  – Rotator cuff
    • hold the humeral head within the glenoid ("socket") of the joint while enabling full mobility
Lateral view of shoulder anatomy

- Biceps tendon (long head)
- Acromion
- Supraspinatus muscle
- Glenoid fossa
- Infraspinatus muscle
- Teres minor muscle
- Subscapularis muscle
- Scapula
- Acromioclavicular joint
- Clavicle
- Coracoid process
- Glenohumeral ligaments:
  - Superior
  - Middle
  - Inferior (anterior band)
  - Inferior (posterior band)
Rotator Cuff Anatomy
Suprascapular nerve

Suprascapular neuropathy:

– Pain
– Progressive atrophy
– Weakened abduction and external rotation
Extraglenohumeral structures

• Shoulder motion is also dependent upon:
  – AC
  – SC
  – Scapulothoracic articulation

• **Coordination** between glenohumeral and scapulothoracic motion is particularly important for shoulder function.
Movements available: Scapulothoracic joint

(A) Elevation
(B) Depression
(C) Retraction
(D) Protraction
(E) Upward rotation
(F) Downward rotation
Long head of Biceps
• Pain from an injury to the plexus or related peripheral nerves from acute or chronic injury can present as shoulder pain.
HISTORY AND PAIN PATTERNS

• General approach:
  – Acute shoulder pain:
    • Traumatic: observation, gentle palpation, and plain radiographs.
    • No Trauma:
      – Extrinsic:
      – Intrinsic:
## Extrinsic causes of shoulder pain

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<thead>
<tr>
<th>Neurologic</th>
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<tbody>
<tr>
<td>Cervical nerve root compression (C5, C6)</td>
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<td>Suprascapular nerve compression</td>
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<td>Brachial plexus lesions</td>
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<tr>
<td>Herpes zoster</td>
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<td>Spinal cord lesion</td>
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<td>Cervical spine disease</td>
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<th>Abdominal</th>
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<tr>
<td>Hepatobiliary disease</td>
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<td>Diaphragmatic irritation (eg, splenic injury, ruptured ectopic pregnancy, perforated viscus)</td>
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<th>Cardiovascular</th>
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<td>Myocardial ischemia</td>
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<td>Axillary vein thrombosis</td>
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<td>Thoracic outlet syndrome</td>
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<th>Thoracic</th>
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<td>Upper lobe pneumonia</td>
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<td>Apical lung tumor</td>
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<td>Pulmonary embolus</td>
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• Once traumatic injury and potentially dangerous extrinsic causes have been excluded the clinician is generally faced with one of several common patterns of shoulder pain
• Intrinsic presentation:
  – Pain provoked by specific movement(s),
  – Stiffness or lack of flexibility
  – Weakness or loss of function
  – Instability
  – Combination of these symptoms
• A standard pain history (i.e., onset, duration, palliation/provocation, quality, location, and radiation)

• Activities that exacerbate symptoms either at work (e.g., lifting overhead, painting) or leisure (e.g., racquet sports, swimming)

• Previous injuries and treatment, including past surgery, and about comorbidities such as diabetes
• Anterolateral shoulder pain
• Posterior shoulder pain
• Poorly localized pain
Anterolateral shoulder pain

• The most common
• Impingement syndrome and the various stages of rotator cuff tendinopathy
• Adhesive capsulitis
• Labral tear
• Acromioclavicular (AC) joint
• Involvement of the glenohumeral joint
• Long head of the biceps
Posterior shoulder pain

• The least common
• Rotator cuff tendinopathy involving the external rotators
• Superior trapezius can be referred from the cervical spine
Poorly localized pain

• Often extrinsic
  – Neck
  – Abdomen
  – Heart
• Psychological overtones of cases under litigation or malingering
• Intrinsic pathology:
  – Large rotator cuff tears
  – Avascular necrosis of the humoral head
• Depressive illness
Trauma

• Mechanism:
  • Falls directly onto the shoulder:
    – AC Joint Injury
    – Clavicle fracture
  • Falls onto an outstretched arm:
    – Proximal humerus fracture
• Blunt trauma
• Generalized seizures
• Posttraumatic shoulder pain can also be referred from intra-abdominal injuries causing diaphragmatic irritation
• To avoid use of the shoulder in the interim leading to adhesive capsulitis.