Key points of imaging of the shoulder

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Imaging for Rotator cuff pathology

The AP active-abduction image is obtained with the patient holding a 1–2 lb weight in 45 degrees of abduction to better evaluate for humeral head migration and joint space narrowing. Patients with anterior-superior escape or dynamic instability will show very clear superior migration of the humeral head on this view.
Imaging for Rotator cuff pathology

- calcific tendinitis is more painful in resorptive phase
Imaging for **Rotator cuff pathology**

- In one cohort of patients, for patients with AHI less than 7 mm, 90% had a supraspinatus tear, 67% had an infraspinatus tear, and 43% had subscapularis tears.
- rotator cuff repair and
- **superior capsular reconstruction**
- increase AHI

**critical shoulder angle**
Imaging for Rotator cuff pathology

• Sonography
• MRI (Be careful about accuracy in subscapularis tendon tear)
Imaging for fracture management

- True AP should be in scapular plan (grashey view) for PHF
- The highest part of the GT is 8-10 millimeter lower than highest part of the Head
- In Hemiarthroplasty for fx management Divide GT, LT for Access

- Grasheyview Neer lateral (Y) Axillary view
Imaging for SC Joint management

• Heinig view
• Hobbs view
• Serendipity view

CT scan is modality of choice and should be obtained
Imaging for AC Joint management

• Innervation

suprascapular nerve
lateral pectoral nerve
Axillary nerve
Imaging in AC joint Pathology

• Zanca view 10” cephalic tilt
irritation to the AC joint produced pain over the AC joint, the anterolateral neck, and in the region in the anterolateral deltoid.

Stimulation within the subacromial space produced pain slightly more lateral, in the region of the lateral acromion and lateral deltoid muscle, but did not produce pain in the neck or trapezius region.

Imaging in AC joint Pathology

- The cross-arm adduction test
- Compression Test
- Paxino's test (thumb pressure at the posterior AC joint)
- O'Brien Test
- The **clinical triad** of point tenderness at the AC joint, pain exacerbation with **cross-arm adduction**, and relief of **symptoms by injection of a local anesthetic** agent confirm injury to the AC joint.

- Radiography
- MRI
- Bone scan
Imaging for Arthroplasty of the shoulder

Clinical evaluation first

- Patient selection for RSA.....age......DJD......impaired forward flexion
- Humeral prosthesis Height:
  - upper edge of pectoralis major tendon
  - finger test
  - telescopic movement test

Preoperative and postoperative Radiographic evaluation
Imaging for *instability* management

- Grashey view
- Neer lateral(Y)view
- Axillary view *(anterior translation ex: Resection of AC ligament)*
- Stryker notch view
- West point view
- Bernageau view
Imaging for **Instability** management

- **3D Ctscan**

- **MRI?**

  Old patient........Rc tear
  young patients........capsuloligamentus (HAGL,RHAGL)
  Evaluation of Glenoid track
Imaging for instability management
Imaging for *scapular dyskinesia* management

- **Scapular winging**
  - defined by the direction of the superomedial corner of the scapula

  - **medial scapular winging**
    - Etiology: dysfunction of the serratus anterior (long thoracic nerve)
    - Epidemiology: young athletic patient
    - more common than lateral

  - **lateral scapular winging**
    - Etiology: dysfunction of the trapezius (cranial nerve XI - spinal accessory nerve)
    - Epidemiology: usually iatrogenic (history of neck surgery)
Imaging for scapular dyskinesia management

- EMG, NCV

  Medial winging (serratus anterior muscle)
  - C5, C6, C7 injury
  - Long thoracic nerve injury

  Lateral winging (Trapezius muscle)
  - C1 to C5 (death)
  - Spinal accessory nerve injury
Imaging for Nerve injury management

• Sonography for the nerves

**Radial nerve** (enters from posterior Compartment to anterior compartment
10cm above radiocapitellar joint

**Ulnar nerve:**
Most common in flexion type supracondylar fx
Dysfunction after elbow relocation?
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