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Common Shoulder Disorders

Objectives:

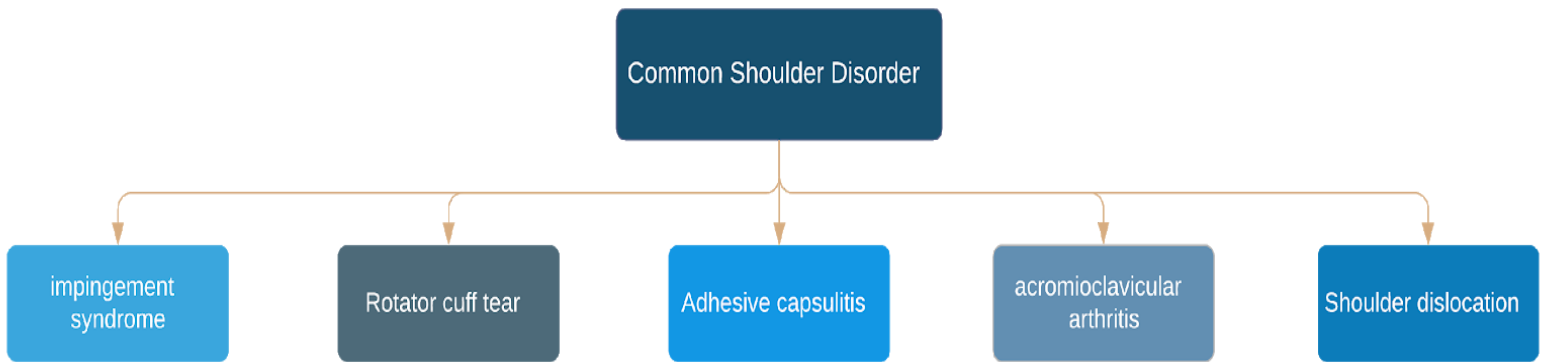
- Specify the symptoms, signs and potential immediate complications of common shoulder disorders
- Outline the assessment and appropriate investigation and to outline the immediate and long-term management of patients common shoulder disorders
- Demonstrate knowledge of indications for non-operative and operative treatment and to know the most common non-operative and operative measurements used for common shoulder disorders.

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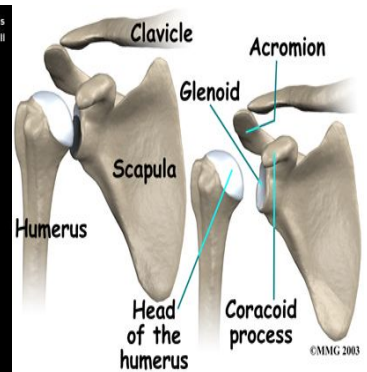
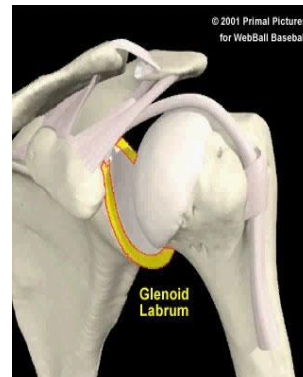
References: 435 Lectures and Notes(by moath baeshen), 433 Team.



Anatomy

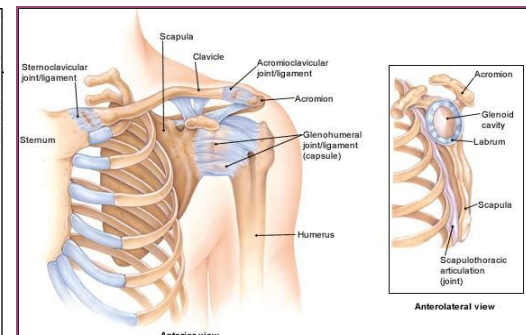
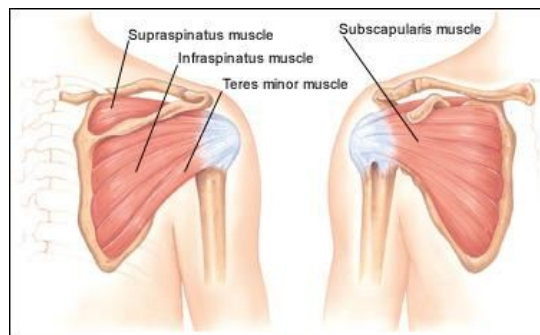
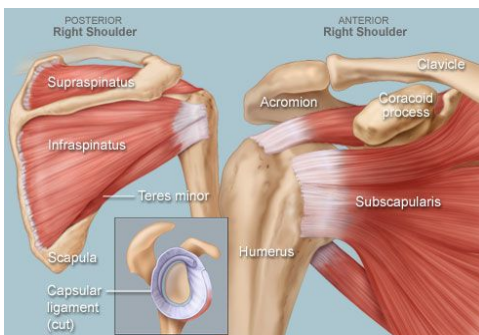
◆ Provides stability for the glenohumeral joint:

- The bones.
- Fibrous capsule.
- Ligaments.
- The negative pressure inside the capsule.
- Rotator cuff muscle.
- Glenoid labrum.



◆ Rotator cuff :

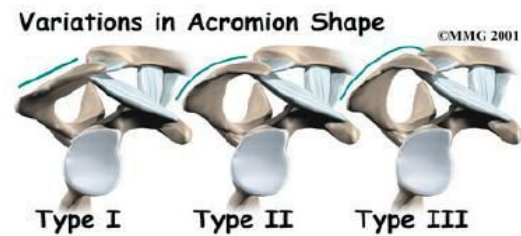
- Supraspinatus: initiate abduction
- Infraspinatus + teres minor: external rotation
- Subscapularis: internal rotation
- ✓ The function of the rotator cuff is to Keep the humeral head centered on the glenoid regardless of the arm's position in space.
- ✓ Generally, work to depress the humeral head while powerful deltoid contracts



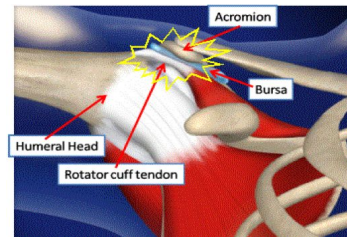
Impingement syndrome

Risk Factors

- Age: over 40 years.
- Overhead activities. like stacking ,basketball, lifting, swimming, tennis.
- Bursitis and supraspinatus tendinitis.
- Acromial shape: type II & III acromion (type 3 is the worst).
- AC arthritis or AC joint osteophytes may result in impingement and mechanical irritation to the rotator cuff tendons.
- Weak Rotator cuff (the deltoid is strong, and it pulls glenoid proximally; if the rotator cuff is weak, it'll be pulled upwards leading to supraspinatus impingement).



the Subacromial bursa is between the acromion and the rotator cuff tendons. Protects rotator cuff tendons from grinding against acromion. Pathology → irritation → thickening → subacromial space narrowing → further impingement



Symptoms

- Pain over the acromial are especially with Forward flexion and internal rotation
- Aggravated by lying on the affected side (cannot sleep on it).
- More at night.
- Affected by overhead activities.
- ↓ abduction.
- Weakness.

Physical examination

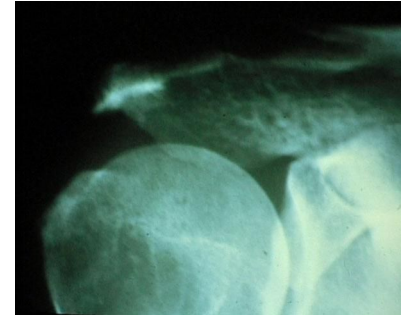
- Rotator cuff muscles atrophy.
- Decreased ROM → internal rotation and abduction.
- Weakness.
- Positive Neer's impingement sign, And Hawkins' impingement test.

Supraspinatous outlet View

(special x-ray view)

Radiological findings

- **X-rays:**
 - Acromial spurs.
 - AC joint osteophytes.
 - Subacromial sclerosis.
 - Greater tuberosity cyst.
- **MRI:**
 - Confirm dx.
 - Assess Rotator cuff integrity → tear.



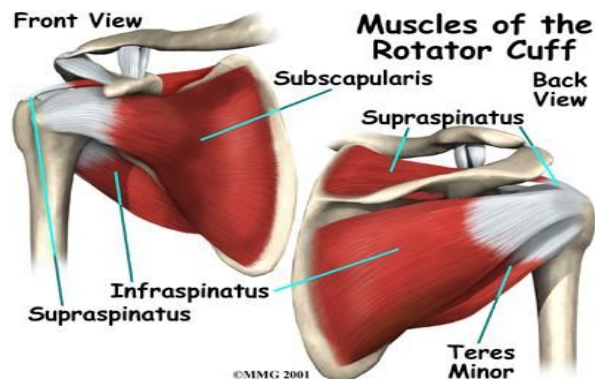
Management

- **Always start conservative:**
 - Avoid painful activities.
 - Physiotherapy.
 - NSAIDs.
 - Subacromial space steroid injection.
- Operative treatment indication: no improvement after 6- 12 months of conservative treatment.

Rotator cuff

❖ Causes of rotator cuff tears:

- **INTRINSIC FACTORS** (originate within the tendon):
 - Vascular.
 - Degenerative (age-related).
 - Overload.
- **EXTRINSIC FACTORS:**
 - Chronic impingement (Acromial spurs - AC joint osteophytes).
 - Repetitive use.
- **TRAUMATIC:**
 - Shoulder dislocation.
 - A fall or trying to catch or lift a heavy object.



Symptoms

- **Pain** is the predominant symptom Often most troubling at night and with overhead activities.
- Stiffness.
- Apparent or real muscle weakness.

(Partial tendon lesions are often much **more painful** than full thickness tears.)

Diagnosis by

- History.
- Physical examination.
- X-rays and MRI.
 - MRI is **the best** for evaluation Rotator cuff.

Supraspinatus



Jobe test

Infraspinatus



Subscapularis



Belly Press Test



Lift-off Test

Management

- **Always conservative, non-operative:**
 - Rest.
 - Physiotherapy.
 - NSAIDs.
 - Steroid injection.
 - If no improvement of 6 months, surgical repair (open or arthroscopic) is indicated.
- Indication for Operative:
 - Acute Traumatic tear.
 - Failed non- operative treatment.
- Most partial tears do not heal on their own.
- Partial tears progress to become larger rather than smaller with time.
- If not treated → chronic pain and loss of motion and with time becomes irreparable → rotator cuff arthropathy.
- Complications of surgery: not improving, stiffness.

Adhesive capsulitis

- It is characterized by **pain and restriction of all movements of the shoulder** . **severe shoulder pain + limited ROM in all directions first differential is adhesive capsulitis.**
- Usually self limiting typically begins gradually,worsens over time and then resolves but may take >2 years to resolve

Risk Factors

- **DM** (esp. insulin dependent).
- Hypo and Hyperthyroidism.
- Following injury or surgery to the shoulder.
- High cholesterol.

Clinical stages

1. Freezing stage (pain): **Pain is the hallmark of this stage with limited ROM (3-9 months).**
2. Frozen stage (stiffness): **ROM is more restricted in this stage with mild pain(4-12 months).**
3. Thawing stage(resolution): **Slow improvement (12-42 months).**

Diagnosis

Mainly clinical:

- Physical examination **A mechanical restraint to passive motion is the hallmark of adhesive capsulitis.**
- X-rays and MRI to rule out other pathologies.

Management

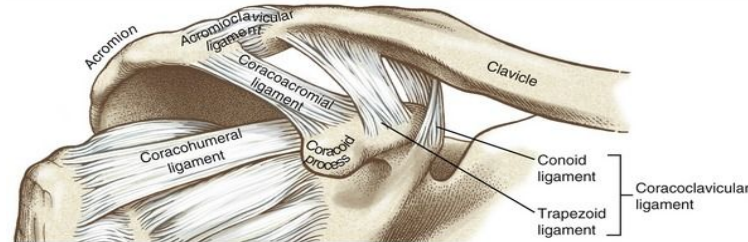
- **Resolves if untreated over 2-4 years but during this period, the patient lives in hell.**
- Physiotherapy.
- NSAIDs.
- Steroid injections.
- Manipulation under anesthesia.
- Arthroscopic capsular release.

Acromioclavicular Arthritis

- The AC joint is different from joints like the knee or ankle, because it doesn't need to move very much.
- The AC joint only needs to be flexible enough for the shoulder to move freely.
- The AC joint just shifts a bit as the shoulder moves.

➤ The joint is stabilized by three ligaments:

1. Acromioclavicular ligament.
2. Trapezius ligament.
3. Conoid ligament.



- **Arthritis** is a condition characterized by loss of cartilage in the joint, which is essentially wear and tear of the smooth cartilage which allows the bones to move smoothly.
- Motions which aggravate arthritis at the AC joint include reaching across the body toward the other arm.

Causes of AC Arthritis

- Degenerative osteoarthritis (wear and tear in old aged people).
- Rheumatoid Arthritis.
- Gouty Arthritis.
- Septic Arthritis.
- Atraumatic osteolysis in weight lifters. (result of repeated movements that wear away the cartilage surface found at the acromioclavicular joint).
- Post-traumatic osteolysis of lateral end of clavicle. (like dislocation or a fracture)

Symptoms

- Pain, which worsens with movement and progressively worsens.
- It is commonly associated with impingement syndrome.

Diagnosis by: clinical & X-rays

Management

- Non-surgical:
 - Rest, avoid weight lifting and push-ups.
 - Pain medications and NSAID to reduce pain and inflammation.
- Surgical:
 - Distal clavicle resection.

Shoulder dislocation

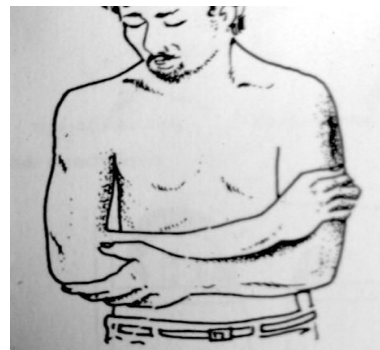
- **Mostly Anterior** > 95 % of dislocations occurs with 90 degrees abduction and external rotation. usually not pure anterior, rather inferoanterior
- Posterior Dislocation occurs < 5.
- True Inferior dislocation (luxatio erecta) occurs < 1%.

Mechanism of anterior shoulder dislocation

- Indirect: Usually it's indirect fall on Abducted and extended shoulder.
- Direct: when there is a blow on the shoulder from behind.
- **Bankart's Lesion:** A Bankart lesion is an injury of the anterior (inferior) glenoid labrum of the shoulder due to anterior shoulder dislocation. When this happens, a pocket at the front of the glenoid forms that allows the humeral head to dislocate into it. repaired through Bankart's procedure

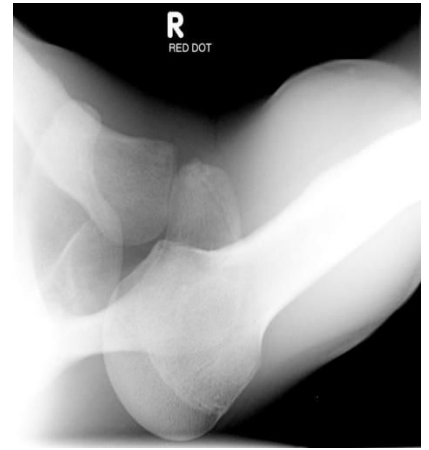
Clinical presentation

- Patient is in pain.
 - Holds the injured limb with other hand close to the trunk.
 - The shoulder is abducted, and the elbow is kept flexed.
 - There is loss of the normal contour of the shoulder.
 - The humeral head itself may well be palpable anteriorly.
- **Neurological assessment:**
- Injury of the Axillary Nerve.
 - It is a branch from posterior cord of Brachial plexus.
 - It hooks close round neck of humerus from posterior to anterior.
 - It pierces the deep surface of deltoid and supply it and the part of skin over it.
 - ask the patient to contract the deltoid + assess sensation over axillary nerve area (which is overlying deltoid).



➤ **Radiological evaluation:**

- obtain the axillary view also



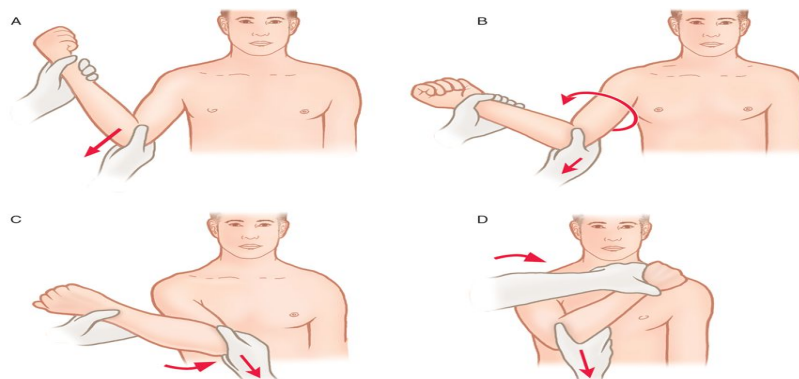
Management

- It is an **Emergency**.
- **Acute management :**
 1. R/O other injuries (ATLS).
 2. Clinical assessment.
 3. Neurovascular examination.
 4. X-ray :
 - a. AP+ Scapular Y+ Axillary views.
 - b. R/O fracture dislocation.
 5. Immediate reduction at ER.
 6. Re-check neurovascular.
 7. X-ray (you must confirm the reduction on Axillary view).
 8. Shoulder Immobilization.
 9. If no fracture → D/C home with analgesia and F/U at OPD.
- It should be reduced **in less than 24 hours** or there may be **Avascular Necrosis of head of humerus**.
- Following reduction the shoulder should be immobilized strapped to the trunk for 3-4 weeks and rested in a collar and cuff.

Methods of Reduction of anterior shoulder Dislocation

- There are many methods to reduce a shoulder dislocation.
 - Explain to the patient the procedure and the risks.
 - Analgesia.
 - +/- sedation. why sedate? since the patient is in pain, the muscle will be in spasm, so irreducible. you need the muscle relaxed to reduce.

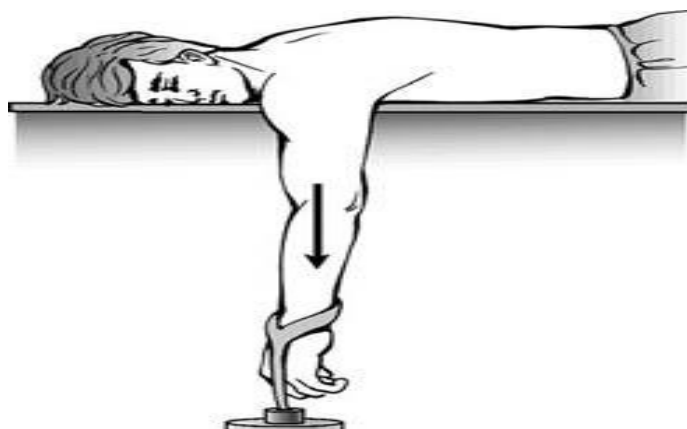
Kocher's technique is the method used in **hospitals** under general anesthesia and muscle relaxation. the 1st 2 steps are exaggerating the dislocation (to relax the muscles) then steps 3 and 4 are the reduction (adduction and elevation then internal rotation).
video([Click here](#))



Hippocrates Method (A form of anesthesia or pain abolishing is required).
video ([click here](#))



Stimpson's technique (some sedation and analgesia are used but No anesthesia is required).
video ([click here](#))



Complications

Complications of anterior Shoulder Dislocation

Early	Late
<p>Neurovascular injury (rare). Axillary nerve injury. Associated Fracture of neck of humerus or greater or lesser tuberosities.</p>	<p>Avascular necrosis of the head of the Humerus (high risk with delayed reduction). Recurrent shoulder dislocations. the younger the age at which the dislocation happens, the higher the risk for recurrence.</p>