

Class 5 OAS Notes

Shoulder

Active movements

1. Elevation through abduction is 170-180 degrees, (180 degrees)
 - a. Glenohumeral – 80 degrees
2. Elevation through forward flexion is 160-180 degrees, (180 degrees)
 - a. Glenohumeral – 80 degrees
3. Lateral (External) rotation is 80-90 degrees, (90 degrees or greater)
4. Medial (Internal) rotation is 60-100 degrees, (80 degrees or greater)
5. Extension is 50-60 degrees, (50 degrees or greater)
6. Adduction is 50-75 degrees, (50 degrees or greater)
7. Horizontal adduction is 0 to 135 degrees
8. Horizontal abduction 0 to 45 degrees
9. Scapular protraction
10. Scapular retraction
11. Apley's scratch test - one hand behind back other behind shoulder, touch fingers behind back. Right arm in lateral rotation and abduction, left arm in medial rotation and adduction. (Then reverse)

Passive movements

1. Elevation through abduction – bone to bone or tissue stretch
2. Elevation through forward flexion – tissue stretch
3. Lateral (External) rotation – tissue stretch
4. Medial (Internal) rotation – tissue stretch
5. Extension – tissue stretch
6. Adduction – tissue approximation
7. Horizontal abduction and adduction – tissue stretch

Resisted isometric movements

1. Flexion
2. Extension
3. Abduction
4. Adduction
5. Medial rotation
6. Lateral rotation
7. Flexion of elbow
8. Extension of elbow

Special tests

Shoulder instability (glenohumeral joint) – [anterior \(the most common\)](#), [posterior](#), [inferior](#), [multidirectional](#). Soft tissue of the glenohumeral joint allows humeral

head to move out of the glenoid fossa (**translation – movement**)– subluxation, dislocation. Activity limiting event. Patient experiences **apprehension**, pain, subluxations and/or dislocations.

Multidirectional instability is fairly common, **usually bilateral and atraumatic**. Caused by generalized capsular laxity, and also laxity of ligaments. Increased freedom in all direction with either anteroinferior or posteroinferior predominance. Patient will present with complaint of painful or sore shoulder, which worse with certain activities or positions of the arm, some can complaint of popping in and out of the bone, Catching, locking. Rest relieves the symptoms.

1. Anterior shoulder instability

- a. **Load and shift test** – anterior and posterior instability. Patient sits with the back support and tested arm resting on the thigh. Examiner with one hand stabilizes shoulder with other grasp head of the humerus pushes in and then attempts to slide anteriorly and **qvv** posteriorly. Translation less than **25%** anteriorly of the humeral head is normal. Posterior – **50%** translation of humeral head diameter is normal.
- b. **Apprehension (Crank) test and relocation test** – arm abducted to 90 degrees and elbow flexed 90 degrees, slowly laterally rotate patients arm. Positive – apprehension of the patient during rotation. Relocation – push on shoulder to keep it in.
- c. Rockwood test for anterior instability – patient seated; examiner stand behind patient. Examiner laterally rotates the shoulder; Arm is then abducted to 45 degrees and passive lateral rotation is repeated. The same is done at 90 and 120 degrees. Positive test – apprehension at 90 degrees.
- d. Rowe test for anterior instability - patient supine and places hand behind the head. Examiners one hand is against posterior humeral head and pushes up while extending arm slightly. Positive – apprehension.
- e. Fulcrum test – patient supine, with arm abducted to 90 degrees, examiners one arm under the joint, other extends and laterally rotates the arm. Positive – look of apprehension by patient.
- f. **Prone anterior instability test** - side of the table (tested shoulder of the table), patient in prone position. Patient arm abducted to 90 degrees examiner pushes down (forward) on humeral head. Positive – reproduction of patient's symptoms.
- g. **Anterior drawer test of the shoulder** - Patient in supine position. Examiner holds patients' arm at different abduction angles, 30 degrees, 60 degrees, abducts the patient shoulder between the 80 and 120 degree, forward flexed up to 20 degree, laterally rotated up to 30 degree. Examiner then stabilize the patient's scapula with the opposite hand by pushing the spine of the scapula with index and middle fingers, while

applying counterpressure on patient's coracoid process with the thumb. Draws the humerus forward (anteriorly) using the hand that is holding patient's arm. Positive test indicates the anterior instability decided by the amount of anterior translation which is accessible comparing with the normal side.

- Performed at the same time for anterior and posterior instabilities (See posterior drawer test)

2. Posterior shoulder instability

- a. **Load and shift test**
- b. **Posterior apprehensions stress test** – patient supine, arm at 90 degrees flexion, elbow flexion, and shoulder medial rotation. Examiner pushes down on shoulder. Positive – look of apprehension or alarm.
- c. **Push-pull test** - patient supine, arm at 90 degrees abduction, 90 degrees elbow flexion. Examiner pulls on hand (holding just below the wrist) and push down on the head of the humerus or proximal anterior arm. If more than 50% translation is present or patient becomes apprehensive – positive test.
- d. **Norwood stress test for posterior instability** – patient supine with shoulder abducted 60 to 100 degrees and laterally rotated 90 degrees and 90 degrees elbow flexion. Examiner stabilizes scapula with one hand and brings the arm into the forward flexion. Positive test – humeral head slips posteriorly.
- e. **Posterior drawer test of the shoulder** – patient supine, patient's elbow flexed to 120 degrees and arm at different abduction angles, 30 degrees, 60 degrees, or 80 to 120 degrees abduction and 30 degrees flexion. Examiner with one hand rotates forearm medially and with other hands pushes head of the humerus posteriorly.

3. Inferior shoulder instability

- a. **Sulcus sign** – patient stand or sits with arm by the side, elbow flexed. Examiner pushes down on forearm (Variation – pulling on forearm that is next to the body). Positive – sulcus (depression) under acromion.
- b. **Feagin test** – modified sulcus test. Arm at 90 degrees abduction with elbow extended resting on examiner's shoulder. Examiner with both hands pushes on patient's humerus between upper and middle thirds down and forward. Positive tests – look of apprehension.

4. Multidirectional instability

- a. **Rowe test for multidirectional instability** – patient stands forward flexed 45 degrees arm hanging relaxed. Examiner's one hand's middle and index fingers are over anterior humeral head and thumb over posterior.

Examiner pulls the arm slightly with other hand. Pushes head of the humerus anteriorly and posteriorly.

Chronic instability of the Shoulder joint

1. Due to previous trauma, hypermobility
2. 20-40 year of age
3. Gradual onset
4. Intense pain after activity
5. Carrying weight can give feeling that joint will slip
6. Observation – normal
7. AROM – normal, pain free
8. PROM – same, but combine movements may produce apprehension
9. RIM – normal
10. Palpation – normal
11. Special test - + load and shift, anterior or posterior apprehension, Sulcus test, Rowe multidirectional instability test

5. Impingement

Compression of soft tissue (tendon of supraspinatus) between acromion and head of the humerus/greater tubercle – can lead to bursitis and/or tendonitis

- a. **Neer impingement test** - The examiner should stabilize the patient's scapula with one hand, while passively and forcibly elevating the patient's arm while it is internally (medial) rotated. Greater tuberosity is jammed against acromion. Positive test – pain and indicates supraspinatus injury.
- b. **Hawkins-Kennedy impingement test** – examiner flexes patient arm to 90 degrees and then forcibly medially (Internally) rotates arm at shoulder. Positive test pain and indicates supraspinatus tendinitis. Also could be positive if there is ACJ damage and/or long head of biceps tendon pathology
- c. Reverse impingement sign – patient supine with arm abducted to 90 degrees and laterally rotated, elbow flexed. Examiner pushes on the head of the humerus inferiorly. Positive – reduction of symptoms.

6. Labral tears

Bankart lesion – traumatic detachment of the glenoid labrum. It is found in 85% of patient with anterior dislocation.

SLAP lesion – superior labral anterior and posterior tear, with SLAP there is usually also damage to the long head of the biceps

- a. **Clunk test** – patient supine, examiner's one hand is under patient's shoulder, examiner brings arm up into full abduction. Examiner's hand under shoulder pushes up while other hand moves arm in lateral rotation. Clunk or grinding indicates a positive sign.

- b. **Anterior slide test** – patient sitting with the hands on the waist. Practitioner pushes one elbow forward/and upward towards acromion, pop (clunk) or grind – SLAP lesion (labral lesion).
 - c. **Biceps tension test (Bicep's load test)** - The patient is in the supine position with the shoulder in 120 degrees of elevation and full external rotation, while the elbow is in 90 degrees of flexion, and the forearm in supination. The patient is then asked to flex the elbow as the clinician provides resistance. A positive test is defined as pain experienced during resisted elbow flexion or pain exacerbation during resisted elbow flexion
 - d. **SLAP Prehension test** - The patient is examined in sitting or standing positions. The arm is horizontally adducted across the chest with the elbow extended and the forearm pronated (thumb down). This may cause pain in the bicipital groove with or without an audible or palpable click. It should then be repeated with the arm supinated.
7. Scapular stability
- a. Lateral scapular slide test – determines stability of a scapula during humeral movements. Patient sits with arm at the side. Examiner measures distance from spinous processes T2-T3 to medial border of scapula and from T7-T9 to inferior angle of scapula. Patient is then abducting arm to 45, 90, 120, and 150 degrees and distance is measured. The difference should not be more than 1-1.5 cm.
 - b. Scapular assistance test - The examiner stands behind the patient, one hand on the superior boarder of the scapula of the involved shoulder with the fingers over the clavicle, and the other hand on the inferior angle of the scapula with the fingers wrapped laterally around the thorax. The examiner assists the scapula upwards rotation by pushing the inferior angle of the scapula upwards and laterally, and assists posterior tipping of the scapula by pulling the superior angle of the scapula posteriorly, while the patient actively elevates the arm. The test is positive if the symptoms of impingement decrease.
 - c. Scapular isometric pinch test - Isometric Scapular Pinch test: Patient in standing position and is asked to actively squeeze or retract the scapulae together as hard as possible. Normal Response: An individual able to hold the squeeze or 15 to 20 sec without any burning pain or noticeable weakness. Positive: Burning pain present.
8. Other tests
- a. **Acromioclavicular shear test** – Patient sitting, with arm either at the side of the body or at 90 abduction. Practitioner at the side of tested ACJ. Examiners one hand is over clavicle and another over spine of scapula.

Examiner squeezes hands together. Positive test – pain or abnormal movement in ACJ (acromioclavicular joint).

- **AC joint injury or irritation** – after falling on shoulder or outstretched arm
- **AC injury** – sharp pain on movements and dull ache during rest. Grating sound at the tip of the shoulder. On observation – step between clavicle and acromion. AROM – decreased abduction and lateral rotation. PROM – pain during abduction, decreased abduction. RIM – normal. Palpation – tenderness over ACJ. Special test – AC shear test positive
- **AC irritation** – gradual change, osteoarthritis, on palpation – thickening. + AC shear test