

Supraspinatus Tendinitis and Physical Therapy Management

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Supraspinatus tendonitis is an inflammation of supraspinatus tendon often associated with shoulder impingement syndrome. The impingement of the supraspinatus tendon leads to supraspinatus tendonitis, common site of the impingement occurs in under the acromion process and over the bursae.

Clinical Anatomy [1,2]

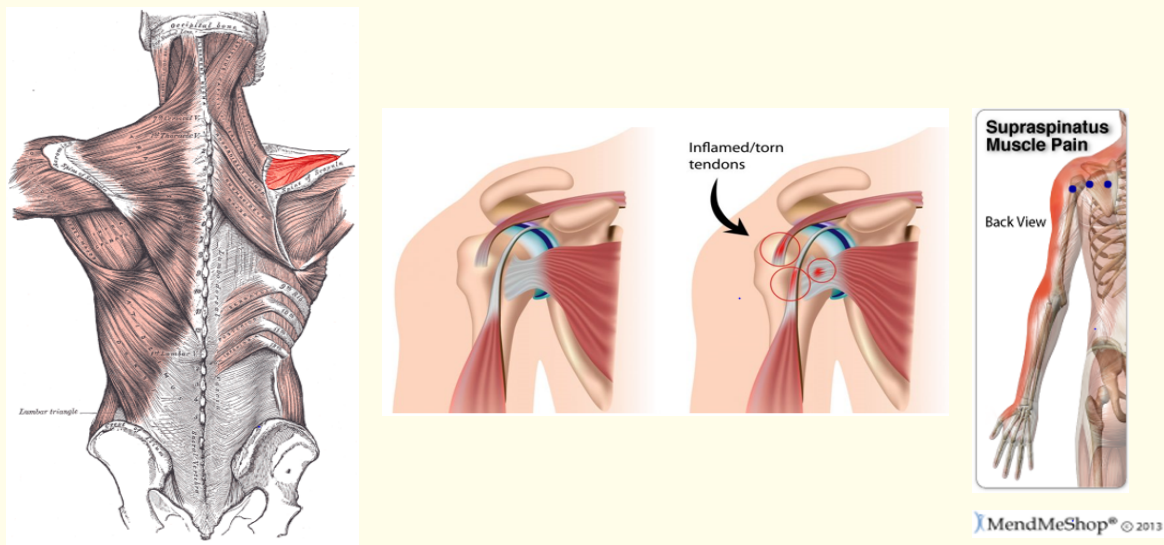


Figure 1

Clinical Presentation

Patient presents with shoulder pain, especially with overhead activities and also pain level increased at night. Pain radiates from lateral aspect for arm, forearm and hand.

According to occurrence and nature of pain it is differentiated in to two patterns.

- Sudden onset of shooting pain in the shoulder with tearing sensation is suggestive of a rotator cuff tear.
- Gradual increase in the shoulder pain with overhead activities suggestive of an impingement tendinitis.

Causes [3,4]

| Extrinsic causes | Intrinsic causes |
|--|--|
| <ul style="list-style-type: none"> • Primary impingement(bursitis, tendinitis) • Increased subacromial loading • Trauma (direct macrotrauma due to injury or repetitive microtrauma due to strain) • Rotator cuff overload/soft tissue imbalance • Eccentric muscle overload • Glenohumeral laxity/instability • Long head of the biceps tendon laxity/weakness • Glenoid labral tear • Muscle imbalance to poor posture • Scapular dyskinesia • Posterior shoulder capsular tightness • Trapezius paralysis | <ul style="list-style-type: none"> • Acromial morphology • Acromioclavicular arthrosis • Coracoacromial ligament hypertrophy • Coracoid impingement syndrome • Subacromial bursal thickening and fibrosis • Prominent humeral greater tuberosity • Impaired rotator cuff vascularity • Aging • Impingement (secondary) • Primary tendinopathy • Intratendinous articular side partial thickness tears • Calcified tendinopathy |

Diagnosis

1. **Active range of motion of the shoulder joint:** AROM to affected side and normal side should test.
2. **Palpation:** The entire shoulder girdle is palpated (noting tenderness, deformities, or atrophy) from the acromioclavicular joint, clavicle, glenohumeral joint, scapula, scapulothoracic articulation, anterior/posterior shoulder capsule, supraspinous fossa, infrapinuous fossa, and humerus, especially proximally.
3. **Special tests (impingement signs):**
 - a. **Neer test:** Forcefully flex the shoulder with internally rotated arm. Causes pain due to supraspinatus tendon impinged against the anterior inferior acromion.



Figure 2

- b. **Hawkins-Kennedy test:** Forcefully internally rotation of 90° flexed arm. Causes pain due to the supraspinatus tendon to be impinged against the coracoacromial ligamentous arch.

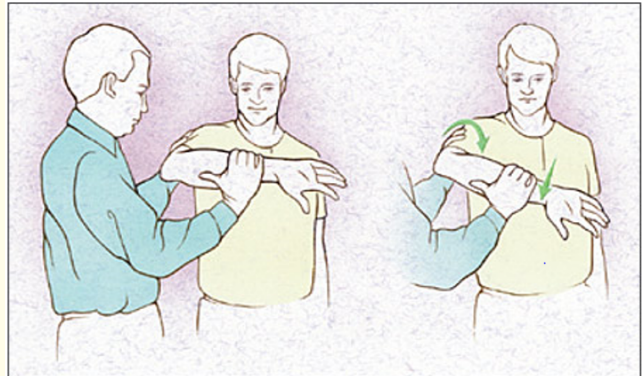


Figure 3

- c. **Supraspinatus isolation test/empty can test:** in this test patient positioned in shoulder 90° flexed with internally rotated and 30° abducted. Pain level increased when patient giving resistance during examiner pressing down his arm.

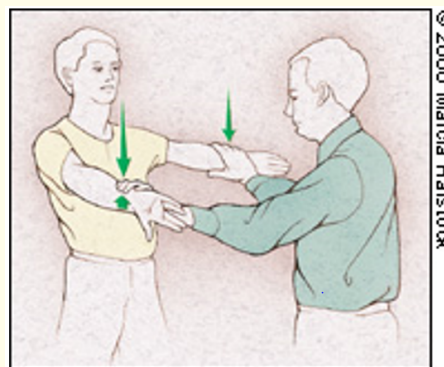


Figure 4

Note: Tests should compare with both shoulders to detect bilateral pathology.

- 4. MRI and ultrasound
- 5. Diagnostic arthroscopy

Physical Therapy Treatments

There are three phases in this program, each phases lasts up to two to three months approximately.

Acute Phase

In the acute phase of the physical therapy program main goals are to relieve pain, inflammation, prevent muscular atrophy in shoulder girdle, to maintain active range of motion (AROM) as possible level and maximum arthrokinematics in the shoulder complex.

To reduce pain level - the following modalities used for pain management Interferential therapy, ultrasound therapy, shockwave therapy, infrared radiation and hot packs.

To maintain range of motion - pain free AROM includes pendulum exercises, spider crawling, pulley exercise and self-active assisted range of motion exercises.

To increase/maintain muscle strength - Isometric strengthening exercises for shoulder girdle, scapular region.

Recovery Phase

The main goals of this phase are to normalize the range of motion and arthrokinematics in shoulder complex, achieve pain free activities, improve neuromuscular control and muscle strength.

To reduce pain level: all modalities as per acute phase can be used.

To improve range motion: Active assisted full range of motion to shoulder joint. Manual stretching to shoulder capsule, deltoid, latissimus dorsi and pectoralis muscles.

To increase muscle strength: Isotonic resistance exercises to shoulder girdle muscles.

Maintenance Phase

In this phase full range of motion activities to shoulder in all planes and dynamic resistance exercises can be start along with stretching exercise. Encourage to normal activities of daily living.

Other Treatments

1. NSAID's
2. Intra articular injections
3. Orthoscopic surgery.

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