

Biceps Tendonitis

Testing and treatment for this common athletic injury

Sample photo of acupuncture treatment for biceps tendonitis.



Biceps tendonitis is an inflammatory process of the long head tendon and is a common cause of shoulder pain due to its position and function. The tendon is exposed on the anterior shoulder as it passes through the humeral bicipital groove and inserts on the superior aspect of the labrum of the glenohumeral joint. Disorders can result from impingement or as an isolated inflammatory injury.

Other causes are secondary to compensation to rotator cuff disorders, labral tears, and intra-articular pathology. The biceps musculotendinous junction is particularly susceptible to overuse injuries, especially in individuals performing repetitive lifting activities. Degenerative changes associated with aging also predispose the elderly patient to injury. This condition is often diagnosed incorrectly, and confused with rotator cuff tendonitis.

The biceps brachii has two heads. The short head arises from the tip of the coracoid process of the scapula with the coracobrachialis. The long head lies in the bicipital groove of the humerus between the greater and lesser tuberosities and angles 90 degrees inward at the upper end of the groove, crossing the humeral head to insert at the upper edge of the glenoid. The long head biceps tendon helps stabilize the humeral head, especially during abduction and external rotation. The two heads join together in the distal arm to form one strong tendon, which inserts on the radial tuberosity on the upper end of the radius. Distally, the tendon gives off the bicipital aponeurosis (an expansion that blends with the flexor forearm muscles, extending to the ulna).

The actions of the biceps brachii are: flexion of the elbow, supination of the forearm, humeral head depression, >>

shoulder flexion (short head primarily). The biceps brachii is innervated by the musculocutaneous nerve (C5, C6).

Diagnosis is primarily clinical. Although ultrasound, CT scan, and MRI can aid in the diagnosis, these tests are not needed unless another pathology, such as rotator cuff injury, is suggested. The patient's history often suggests the diagnosis. Patients with bicipital tendinitis typically describe pain in the region of the anterior shoulder or occasionally radiating down to the elbow.

SPORT-SPECIFIC BIOMECHANICS

Athletes performing a large number of bench presses and dips frequently suffer from bicipital tendinitis. Overhead athletes, most commonly baseball pitchers, tennis players (serve and overhead strokes), gymnasts, golfers (the follow-through stages of the golf swing as the shoulder flexes and externally rotates), racquet sport enthusiasts, rowers, kayakers and swimmers (the catch and pull-through phases of many of the swimming strokes) are prone to biceps tendonitis. These sports requiring repetitive overhead motion may cause tendon breakdown with inadequate reparative time. Many overuse injuries co-exist with some degree of biceps tendonitis and rotator cuff tendonitis. Causes of bicipital tendinitis include poor lifting techniques, chronic repetitive upper extremity activities, overload (usually eccentrically), lack of flexibility, anatomical abnormalities (eg, fractures, first rib subluxations)

SYMPTOMS

Patients typically complain of achy anterior shoulder pain, which is exacerbated by lifting or elevated pushing or pulling. A typical complaint is pain with overhead activity or with lifting heavy objects. Pain may be localized in a vertical line along the anterior humerus, which worsens with movement. Often, however, the pain is vague. The pain may improve with rest.

Bicipital tendonitis is aggravated by activities that require shoulder flexion, forearm supination, and/or elbow flexion. Trauma may occur because of direct injury to the tendon as the arm is passed into excessive abduction and external rotation. The symptoms are alleviated by rest, ice, massage, stretching, and, sometimes, heat.

EXAMINATION

1. The Speed test 1: With the forearm in the supinated position and the elbow fully extended, the patient attempts to flex the arm (forward flexion at the shoulder) against the resistance provided by the examiner. Tenderness in the bicipital groove is considered a positive test result and is indicative of bicipital tendinitis.

2. The Speed test 2: This test is a variation on the Speed test 1. Test 2 may be performed by having the patient

forward flex the arm to 90 degrees while the examiner tries to move the patient's arm into extension against resistance provided by the patient. A positive test is indicated by discomfort or pain in the bicipital groove.

3. The Yergason test: The patient's elbow is flexed to 90 degrees and is stabilized against the thoracic cage with the forearm pronated, and the examiner resists supination while the patient also laterally rotates the arm against resistance. The test is considered positive if there is discomfort or pain in the bicipital groove or if the tendon pops out of the groove.

4. The Gilcrest test: The patient lifts a five-pound weight overhead with an externally rotated arm and slowly lowers it to the lateral horizontal position. Discomfort or pain in the bicipital groove is considered a positive test result.

5. The Lippman test: With the patient's arm flexed to 90 degrees, the examiner palpates the biceps tendon three inches below the glenohumeral joint and moves the biceps tendon from side to side. Pain and a palpable displacement of the

"This condition is often diagnosed incorrectly, and confused with rotator cuff tendonitis."

tendon from its groove indicate tenosynovitis with instability of the biceps tendon.

Physical examination reveals tenderness localized over the bicipital groove. Local tenderness usually is present over the bicipital groove, which typically is located three inches below the anterior acromion and may be localized best with the arm in 10° of external rotation. Active shoulder abduction, flexion, and internal rotation aggravate the pain.

The remainder of the examination should be to document active and passive range of motion and joint stability in order to assess the rotator cuff and glenoid labrum. The cervical spine should be checked as well for joint function. A complete evaluation includes a neurovascular assessment as well. Biceps tendonitis with labral tears or rotator cuff tears may not improve if all the diagnoses are not treated.

CAUSES

The long head tendon passes down the bicipital groove in a fibrous sheath between the subscapularis and supraspinatus tendons. This relationship causes the tendon to undergo degenerative and attritional changes associated with rotator cuff disease because it shares the associated inflammatory process within the suprahumeral joint. Full humeral head abduction places the attachment area of the rotator cuff and biceps tendon under the acromion.

External rotation of the humerus at or above the horizontal level compresses these suprahumeral structures into the anterior acromion. Repeated irritation leads to inflammation, edema, microscopic tearing, and degenerative changes. Labral tears may disrupt the biceps, resulting in dysfunction causing pain. The transverse humeral ligament holds the biceps tendon long head within the bicipital groove.

Injuries and disruption of the ligament can lead to subluxation and medial dislocation of the tendon.

TREATMENT

1. Chiropractic adjustments for the cervical spine and shoulder joint.

2. Acupuncture has been quite effective in reducing the edema, decreasing the pain and can aid in improving flexibility of the biceps.

3. Determining the factor that caused the injury to begin with and aiding the patient in improving the sport mechanics that caused this. Careful instruction should be given to the patient to avoid re-injury. This would include the instructions in proper mechanics with exercise, stretches, posture and strengthening the affected muscles.

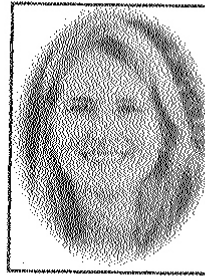
With the proper diagnosis, treatment and instructions to the patient on avoidance of the same factors, the bicipital tendonitis will heal very well and future problems with it can be minimal in nature. *

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