

Supraspinatus tear leads to insidious tendinosis of the long head of the biceps (LHB)

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Introduction

Abstract

A 60-year-old female was diagnosed by her orthopedic surgeon with a full-thickness irregular tear of her right supraspinatus along with fraying of the infraspinatus and subscapularis muscles. The patient decided to treat her condition conservatively with therapeutic rehabilitation. After 3 months, the patient returned to full functioning with no complaints of right shoulder pain. Two years after the initial rotator cuff tear, the patient presented back to her PT/ATC with insidious anterior right shoulder pain. Magnetic resonance imaging was ordered and revealed tendinopathy of the long head of the biceps and fraying of the posterosuperior labrum. Similar findings to initial injury were also noted. Patient continued physical therapy to manage her pain and prepare for arthroscopic surgery. Patient underwent long head of the biceps tenotomy, rotator cuff repair, glenohumeral (GH) labral repair, and arthroscopic excision of the acromioclavicular joint. With 2 months of conservative rehabilitation, the patient's pain levels had not improved. A third MRI was ordered and revealed that the supraspinatus anchor had failed and the biceps tendon had not released through the groove. The patient was then prepared for a second surgery, assuring a full release of the long head of the biceps tendon and rotator cuff repair. Research shows that lesions to the long head of the biceps tendon are strongly related to concomitant glenohumeral pathology as rotator cuff tears (Ditsios, Agathangelidis, Boutsiadis, Karataglis, & Papadopoulos, 2012; Peltz, Perry, Getz, & Soslowsky, 2009). Identifying rotator cuff tears are critical in order to properly treat the condition and to prevent further damage to the long head of the biceps tendon. The case report shows a clear representation of the relationship between rotator cuff tears and long head of the biceps tendinopathy, to improve a clinician's ability to detect this particular pathology and to approach therapeutic rehabilitation appropriately.

Purpose

Recognizing the relationship between rotator cuff tears and LHB tendinopathy is important in order to prevent further damage and approach therapeutic rehabilitation appropriately. This case will help athletic trainers and other clinicians to better identify these concomitant pathologies.



Background

- 60 year-old female
- Previous R shoulder full-thickness irregular tear of the supraspinatus, mild acromioclavicular joint degeneration, acromial spur, frayed infraspinatus and subscapularis.

Differential Diagnosis

- Anterior Subluxation
- Labral Tear
- Rotator Cuff Strain
- Bicep Tendinopathy

Clinical Evaluation

- Point tender over LHB tendon and tuberosities of the humerus
- ↓ active GH flexion
- 3/5 biceps brachii MMT
- Reproducible pain with passive GH extension and external rotation
- (+) empty can test
- (+) O'Brien's test

Treatment

Pre-operative

- Grade I-II anterior to posterior joint mobilizations
- Thermal therapeutic ultrasound
- Middle and lower trapezius activation
- Active assistive range of motion exercises (included shoulder protraction and retraction, GH flexion to 90°, elbow flexion)

Arthroscopic surgical intervention

Biceps tenotomy, rotator cuff repair, labral repair and debridement, subacromial decompression with acromioplasty.

Post-operative therapeutic rehabilitation (Phase I-II)

- Grades I-IV joint mobilizations and scapulothoracic joint mobilizations
- ROM exercises (elevation, abd, IR, ER)
- Elbow/hand ROM and gripping exercises
- Rhythmic stabilization
- Pendulums
- Closed-chain isometrics

Implications/Conclusion

After 2 months of conservative rehabilitation, patient's symptoms persisted. A third MRI was ordered to identify the reason for consistently high pain levels. MRI revealed a full-thickness retracted tear at the confluence of the repaired supraspinatus and infraspinatus at the distal insertions, fraying of the superior labrum, and the LHB had not fully released through the bicipital groove for unclear reasons. The patient prepared for a second surgery for full biceps tendon release and RTC repair with supraspinatus filler and irrigation. Rotator cuff tears, labral tears, and biceps tendinopathy are commonly seen simultaneously or as an effect of one another. If conservative management fails to improve patient's signs and symptoms, appropriate surgical interventions should be presented.