Spontaneous nontraumatic rupture of the biceps tendon

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ABSTRACT

The biceps is one of the most important muscles of the flexor compartment of the arm. Recently there has been an increase in the global reported incidence of biceps tendon rupture worldwide. Generally, tears are seen in the elderly population and are precipitated due to underlying risk factors. Diagnosis is done with a combination of clinical findings and ultrasonography. We report a case of a 60-year-old female without any underlying risk factors who presented with nontraumatic spontaneous rupture of the right biceps tendon.

KEYWORDS

biceps, rupture, ultrasonography, Popeye sign

Introduction

Cases of tear of the biceps tendon are being increasingly reported in the medical literature. The reported incidence is around 2.55 per 100,000 patient-years [1]. Clayton and Court-Brown reported an incidence of 53 per 1 million population with a male-to-female ratio of 3:1.1 Biceps tendon rupture was most commonly reported in the sixth decade of life [2]. Multiple risk factors have been implicated including old age, smoking, amyloidosis, connective tissue disorders, medications like corticosteroids, fluoroquinolones, and shoulder overuse or heavy overhead activities [1]. Our case is unique in a way because our patient did not have any of the predisposing factors known to cause rupture of the biceps tendon. Spontaneous nontraumatic rupture of the biceps tendon without any risk factors has rarely been reported in medical literature before.

Case report

A 60-year-old female homemaker presented to the Department of Physical Medicine and Rehabilitation (PMR) of North Bengal Medical College and Hospital (NBMCH) with a complaint of swelling and her right arm along with weakness for the last two months. She denied any history of trauma. According to her two months back one day after walking up from the bed in the morning she noticed swelling in her right arm with pain during movement and weakness. She took treatment from a local quack who gave her pain medications and massage of the area with hot oil for 1 month. With time the weakness and pain improved but the deformity persisted for which she visited NBMCH. On examination, there was a swelling at his right arm, more prominent when she flexed the elbow (Fig. 1). There was no restriction of movement. The movement was minimally painful and the power elicited was 4/5. A biceps tear was suspected. An X-ray revealed increased soft tissue opacity in the middle third of the right arm in the flexor aspect with a bulging contour. USG of the right shoulder revealed a complete tear of the long head of the biceps tendon. The inferior portion of the torn muscle and tendon was retracted distally (Fig. 2). There was an absence of biceps...
tendon in the bicipital groove. The rotator cuff tendons were unremarkable and dynamic maneuvers for evaluation of rotator cuff pathologies with sonography were unremarkable. Her routine blood work including blood sugar and rheumatological prolif returned unremarkably.

She was diagnosed as having a spontaneous rupture of the right biceps tendon. She was started on oral steroids and is currently undergoing physiotherapy and regular follow-up at the PMR department.

Discussion

Most biceps tendon tears involve the proximal long head. Cases of biceps tendon tears are often secondary to injuries caused by repetitive microtrauma and overuse [3]. Risk factors include elevated body mass index, preexisting tendinopathy, connective tissue disorders, amyloidosis, long-term intake of steroids, anabolic steroids, and fluoroquinolones [4, 5]. Pantazis et al. reported a case of spontaneous non-traumatic biceps tendon rupture in a 48-year-old female with severe hypothyroidism [6]. In our patients, we could not determine the cause of the biceps tear. She denied any history of preceding trauma. Her clinical and rheumatological parameters were within normal range and she had no history that is known to be a risk factor for biceps rupture. Although the biceps is one of the most important muscles of the arm most people can still function at a high level with a biceps tendon tear around the shoulder and only need simple treatments to relieve symptoms [7]. Most cases can be diagnosed based on history and clinical examinations alone. Distal tendon retraction is visualized as the “Popey” deformity named after the cartoon character “Popeye the Sailor Man”. Ultrasonography can be used for diagnosis with high sensitivity, specificity, and accuracy. Musculoskeletal ultrasound provides a dynamic bedside examination with a sensitivity and specificity of 88 and 98%, respectively [8]. Although initially considered inferior to Magnetic Resonance Imaging(MRI) for the diagnosis of biceps tear due to the excellent soft tissue visualization with MRI, sonography is becoming increasingly recognized due to its lower cost, easy availability, contralateral comparison, and the possibility of performing dynamic examinations [9].

Conclusion

Biceps tendon ruptures are not uncommon in clinical practice. Most patients are elderly with a history of trauma and associated risk factors. However, in some cases, rupture may be atraumatic and spontaneous. The classical clinical Popeye sign along with sonography demonstrating the muscular discontinuity can be used for diagnosis and treatment planning.

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Fig. 1. A globular mass that became more prominent on elbow flexion (Popeye sign)

Fig. 2. Ultrasonography of the biceps muscle showing torn tendon with retracted distal portion along with minimal surrounding fluid
REFERENCES


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