Bilateral Distal Biceps Tendon Ruptures with Heterotopic Ossification Following the Endobutton® Repair

Author(s): AR Malarkey DO, HB Bamberger DO

Affiliation: Grandview Hospital & Medical Center; Dayton, OH

Introduction: Distal biceps tendon rupture is an uncommon musculoskeletal injury with an incidence of 1.2 per 100,000. Even rarer is the occurrence of a subsequent contralateral rupture, with few studies recorded in the literature. It is well known that smoking and anabolic steroid use are risk factors for rupture but other theories exist regarding the etiology and pathoanatomy, including presence of a hypovascular zone, chronic tendinosis, and anatomical impingement. Systemic co-morbidities might also influence the pathogenesis. Current treatment protocols for young, active individuals favor operative management, in order to restore strength and endurance with flexion and supination, though surgical approach and fixation techniques have changed over time. The Endobutton® technique has proven to be a reliable, biomechanically superior construct utilizing a single anterior incision, with minimal complications. Three cases have been reported in the literature regarding heterotopic ossification (HO) following the Endobutton® procedure. Currently, no HO prophylaxis guidelines exist when treating these injuries. However, the development of HO is only relevant if it causes clinical symptoms. We report a case of asynchronous bilateral ruptures, both to add to the literature regarding this rare phenomenon, as well as to describe the Endobutton® technique and subsequent HO issues.

Methods: This case report describes a 52 year-old Caucasian male who sustained a distal biceps rupture of the dominant extremity, with a contralateral rupture nine months later. Both repairs involved the Endobutton® technique and resulted in clinically significant HO.

Results: The patient sustained rupture of dominant extremity distal biceps tendon after an episode of heavy lifting. The patient was surgically treated with the Endobutton®. The patient complained of pain and decreased motion at subsequent follow-up visits. X-rays at seven weeks post-operation demonstrated HO. The patient’s clinical course was followed with serial x-rays and CT scan. Approximately nine months later, the patient ruptured his non-dominant extremity distal biceps tendon. The patient was placed on Indomethacin prior to the second surgery and was treated with the similar technique. The patient continued the Indomethacin for 3 weeks after the surgery. At the 4 week post-operation visit, x-rays verified the development of HO. A rheumatological work-up and HLA-B27 testing were found to be negative. Currently, the patient is improving with regard to strength and ROM in both extremities. At this point, no excisional surgery for the heterotopic bone has been performed.

Discussion: Distal biceps ruptures are a rare, yet problematic injury to the young, manual laborer. Several current surgical techniques are used to repair the ruptured tendon. Both single-and double-incision techniques continue to be used with great success in restoring flexion and supination strength. The Endobutton’s® superior strength and increased load-to-failure have made it an intriguing option for biceps repair. Despite being commonly associated with the double-incision technique, HO can still develop in the single-incision Endobutton® repair. This case report calls into question the need for HO prophylaxis when performing the Endobutton® technique. Ultimately, HO may just be prevalent in certain predisposed individuals. Our case also provides an example of asynchronous distal biceps rupture in a patient without defined systemic co-morbidities. We doubt this will change treatment recommendations for patients with unilateral ruptures, but a simple word of caution, as with ACL ruptures, makes sense.

Reference(s):
