

Quinolone-induced Biceps Tendon Rupture

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Abstract

Presentation

A 76-year-old man presented with acute left upper limb pain and subsequent large ecchymosis.

Diagnosis

An ultrasound study was performed which showed partial left biceps tendon rupture.

Treatment

He was managed conservatively with Orthopaedic input. The patient was given analgesia and reassured.

Discussion

Tendon rupture is an unusual but serious complication of quinolone exposure. This case highlights that this should be included in the differential for acute limb pain in patients who have been prescribed these drugs.

Introduction

Since being licensed for use in the 1980s, quinolones are frequently prescribed antimicrobials with good gram positive and gram-negative cover. Quinolone-induced tendinopathy is an uncommon adverse effect (affecting around 0.4% of patients overall) but can inflict permanently disabling injury on the patient¹. In this article we report an unusual presentation of acute upper limb pain in a 76-year-old inpatient with multiple comorbidities; atraumatic biceps tendon rupture following exposure to quinolones.

Case Report

A 76-year-old gentleman was admitted to hospital for recurrence of an infective exacerbation of COPD and commenced a course of IV hydrocortisone and piperacillin-tazobactam. His medical history was significant for recurrent respiratory tract infections, chronic kidney disease, hypogammaglobulinaemia and type 2 diabetes mellitus.

The clinical course was initially uncomplicated. During admission, the patient woke from sleep with sudden onset 8/10 left upper limb pain. There was severe tenderness on palpation of the biceps with minimal surrounding oedema, and there was an absence of erythema or heat. This later evolved to a large ecchymosis extending beyond the biceps and involving the forearm (fig. 1).



Figure 1: Ecchymosis of the left upper arm

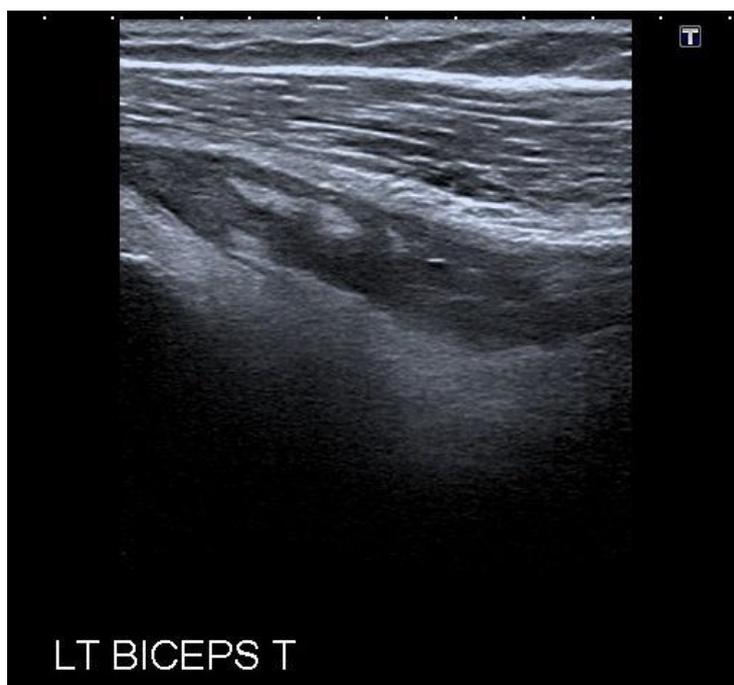


Figure 2: Ultrasound image of ruptured biceps tendon and haematoma.

Our differential diagnosis included an upper limb DVT, thrombophlebitis, cellulitis, infected haematoma and tendon rupture. An US Doppler ruled out a DVT, however a left upper limb haematoma was evident on this study. An ultrasound scan of the left upper limb soft tissues confirmed a biceps brachii tendon rupture (fig. 2). The patient was reviewed by orthopaedics who confirmed an incomplete tendon rupture and recommended conservative management given the patient's age and comorbidities. He was discharged home 10 days later.

Upon diagnosis of this man's atraumatic biceps tendon rupture, we noted that he had received at least six courses of quinolone antibiotics over the last few years, most recently 2 months prior to admission. Of note he had also received many concomitant courses of corticosteroids and had multiple comorbid conditions such as CKD and diabetes mellitus which have been implicated in tendon rupture.

Discussion

It is well established in the literature that quinolones cause tendon injury². Through a variety of cellular mechanisms these agents have toxic and degenerating effects upon the collagen fibres within the tendons^{3,4}. The Achilles tendon is known as the classical example however any tendon may be affected.

Multiple systematic reviews show that biceps tendons are not commonly affected by quinolone-associated tendinopathy². However, a 2019 study by the British Society of Clinical Pharmacology looked at quinolone-induced tendinopathy tendon rupture over a 25-year period within the NHS database. It found quinolone-induced biceps tendon rupture accounted for 25% of overall cases⁵. A similar presentation featured in a BMJ case report earlier this year⁶.

Gastrointestinal and neurological side-effects are more frequently reported⁷. Overall tendon injury with quinolones is less common affecting around 0.4% of patients exposed^{1,3}, however the risk is significantly increased for patients with renal impairment and concurrent steroid use⁸.

As with the aforementioned clinical case, the patient is at risk of tendinopathy for some time after exposure to the drug. The risk is highest within the first month of exposure, but the risk continues for up to 6 months completing the course¹. In 2019, the European Medicines Agency published an updated safety warning recommending use of quinolones to be restricted where possible⁹. For patients at high risk of tendinopathy an alternative choice of antimicrobial should be considered in line with local guidelines or following discussion with a clinical microbiologist.

In conclusion, tendinopathy although rare should be considered in the differential for acute onset musculoskeletal pain especially in at-risk groups who have been exposed to quinolones. Clinical suspicion should prompt urgent ultrasonography and orthopaedic input. Where possible use of quinolones should be restricted in patients at risk of adverse effects.

Patient Consent:

Consent received.

Declaration of Conflicts of Interest:

None declared.

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