

Bilateral Achilles tendon rupture secondary to ciprofloxacin – an unusual side effect.

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Introduction

Tendon rupture, in particular Achilles tendon rupture, has been shown to be a rare but significant side effect of quinolone antibiotics¹.

Ultrasound assessment of the Achilles tendon is a relatively common procedure in any musculoskeletal ultrasound list, but this uncommon cause reminds us that some drug side effects, though rare, are important to consider when a patient presents with seemingly unusual symptoms.

Case Report

Our patient was a 71 year old ex-smoker with known COPD, on long-term steroid inhalers.

He presented to his GP in March 2009 with a chest infection, for which he was prescribed a one week course of ciprofloxacin. A few days into the course, he described a sudden sharp pain in his left heel followed almost immediately by swelling. Three days later, (while still on ciprofloxacin), he experienced similar symptoms on this right heel. The swelling slowly subsided over the following two months but he experienced ongoing discomfort. He re-attended his GP in July 2009, when he was limited to walking 100 metres.

At a subsequent rheumatology appointment in August 2009, he was unable to perform a normal heel strike and toe off, and there was a marked dip at the Achilles–calcaneal junction bilaterally.

We performed US of the Achilles tendons in September 2009 which showed bilateral Achilles tendon rupture, with significant separation of the tendon ends.



Figure 1. Panoramic ultrasound view of the right Achilles tendon demonstrating a linear region of hypoechoic shadowing in the musculotendinous junction.



Figure 2. Panoramic ultrasound view of the left Achilles tendon demonstrating a linear region of hypoechoic shadowing in the musculotendinous junction.

Discussion

Tendon rupture is a rare but recognised side effect of fluoroquinolone antibacterial treatment, with first case reports appearing in 1983.² The most commonly affected sites are the Achilles, rotator cuff, patellar and quadriceps tendons, but it has been suggested that the predisposition to injury of the Achilles tendon may be due to

its weight-bearing role. One study³ has shown a reported incidence in the general population of 0.4% and it is felt that tendon involvement is bilateral in more than half of cases.⁴

The exact mechanism for the phenomenon remains unclear, although recent studies have demonstrated that in particular, ciprofloxacin stimulates protease activity from fibroblasts and inhibits cell proliferation and synthesis of matrix ground substance, which may contribute to tendonopathies.⁵

One review article which looked at a population-based, case-control study over a ten year period concluded that risk factors for quinolone-induced tendon disorders include age greater than 60 years and concurrent oral corticosteroid use⁶, while another study⁷ showed that the proportion of Achilles tendon disorders amongst patients with both risk factors was 87%. It is unclear whether inhaled corticosteroid use - as in our patient - might be a risk factor.

There also appears to be a variation in the duration between commencing antibiotic therapy and the onset of tendonitis and rupture. Our patient experienced symptoms a few days into the course of ciprofloxacin. Some studies suggest that tendon rupture may occur within 48 hours of use, or symptoms can occur as late as six months after withdrawal^{8,9}.

Conclusion

Ultrasound assessment for possible Achilles tendon rupture is a common request on any musculoskeletal ultrasound list. Whilst the pathology is relatively common, unusual causes such as adverse drug reactions are not.

References:

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