

Case report

Inappropriate use of fluoroquinolone (Levofloxacin/Tavanic) resulting in partial Achilles tendon rupture complicated by deep venous thrombosis

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Fluoroquinolone (FQ)-associated Achilles tendon (AT) rupture or damage has been well described in the literature.^[1,2] It is said to occur in 0.02 - 0.4% of the normal population.^[1] However, there are several conditions that prescribers should be aware of where rupture may occur more frequently and where FQs should, if possible, be avoided. This case presentation illustrates the point and conveys several other important messages.

Case report

A fit 70-year-old man presented with pain and swelling of his right ankle, which followed minor trauma sustained while exercising at gym. Over several days the swelling extended. His general practitioner diagnosed cellulitis and prescribed Levofloxacin (LF) 500 mg twice daily for 5 days. Four days after this he developed pain over the left AT which intensified over the following 10 days. A physiotherapist was consulted, who found extremely painful tendonitis. The diagnosis of AT partial rupture was confirmed by ultrasonography (Fig. 1).

Soon thereafter he noticed swelling and pain of the left calf and he was referred to an orthopaedic surgeon who diagnosed a below-knee deep venous thrombosis (DVT) confirmed on flow Doppler (Fig. 2). Of note, the original cellulitis of the right ankle had settled while on LF. To exclude either right AT damage or right DVT, an ultrasound and Doppler flow were performed at a later stage. Both were reported as normal.

Discussion

As in our case, Khaliq and Zhanel^[1] documented that 50% of cases of FQ-associated tendonitis occur within 6 days of initiation of therapy, some as soon as 2 days. However, AT damage after FQ has been

reported as occurring up to 6 months after exposure.^[2]

When LF is used for its primary indication, the management of lower respiratory tract infections, especially *Streptococcus pneumoniae*, the currently recommended dose is either 500 mg twice daily or 750 mg once daily. It does not appear, however, that there is an association between AT damage and dose. In fact, as low a dose as 500 mg given daily has been followed by AT rupture – although others disagree.^[1,3,4]

Three important messages arise from this case. Firstly, practitioners should be particularly cautious about prescribing FQ where the risk of tendon rupture is high.^[3,5,6] Of these, age and renal failure are the most important (Table 1).

Secondly, prescribed antibiotics should always be directed towards the most likely organism. In this case, because community-acquired cellulitis in South Africa is still most commonly caused by

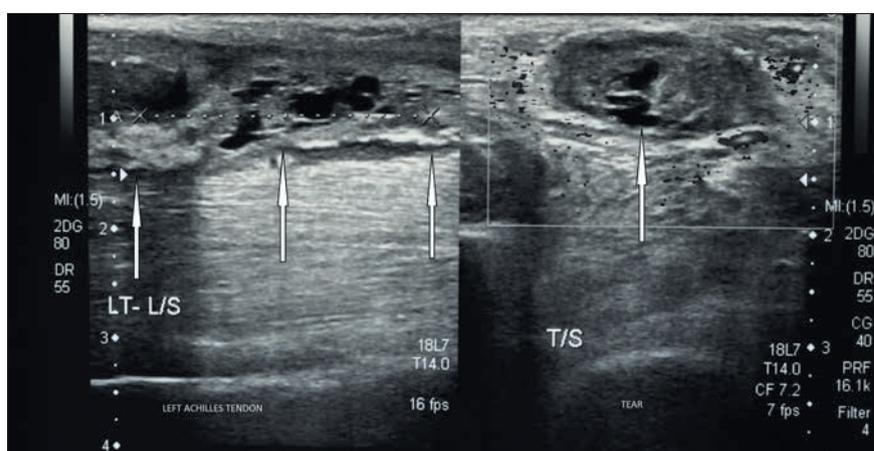


Fig. 1. Left Achilles tendon.

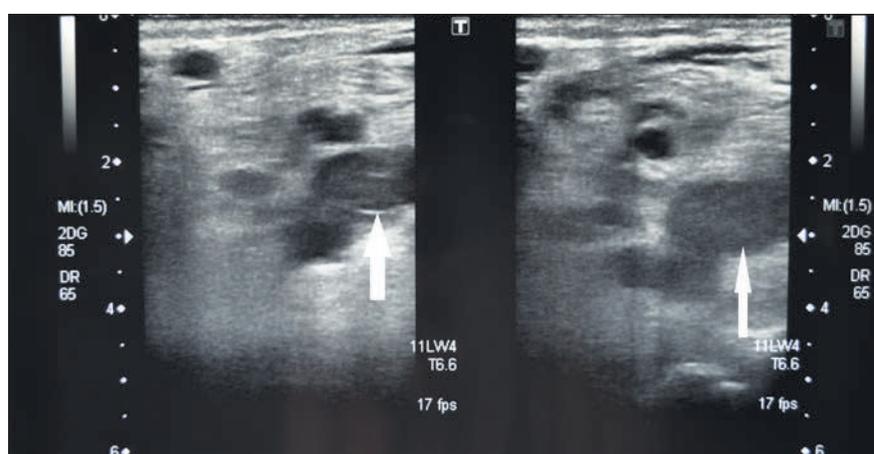


Fig. 2. Left popliteal vein thrombus.

Table 1. High-risk factors for AT damage

- Age (>65 yrs)
- Chronic renal failure, especially on dialysis
- Corticosteroid usage
- Chronic rheumatic disease
- Rheumatoid arthritis
- Systemic lupus erythematosus
- Gout
- Renal transplantation
- Hyperthyroidism
- Anabolic steroids

β -haemolytic streptococci or methicillin-sensitive *Staphylococcus aureus*, the most appropriate agent would have been high-dose oral cloxacillin, particularly for non-purulent cellulitis, which is safe, inexpensive and highly effective. If, however, necrotising fasciitis is suspected, urgent admission with debridement is mandatory and β -lactam/clindamycin combinations should be used. If methicillin-resistant *S. aureus* is suspected in a patient with purulent cellulitis, agents such as clindamycin, trimethoprim-sulfamethoxazole (TMP-SMZ), doxycycline or linezolid are recommended.

The third important message from this case is the diagnosis of DVT on the side of the

AT injury. Quinolones have been shown in incubated canine tendons to decrease cell proliferation and to increase fibroblast matrix-dependent protease activity. This inflammatory component together with immobility has resulted in many case reports of quinolone-associated AT injuries associated with DVT.^[4,7,8] However, these were usually found in cases of AT rupture in which surgical immobility was used in treatment, e.g. plaster of Paris casts or orthopaedic boots. Our case demonstrates that, even with more minor AT injury, inflammation with pain-induced restricted mobility is sufficient to precipitate DVT in a patient who is not at risk of this condition. Of particular importance is that with AT rupture and surgical-induced immobility, proximal DVT with near-fatal pulmonary thrombo-embolic disease has also been described.

In conclusion, it would seem reasonable to suggest that FQs are relatively contraindicated in high-risk patients and should be reserved only for life-threatening infections where no adequate alternative exists.

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SINGLE SUTURE

Drug for autism makes people more sociable

Could a drug reverse the symptoms of autism? The results of the latest clinical trial are mixed.

At a meeting last week, Seaside Therapeutics, in Cambridge, Massachusetts, presented the results of the largest ever clinical trial of a drug for autism. Called arbaclofen, or STX209, it works by damping down excessive brain activity – a hallmark of autism.

For 12 weeks, 150 people with autism, aged between 5 and 21 years, received either arbaclofen or a placebo. While the drug failed to make any impact on social withdrawal, its main clinical target, it did make recipients more able to respond appropriately to other people.

'We strongly believe that STX209 is associated with a real efficacy signal,' says Randall Carpenter, Seaside's CEO. 'We are very hopeful the next trial will have positive results.'

New Scientist, 9 May 2013