

Case reports

Spontaneous rupture of extensor pollicis longus tendon in a kick boxer

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Abstract

A 23 year old male kick boxer presented with a 24 hour history of pain and being unable to extend the interphalangeal joint of the left thumb. There was no history of trauma or any other risk factor for spontaneous rupture of the extensor pollicis longus tendon. On the previous day, he had been doing reverse press ups on the dorsum of his hands with his wrists hyperflexed as part of his training for kick boxing. At operation the extensor pollicis longus tendon was found to be divided at the level of the dorsal tubercle of the radius and was not directly repairable. The treatment was an extensor indicis proprius transfer. We suggest that the cause of the tendon rupture was direct pressure on the dorsal tubercle of the radius sustained while performing reverse press ups.

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Spontaneous rupture of extensor tendons at the wrist usually affects the extensor pollicis longus, and the most common causes are fracture of the distal radius¹ and rheumatoid arthritis.² Other causes of spontaneous rupture include osteoarthritis of the radioulnar joint,³ fluoroquinolone antibiotics, especially with the concomitant use of corticosteroids,⁴ and certain sporting activities. Sports associated rupture of the extensor pollicis longus tendon has been reported in a 17 year old diver,⁵ a 69 year old tennis player,⁵ a 29 year old practicing judo,⁶ and a 19 year old woman turning the steering wheel of her car.⁷

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Case history

A 23 year old right hand dominant male kick boxer presented with a 24 hour history of an inability to extend the interphalangeal joint of his left thumb and with pain. On the previous day, he had been training for a national competition. Part of his training involved press ups on the dorsum of his hands with his wrists hyperflexed, and during this exercise he felt pain in his wrist. Later that evening he had pain in his left thumb which he was unable to extend fully. There was no history of antibiotic or corticosteroid use and no evidence of degenerative joint disease.

Examination showed him to be a physically fit and well built 23 year old. He was unable to extend his left thumb at the interphalangeal joint and had reduced power in extension at the metacarpophalangeal joint. A deficiency in the extensor pollicis tendon could be demonstrated at the wrist.

At surgical exploration, the extensor pollicis longus tendon was found to be divided at the level of the dorsal tubercle of the radius (fig 1). The tendon was attenuated over a considerable distance and was not suitable for direct repair. An extensor indicis proprius transfer was performed. The repair was protected with a splint for four weeks and was then mobilised. At eight weeks the patient had full range of movement of his left thumb and index finger, and at 12 weeks he returned to training.

Discussion

This unusual injury was probably a result of the reverse press ups which were part of the training routine of this patient. They involved carrying his weight on the dorsum of the hand through a flexed wrist. This is in contrast with conventional press ups where weight is carried on the palm through an extended wrist. The position of this reverse press up potentially places pressure on the dorsal tubercle of the radius. We propose that this resulted in a crush injury to the tendon causing rupture, a mechanism described by Denman.⁸

Attrition ruptures of tendons are rarely suitable for direct repair, and possible cases should be referred to a specialist hand unit. The extensor indicis proprius transfer is recommended by most surgeons when direct repair of the extensor pollicis longus is not possible, as it has an appropriate direction and excursion.⁹

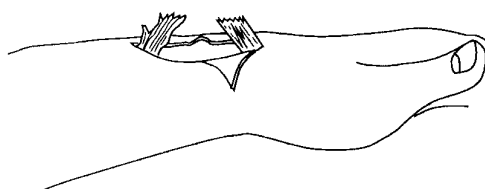


Figure 1 The attenuated tendon divided at the level of the dorsal tubercle of the radius at the time of operation.

We report this case, as rupture of the extensor pollicis longus tendon would appear to be a risk factor in sports people performing reverse press ups. We advise anyone doing these exercises to ensure that the wrists are well padded before transferring any weight to them.

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Commentary

Specific sporting activities often demand unusual postures or high pressure to structures not normally designed for such biomechanical stress. This case identifies an unusual presentation of rupture of extensor pollicis longus, but for some time before the actual rupture, possibly a period of six to eight weeks, this patient would have had symptoms.

It would therefore be prudent for trainers, coaches, and therapists involved in this particular sport, and possibly others, to make the sportspersons themselves aware that the tendons around the hand are vulnerable, and, if they have symptoms on moving specific tendons, then they should seek advice from their coach or trainer, and, if abnormal postures are being employed, great care should be taken to avoid this particular event.

The authors have presented this well and have highlighted an unusual mode of presentation of this particular tendon rupture.

I am not entirely certain that padding the wrist would be wholly protective against rupture and would caution against relying on this technique to avoid trouble. The local anatomy is such that the tendon is almost certainly ischaemic for prolonged periods of time when the wrist is flexed. Padding would not help this. Nonetheless, I commend the authors for bringing this interesting and novel problem to our attention.

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