

SCAPHOID EXOSTOSIS CAUSING RUPTURE OF THE FLEXOR POLLICIS LONGUS

K. J. O'DWYER FRCS, C. D. JEFFERISS FRCS

A case of attrition rupture of the flexor pollicis longus (FPL) tendon caused by a scaphoid osteophyte in a patient with rheumatoid arthritis is reported. This lesion was found only after a thorough search of the floor of the carpal tunnel was performed.

Keywords : flexor pollicis longus ; rupture ; carpal scaphoid ; exostosis.

Mots-clés : rupture ; long fléchisseur propre du pouce ; scaphoïde carpien ; exostose.

INTRODUCTION

Closed rupture of the flexor pollicis longus (FPL) tendon is rare. Boyes *et al.* (1) reported only 15 FPL ruptures in 80 flexor tendon ruptures collected over a 13-year period.

We report a case of rupture of the FPL in a patient with inactive rheumatoid arthritis.

CASE REPORT

A 59-year-old female teacher presented with a 3-month history of inability to flex her thumb at the interphalangeal joint. There was no history of trauma. She suffered from seronegative rheumatoid arthritis, inactive at the time of rupture. She was not on any medication for this condition.

Exploration of the thumb revealed no abnormality and the tendon was therefore explored more proximally. In the carpal tunnel, the tendon was found to be divided, the proximal end having retracted into the forearm. The floor of the tendon sheaths at the site of rupture was explored. Initially no abnormality was detected, but a further search revealed a small defect in the capsule with an underlying osteophyte on the scaphoid. It was

trimmed and the defect repaired. Tendon transfer of the flexor sublimis to the ring finger was then performed. The patient made an uneventful recovery.

DISCUSSION

The causes of FPL rupture are numerous and have been listed by Boyes *et al.* (1). The commonest cause at present is rheumatoid arthritis (8). Non-rheumatoid ruptures in the recent literature are caused by Colles fractures (2, 4, 10, 15, 18), Kienböck's disease (6, 7), radial exostosis (5), dislocation of the lunate (16), K-wire fixation of a Bennett fracture (14) and nonunion of a scaphoid fracture (3, 9, 11, 17). Despite many causes, the incidence remains low.

The strongest link in the musculotendinous unit is the tendon itself. Rupture occurs only if the tendon is weakened by some process, making it the weakest link in the chain. Considerable damage to the tendon must occur before this happens.

Two mechanisms of flexor tendon rupture have been postulated (10). One mechanism suggests that the tendon may fray while gliding over an exposed bony spur. This was reported by Hallett and Motta (6) in a case of Kienböck's disease and is probably the mechanism of rupture in this present case report. The second mechanism is that of tendon ischemia secondary to trauma to the blood vessels supplying the tendons. Support for this comes from Diamond and Newman (4) where multiple flexor tendon ruptures occurred over a period following a Colles fracture. Both mecha-

Princess Elizabeth Orthopedic Hospital, Wonford Road, Exeter, EX2 4UE, United Kingdom.

Correspondence and reprints : K. J. O'Dwyer FRCS.

nisms may in fact apply to all cases and are not mutually exclusive.

In rheumatoid arthritis, the same two basic mechanisms occur, although with slight modification. Bony spurs are caused, not as in osteoarthritis by osteophytes rising above the surface of the bone, but by granulomatous erosion of the bone around its supplying blood vessel, leaving unaffected bone as a raised spicule (12). The other mechanism, that of tendon ischemia, occurs in rheumatoid arthritis as invading granulation tissue, follows the vincular vessels and either invades the substance of the tendon itself or chokes off the blood supply, leaving an ischemic and therefore weakened area (12) which eventually ruptures.

We previously reported three cases of rupture of the FPL in nonrheumatoid patients (13). In these three cases, rupture occurred at the metacarpophalangeal joint, over the proximal third of the proximal phalanx and over the metacarpal shaft respectively. Despite a careful search, no osteophyte was found. On this occasion, an abnormality was eventually found, but only after a careful and thorough search of the floor of the carpal tunnel. Even when the site of rupture was found, it was difficult to see the exostosis as it was covered by a trap door arrangement of the soft tissue on the floor of the carpal tunnel. This is very similar to Hallett and Mottas' case (6), where the underlying osteophyte was found only with difficulty.

Closed rupture of the FPL remains a rare occurrence. The commonest cause is rheumatoid arthritis. Once the site of rupture has been identified, a careful search of the floor of the site of rupture is necessary. Even patients whose rheumatoid arthritis is not active may develop this complication long after their rheumatoid arthritis has ceased to be active.

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SAMENVATTING

K. J. O'DWYER, C. D. JEFFERISS. Ruptuur van flexor pollicis longus, veroorzaakt door een exostose van het carpaal scaphoïd.

Een ruptuur van de flexor pollicis longus pees, veroorzaakt door een exostose van het scaphoïd bij een patiënt met reumatoïde arthritis wordt beschreven. Dit letsel kon pas in het licht gesteld worden na een grondige exploratie van het carpal kanaal.

RÉSUMÉ

K. J. O'DWYER, C. D. JEFFERISS. Rupture du long fléchisseur propre du pouce, provoquée par une exostose du scaphoïde carpien.

Les auteurs présentent un cas de rupture du long fléchisseur propre du pouce, causée par une exostose du scaphoïde carpien, chez un malade souffrant d'arthrite rhumatoïde. Il fallut une exploration chirurgicale profonde du canal carpien, pour mettre la lésion en évidence.