

CASE REPORT

NON RHEUMATOID CLOSED RUPTURE OF EXTENSOR CARPI ULNARIS TENDON REPORT OF A CASE IN A PROFESSIONAL ATHLETE

K. C. XARCHAS, D. LEVIET

A rare case of closed, non-rheumatoid rupture of the extensor carpi ulnaris tendon, that occurred in a professional tennis player, is presented.

The authors describe the diagnostic problems and the treatment. They discuss the anatomical particularities of the area, the probable pathological mechanisms that lead to the lesion and the best ways of dealing with the problem.

Keywords : tendon rupture ; extensor carpi ulnaris ; sports injuries.

Mots-clés : rupture tendineuse ; cubital postérieur ; traumatisme sportif.

INTRODUCTION

Ulnar sided wrist pain is a relatively common problem, especially among sportsmen and women. The Extensor Carpi Ulnaris (ECU) tendon is frequently involved, mainly by means of stenosing tenosynovitis and/or instability with ECU subluxation. Nonrheumatoid closed rupture of the ECU tendon is a very uncommon cause of wrist pain. We only found two reported cases of complete, and one of partial, ECU rupture in the literature.

CASE REPORT

A 23-year-old female professional tennis player, highly ranked both in the French and in the world classification was referred to the senior author (D.L.), for pain in her right dominant wrist. Her past medical history was insignificant and she was otherwise fit and healthy.

She would experience pain every time she hit the ball, and the pain had steadily increased during a period of two weeks. She could recall no initiating accident.

On examination, wrist power and mobility were normal. There was localized tenderness around the ulnar styloid and palpable swelling in the area of the ECU tendon. Pain was reproduced in forced supination and supination-pronation under resistance.

Xrays showed a slight triquetro-lunate diastasis in the position of ulnar wrist deviation and a positive ulnar variance (+ 2 mm).

A diagnosis of tenosynovitis was at the time considered as most appropriate and conservative treatment was advocated. It included rest, splints, physiotherapy, nonsteroid anti-inflammatory medication and two local infiltrations with steroids, in a period of eight months. It only provided temporary relief and always failed when the patient attempted to play or train at a higher level.

Further investigations included an MRI scan and an arthrogram. MRI revealed an inflammatory reaction in the tendon sheath and around the insertion of the ECU at the base of the 5th metacarpal. It also showed a possible lesion of the medial part of the triangular fibrocartilage complex (TFCC). The

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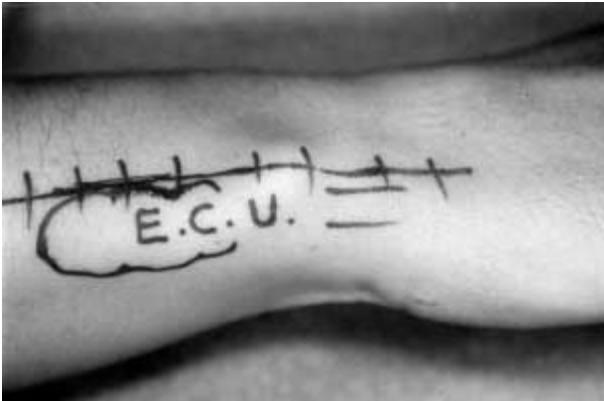


Fig. 1. — Skin incision



Fig. 2. — The ruptured E.C.U. tendon. The dorsal sensory branch of the ulnar nerve is preserved.

arthrogram confirmed this lesion and also indicated a possible lesion of the triquetrolunate ligament.

In view of the failure of conservative treatment, surgical exploration was performed ten months after the first consultation.

Operation

A straight dorso-ulnar incision over the ECU tendon (fig. 1) immediately revealed a tendon rupture situated about 1 cm from its distal insertion. The dorsal sensory branch of the ulnar nerve was preserved (fig. 2). The dorsal retinaculum of the wrist was opened and the fibro-osseous canal of the ECU was found distended and partially ruptured over the posteromedial aspect of the ulnar head. The ECU defect was repaired with a palmaris longus graft (fig. 3) and the fibro-osseous canal was reconstructed with the use of a free graft from the dorsal retinaculum, stabilized with interosseous sutures (fig. 4). The triquetrolunate ligament was then approached through a posterior arthrotomy at the appropriate level. A minor lesion of the ligament and a very small tear of the TFCC were confirmed but did not require any particular treatment. Finally the capsule and the dorsal retinaculum were closed (fig. 5) and the wrist was immobilized in a below-elbow plaster cast for 5 weeks.

After removal of the cast the patient started a long and intensive rehabilitation program. She was soon completely pain-free and restarted training. At a 3-year follow up, her wrist was strong, pain-free

and stable. She was participating in major tournaments such as the French Open but had unfortunately fallen ten ranks in the world classification.

DISCUSSION

The ECU tendon runs in its own fibro-osseous canal (6th dorsal wrist compartment) over the postero-medial surface of the ulnar head. The distinguishing feature of the 6th compartment is that the tendon is maintained in the ulnar groove by a subsheath about 15 mm long, independent of the extensor retinaculum. The true extensor retinaculum (forming the rest of the dorsal wrist compartments) runs over the subsheath without any attachment to the ulna. It passes around it palmarly and attaches to the pisiform, triquetrum, 5th metacarpal and palmar-ulnar soft tissue structures (5, 11, 12).

The ECU tendon plays an important role in the stability of the ulnar head, in conjunction with other anatomical elements: palmar and dorsal articular surfaces, TFCC, interosseous membrane, pronator quadratus (11).

Instability of the ECU tendon because of rupture of the medial wall of the 6th compartment is a common lesion described by numerous authors (2, 4, 6, 9, 10). This type of instability has been observed after wrist injuries insupination, palmar flexion and ulnar deviation. It has not only been described among tennis players but also among golfers, gymnasts and rodeo cowboys.

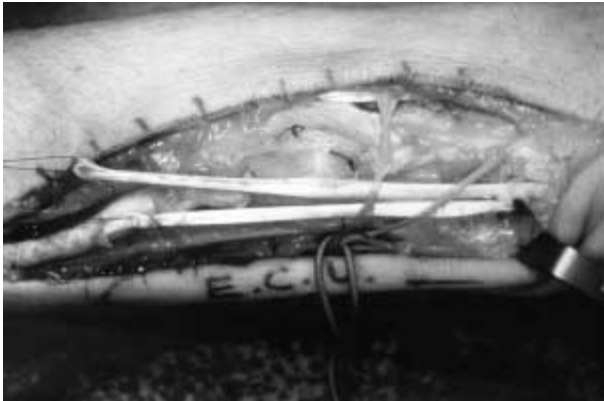


Fig. 3. — Tendon gap bridged with palmaris longus graft

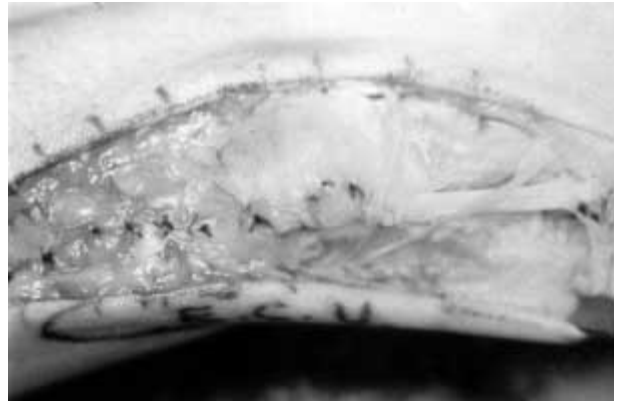


Fig. 5. — Final result after closure of extensor retinaculum

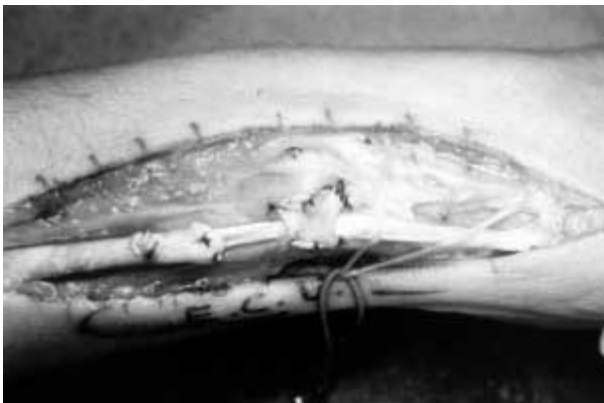


Fig. 4. — The reconstructed tendon and subsheath of the 6th compartment.

It is possible that an ulnar plus variance is also a precipitating factor for the instability (1, 13).

It appears that in a certain number of cases, especially among sportsmen and women, rupture of the medial wall of the 6th compartment is preceded by a period of tenosynovitis. It is probable that tenosynovitis leads to a distension of the fibro-osseous canal of the 6th compartment and, when combined with repetitive traumatizing movements, can result in rupture of the medial wall and subluxation of the ECU tendon. Rupture of the ECU tendon can possibly occur as a final evolution of this inflammatory pathology (6).

Moran and Ruby (8), were the first to report two cases of complete nonrheumatoid ECU tendon rup-

ture. The tendon was repaired using a palmaris longus graft. In one of these cases the subsheath was reconstructed with a flap from the dorsal wrist retinaculum. Chun and Palmer (3) reported a case of partial ECU rupture. The lesion was explored, a small prominence of the ulna (considered as a possible precipitating factor because of attrition) was removed and the tendon was “shaved”. All three cases had a long-standing history of undiagnosed ulnar-sided wrist pain, all patients could recall a relative accident and all three of them progressed well after surgical treatment.

In our case there was no clear history of trauma and no evidence of bony attrition to the tendon. Palmaris longus was used to bridge the tendon and the fibro-osseous canal was reconstructed according to the technique described by Eckhardt and Palmer (4), and Loty *et al.* (7). Other techniques have also been described (2).

Investigations, in our case, failed to reveal the true nature of the problem. In spite of that, they can reveal important associated problems such as TFCC or ligament lesions and should be made before any surgical intervention.

The surgeon should be prepared to deal with all the possible problems in the area including a simple stenosing tenosynovitis, rupture of the fibro-osseous canal of the 6th compartment, ECU ruptures or even lesions of the TFCC or the carpal ligaments.

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SAMENVATTING

K. C. XARCHAS, D. LEVIET. Spontane ruptuur van de extensor carpi ulnaris pees bij een beroepsatleet. Gevalstudie.

De diagnosisstelling en de therapie worden beschreven van een gesloten spontane ruptuur van de pees van extensor carpi ulnaris bij een beroepsatleet, die niet lijdt aan reumatoïde arthritis. Er wordt uitgebreid over de anatomische karakteristieken van de omgeving, over de mogelijke oorzakelijke pathologische mechanismen en over de beste therapeutische aanpak van het letsel.

RÉSUMÉ

K. C. XARCHAS, D. LEVIET. Rupture sous-cutanée, non-rhumatoïde, du tendon du cubital postérieur. Presentation d'un cas chez une athlète professionnelle.

Les auteurs rapportent un cas rare de rupture sous-cutanée, non-rhumatoïde, du tendon du cubital postérieur chez une joueuse professionnelle de tennis. Ils décrivent les problèmes diagnostiques et le traitement. Ils discutent les particularités anatomiques régionales et les mécanismes pathologiques qui peuvent conduire à la lésion. Ils discutent finalement les options thérapeutiques.