Case Report

Non-surgical management of Trapezium canal syndrome an uncommon presentation of Flexor carpi radialis tenosynovitis

Abstract

Flexor carpi radialis (FCR) tendonitis is described as an uncommon condition that is causing pain at the palmar aspect of the radial wrist. FCR tendonitis is a middle-aged condition which tends to affect the dominant hand. Patients with FCR tendonitis usually presents with pain and swelling over the palmar side of the radial wrist. Resistance against radial deviation of the wrist may illicit tenderness. FCR tendinitis can be diagnose clinically, however, radiographs MRI can help confirm the diagnosis. Management of FCR tendinitis includes physiotherapy, oral anti-inflammatory medication, steroid injection and surgical decompression. Surgical release showed a high rate of symptomatic satisfaction, and a reduced rate of recurrence.

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Introduction

Flexor carpi radialis (FCR) tendonitis is described as a pain at the palmar aspect of the radial wrist, attributed to a process of inflammation.[1] Repetitive flexion demanding sports at the wrist joint such as racquet, volleyball and basketball players showed an increased likelihood for this condition occurrence.[2] The diagnosis of FCR tendonitis is appreciated clinically based on presence of pain, erythema, warmth and swelling of the palmar side of the wrist.[3] Initial management may involve activity limitation which will enhance swelling and pain relief, occasionally, patients with persistent symptoms despite conservative treatment can have corticosteroid injection trials.[3] However, refractory clinical symptoms in FCR tendinitis patient may require surgical intervention with decompression.[4]

Case presentation

A 57-year-old male, known case of primary hypertension, right-handed dominance, presented to orthopedic clinic complaining of chronic pain in the right palmar side of the hand for 2 months duration. Pain was intermittent, sharp in nature, and roughly localized in the thenar region which increased 1 week prior to presentation. There was no numbness, functional limitation nor previous history of wrist or hand trauma. On physical examination, tenderness was noted in the thenar eminence (Figure 1), which was aggravated with resisted wrist flexion. There was no swelling, scars or ecchymosis. Power of the hand was 5 out of 5 and sensorimotor assessment was unremarkable. Wrist view X-rays showed osteoarthritic changes of the carpometacarpal joint of the right thumb, with no evidence of other pathological or traumatic findings (Figure 2). Based on the clinical assessment, the differential diagnosis of trapezium canal syndrome was established. The patient was counseled to initiate conservative management, but he preferred to have his symptoms controlled with steroid injection as advised by orthopedic consultant as second line management.

Once patient desire necessitating immediate relief of the ongoing pain, informed consent of the steroid injection was obtained. Under sterile technique, landmark of the Flexor Carpi Radialis at the trapezium canal was identified, a 40 ml of domperidone mixed with 5 ml of 1% lidocaine was injected all over the FCR sheath (Figure 3A, 3B). Immediate pain relief was achieved with no homeostatic or neurological complication, assessment of the patient 1 hour post injection was with high satisfaction. The patient was then discharge with 1 and 2 week follow up. Fortunately, during the 2 visits, there was no relapse of any previously mentioned symptom, which again confirm the diagnosis of trapezium canal syndrome.

Figure 1 Image of the affected wrist which shows the site of tenderness at the thenar eminence.

Figure 2 X-ray image of the affected wrist which shows osteoarthritic changes of the carpometacarpal joint of the right thumb, with no evidence of other pathological or traumatic findings.

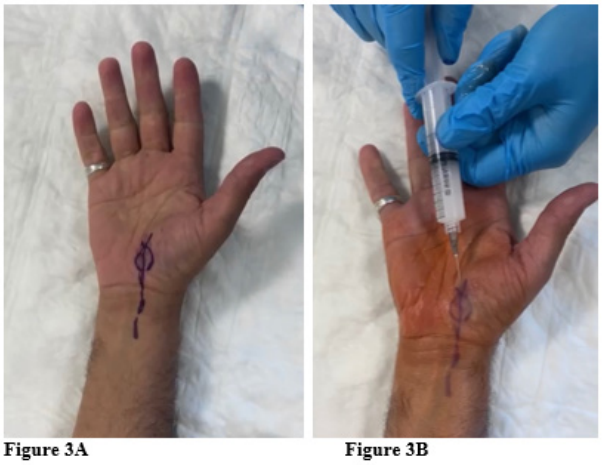

Figure 3A Figure 3B

Figure 3 Landmarks of the FCR pathway with identified injection site at the right thenar prominence **(A-B)**.

Discussion

Flexor carpi radialis (FCR) tendonitis is described as an uncommon condition that is causing pain at the palmar aspect of the radial wrist. It is attributed to a process of inflammation, which is related to the sheath of the FCR tendon.[1,5] However, FCR tendonitis could be attributed to mechanical narrowing of the osteofibrous gliding tunnel engulfing the tendon sheath. It is usually due to traumatic phenomenon. hence, this justifies the irritation of the tendon in the trapezio-scaphoideal joint that subsequently causing radial wrist pain.[6] FCR tendonitis is a middle-aged condition which tends to affect the dominant hand, and known to be underdiagnosed despite the fact of high occurrence among sports and jobs with repetitive or overuse wrist activities.[1,2,7,8]

The FCR tendon runs within its own tunnel through a groove in the trapezium, which is separated by the deep portion of the transverse carpal ligament from the carpal tunnel.[9] The FCR tendon then inserts to the base of the second metacarpal after it enters the fibro-osseous tunnel. It then angles across the trapezial ridge adjacent to the trapezium, interestingly, this limited spaced tunnel makes the FCR tendon more likely to be impinged.[10] Hence, since the FCR tendon is in close proximity to the carpel tunnel, FCR tendinitis should be involved in carpel tunnel syndrome differential diagnosis.[11]

Patients with FCR tendonitis usually presents with pain and swelling over the palmar side of the radial wrist and around the thenar eminence. Resistance against radial deviation of the wrist may illicit tenderness over the radial wrist region.[2, 12] Soejima et al,[5] FCR tendinitis symptoms are still not well recognized as a cause of radial wrist pain. Clinical suspicion should be raised to avoid delayed diagnosis and management.[5] Radiological assessment of FCR tendonitis may show scapho-trapezium- trapezoid morphological alteration, osteoarthritis, and bone erosions.[1] Allred DW et al and Verellen K et al,[13,14] FCR endinopathy is an MRI obtained finding that may be symptomatic in variable cases. [13,14] Ultrasonography is mainly operator dependent, however, a well-experience operator can diagnose FCR tendonitis.[1]

As any tendinopathy, conservative management as such as a course of physiotherapy strengthening exercises, rest with splinting, stretching and oral antiinflammatory medications are the initial treatment options for FCR tendinitis patients.[2,5,15] Corticosteroid injection in the tendon sheath with local anesthesia may reduce the pain and help differentiating FCR tendonitis from other diseases.[4] Radial artery alongside its branching vessels are at high risk of injury during injection procedure, which requires careful skilled operator.[4]

Surgical intervention is meant by releasing the FCR tendon, in which by a volar incision is made over the FCR at the wrist joint. For the sake to identify the important regional neurovascular vessels, a blunt incision is advised to avoid iatrogenic trauma. The FCR tendon and the fibro- osseous tunnel are identified. Distal to the trapezium, the fascia over the tendon is released from the volar wrist crease. debridement of the FCR should be done alongside with bone excision if fraying of the tendon or bony impingement was found.[4] Surgical release showed a high rate of symptomatic satisfaction, and a reduced rate of recurrence.[16]

Conclusion

In our case, based on the patient's history and clinical examination, a diagnosis of trapezium canal syndrome was made. Then we have decided to proceed with non-operative steroid injection which yielded immediate relief of the symptoms confirming the diagnosis of trapezium canal syndrome. The patient condition was improved throughout the patient's follow up visits which emphasizes the role and efficacy of steroid injection in managing FCR tenosynovitis at the trapezium canal.

Acknowledgments

None.

Conflicts of interest

The authors declare no conflicts of interest.

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