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## Acute calcific tendinitis of the FCR tendon in a 24-year-old male: A case report

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### Abstract

Acute calcific tendinitis is an acute or chronic condition that typically affects the shoulder joint in patients 40 and older. Specifically caused by the deposition of calcium hydroxyapatite crystals in or around the tendon sheath, the cause is typically unknown but seems to be unrelated to underlying metabolic disturbances and pathologies. In this work, the case of left wrist pain in a 24-year-old male that was initially misdiagnosed but later identified as acute calcific tendinitis is highlighted.

**Keywords:** Acute calcific tendinitis, FCR tendon, 24-year-old male

### Introduction

#### Case Presentation

A 24-year-old right-hand-dominant male with a history of plaque psoriasis presented with a two-day history of progressively increasing left wrist pain. He denied any specific injury, trauma, or incident. He was unable to carry out routine tasks with his non-dominant hand, including holding light objects and turning doorknobs. He did not notice any redness, warmth, numbness, or tingling but did notice some increasing swelling on the volar aspect of the left wrist.

He initially arrived at the emergency room after suffering a vasovagal syncopal episode due to the pain. The initial diagnosis was DeQuervain's tenosynovitis for which ketorolac and prednisone were administered intramuscularly and prescribed for at-home use. A lateral wrist x-ray demonstrated a calcific density on the palmar aspect adjacent to the lunate bone (Figure 1). Laboratory results included a slight leukocytosis of 11.94, neutrophilia of 78%, and normal ESR of 12. He was instructed to immobilize the wrist in a splint at all times.

Despite taking the medications as prescribed, the pain intensified over the next few days. A repeat physical examination five days after the onset of pain revealed moderate edema and faint erythema along the volar-radial aspect of the left wrist just proximal to the carpus. Wrist range of motion was preserved in all planes but with increasing pain on forced supination and wrist flexion. He was able to make a weak fist and extend the digits fully. There was no tenderness to palpation over the carpal bones. Point tenderness was specifically noted over the FCR tendon distally corresponding to the location of the calcific deposit noted radiographically. The hand was neurovascularly intact with a 2+ radial pulse. Allen's test was negative. An MRI was performed the following day, which confirmed the diagnosis of acute calcific tendinitis of the flexor carpi radialis (FCR) tendon with associated flexor tenosynovitis.

Based on the above findings, the patient was given an intratendinous injection of cortisone to dissipate the calcium deposit and thus alleviate the symptoms. Low-dose prednisone and ibuprofen were taken for one week following the steroid injection. All symptoms resolved eight days following the injection and thirteen days following symptom onset.

### Review of the Literature

Calcific tendinitis is a condition that tends to take root in the tendons of the rotator cuff of the shoulder<sup>[1]</sup>. The crippling pain that arises as a result tends to come on with a moderately quick onset, limiting essentially all functions of the affected joint. The hydroxyapatite crystals that form within the tendon produce significant inflammation and lack of joint mobility<sup>[2]</sup>.

It is exceedingly rare to see a case of acute calcific tendinitis (ACT) not only in the wrist but also in a young adult.

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In such cases, it can often be misdiagnosed for tenosynovitis, inflammatory arthritis, septic arthritis, or even occult fracture; thus, advanced radiographic imaging is often required to confirm the diagnosis [3]. Although the pathophysiology of the condition is relatively obscure, the leading theories include trauma, stress [4], and local tissue hypoxia [5]. In the case of this patient, trauma was not a factor.

It is thought that the scarcity of literature of ACT in the hand and/or wrist has led physicians to overlook this clinical entity as a potential diagnosis [6]. As there exist very few case reports of ACT specific to the FCR tendon, a review of its diagnosis is warranted. DeQuervain's tenosynovitis may mimic ACT of the FCR tendon due to the pain it causes about the radial styloid but has a more gradual onset. In addition, it is more commonly seen in new mothers [7]. Although both can occur atraumatically, septic arthritis tends to present with more systemic symptoms, such as fever and malaise, which were not present in this patient. In addition, unsafe sexual practices may lead to septic arthritis due to *Neisseria* infection [8]. This patient had no such finding in his medical history.

Initial management includes immobilization of the affected joint, activity restriction, and anti-inflammatory medication [2]. In most cases, all symptoms resolve within two weeks of initial onset [9]. Although the condition tends to resolve on its own without treatment, administration of prednisone and a steroid injection in combination with splinting has been shown to decrease the duration and severity of symptoms [10]. Use of ultrasound during said injection may aid in locating the deposit [11]. It is of utmost importance to carry out a thorough physical examination, laboratory work-up, and diagnostic imaging to ensure that the correct diagnosis is made, given the rarity of this condition developing in the wrist in current literature.

Given that the majority of available case reports highlight ACT in the FCU tendon, its potential to develop in other regions of the wrist, such as in the FCR tendon in this case, cannot be discounted. The goal of elucidating this case is to shed light on the condition in order to promote awareness of its presentation, diagnosis, and treatment.



**Fig 1:** Lateral x-ray of the left wrist, showing micro calcification

### Conflict of interest statement

The authors declare that there is no conflict of interest.

### Statement of informed consent

Informed consent was obtained from all patients for being included in the study. Informed consent was obtained from all individual participants included in the study.

### Statement of human and animal rights

All procedures were followed in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008.

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