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# Calcific Tendinitis in the Elbow Presented as Acute Tennis Elbow

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## ABSTRACT

Calcific tendinitis occurs frequently in shoulder and hip region. Its occurrence in elbow joint is frequently misdiagnosed because of its rare incidence and similar clinical presentation with other acute conditions of elbow like trauma, infection and tennis elbow. Characteristic symptoms of this condition are acute onset of pain, tenderness and swelling on the lateral aspect the elbow. Plain Radiograph is the primary modality to distinguish and evaluate this condition. Awareness and familiarity with this condition helps in early diagnosis and avoids unnecessary treatments and biopsy as this condition is self-limited.

**Keywords:** Calcific tendinitis; self-limited; tennis elbow.

## INTRODUCTION

Calcific tendinitis is characterized by pathologic deposition of calcium hydroxyapatite crystals in the tendon fibers. Patients between 30 to 60 years of age are typically affected.[1] It mimic the symptoms of tennis elbow, infections, neoplasm or avulsion of lateral epicondyle of the humerus. It is a dynamic process that has successive stages of formative, resting and resorptive phase.[2] Each stage has characteristic radiographic and pathologic features. It occurs frequently in shoulder and hip joints, while it's occurrence in elbow is rare and not well reported in the literature.[3]

We report a rare case of acute calcific tendinitis over lateral epicondyle of right elbow with severe pain and radiographic features of calcification managed conservatively.

## CASE REPORT

A right handed 52 years female presented to our emergency with pain in the lateral aspect of the right elbow joint for two days which was acute in onset, severe in intensity. Her pain was 5/10 on Visual Analog Scale (VAS). There was no history of trauma, fever, injury or similar episode of pain in the past. Pain was non-radiating and aggravated on movement of her right hand. There was difficulty in picking up objects with her affected hand.

On physical examination, the right elbow was held in flexion. The overlying skin was warm and there was diffuse swelling on the lateral aspect of the elbow. There was localized tenderness just below the lateral epicondyle. Pain aggravated by active supination and pronation of the forearm and wrist extension. Cozen's test was positive and grip strength of right hand was decreased.

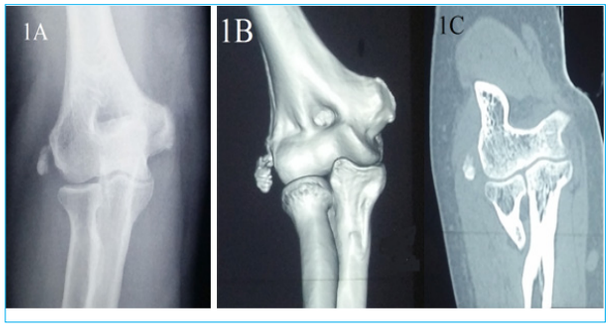


Figure 1. (A) Plain radiograph (B) 3-D CT scan and (C) Coronal CT scan, showing initial elongated hyperdense calcification in the lateral aspect of the lateral epicondyle.

The initial radiograph demonstrated hyperdense, elongated opacities on the lateral aspect of the joint line just distal to lateral epicondyle (Fig. 1A). 3D reconstruction CT scan showed irregular opacity in

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the lateral aspect of the epicondyle measuring approx 10 mm (Fig. 1B). Coronal section of CT scan showing elongated hyperdense calcification in the lateral aspect of the lateral epicondyle (Fig. 1C). There was normal lateral epicondyle with smooth margin bone contour. MRI showed calcification in the common extensor tendon with inflammatory changes in the surrounding tissue as shown by black arrow in the figure (Fig. 2). All laboratory findings were unremarkable

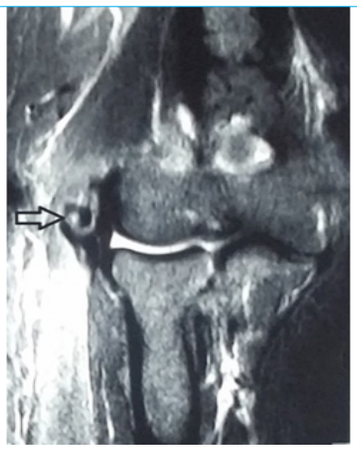

Figure 2. Initial coronal MRI showing calcification of the common extensor tendon.

Conservative treatment was then instituted by rest, oral non-steroidal anti-inflammatory drugs and splinting. The lady symptomatically got better by one week and near complete pain free by two weeks. With repeat radiograph after one week, it demonstrated partial dissolution of the calcification (Fig. 3B). Two weeks follow-up radiograph demonstrated complete dissolution of calcification (Fig. 3C).

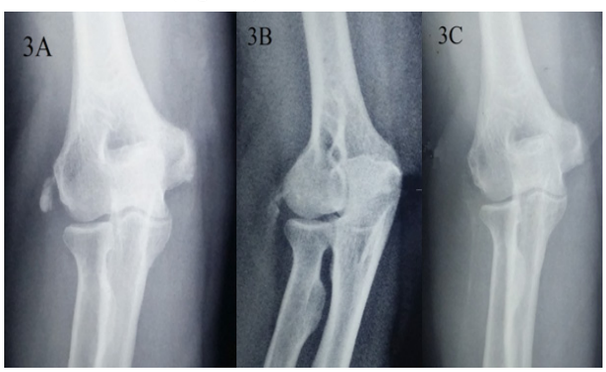


Figure 3. Sequential antero-posterior radiograph of the right elbow (A) initial radiograph showed dense calcification on the lateral aspect of the elbow (B) radiograph demonstrates partial dissolution of the calcification in 1 week follow-up (C) calcification completely disappeared after 2 weeks.

## DISCUSSION

Calcific tendinitis of elbow is uncommon and misdiagnosed with tennis elbow.[4] Pain in the lateral aspect of the elbow can be due to lateral epicondylitis (tennis elbow), radio-humeral joint pathologies and referred pain from the shoulder and neck. Most common cause being lateral epicondylitis.[5] Calcific tendinitis as a cause of pain at lateral aspect of the elbow is rarely reported in literature. The characteristic symptoms of calcific tendinitis of common extensor tendon are indistinguishable from that of tennis elbow except that of acute onset of pain, tenderness and swelling around lateral aspect of the elbow.

The calcium deposition disease is usually monoarticular. The etiology is not understood and many theories have been postulated like local hypoxia in tendon and soft tissue and subsequent metaplasia with formation of fibrocartilage and deposition of hydroxyapatite into psammoma-like bodies surrounded by inflammatory cells.[6] Some study showed significant increase in neovascularization and neoinnervation in cases of calcific tendinits with increase in mast cells and macrophages.[7] Although the etiology is not properly defined, the radiographic appearance and clinical course are better understood. Radiograpy is the primary modality to distinguish, evaluate and localise the calcific deposit in the tendon.[1]

Different imaging modalities can be helpful in evaluating calcific tendinitis. The lesion has aggressive appearance on x-ray, CT scan and MRI. There can be extensive soft tissue abnormalities around the affected area. The aggressive appearance shouldn't be confused with other lesion. The acute clinical presentation and location within the tendon aid in differentiating calcific tendinits from other entities.[1] Awareness of occurrence of calcific tendinits in lateral aspect of elbow can be helpful in recognizing this condition in this unusual site and manage accordingly. When diagnosis is suspected radiograph should be obtained to distinguish it from tennis elbow.

There are several treatment options for calcific tendinits like NSAIDS, needle aspiration, shock wave therapy, surgical therapy and medications like cimetidine.[3] It is dependent on nature and severity of the clinical manifestations of the disease. Usually calcium deposits seen on radiograph absorbed spontaneously over a period of 1 to 2 weeks.[2] Calcific tendinits is usually self-limiting condition. Initial management is typically conservative, NSAIDS being the mainstay of treatment. Along with NSAIDS, heat application and range of motion exercises can be started. Only when conservative management

failed, invasive treatment may be pursued.[8] Intra-lesional steroid injections may be of benefit. Needle aspiration of deposit may be performed but is not generally recommended as it is difficult to perform and has little therapeutic effect.[6] Surgical removal of the calcific deposit can be appropriate for refractory cases and failed other treatment. Familiarity with the clinical, pathological and radiological features of calcific tendinits facilitates diagnosis and avoid confusion with other entities and preventing from unnecessary biopsy and optimize treatment.[9]

## CONCLUSIONS

Calcific tendinits should be suspected in a patient presented with very acute lateral epicondylitis. Plain radiograph helps in diagnosing the condition. Most of the time it is self-limiting condition and can be managed conservatively.

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