



ACUTE CALCIFIC TENDONITIS OF INTRINSIC MUSCLES OF THE HAND IN A 24-YEAR-OLD FEMALE: A RARE CASE REPORT

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ABSTRACT

Acute calcific tendonitis of intrinsic muscles of the hand is an uncommon manifestation of hydroxyapatite crystal deposition disease and may mimic infection, inflammatory arthritis, or traumatic conditions. We report a 24-year-old woman who presented with acute hand pain with no history of trauma or any known medical comorbidity. Radiographs of the right hand demonstrated a small, well-defined periarticular calcific density adjacent to the fourth metacarpophalangeal region without fracture or dislocation. Based on the clinical and radiographic findings, acute calcific periartthritis or tendonitis was considered. Conservative management with non-steroidal anti-inflammatory medication and activity modification resulted in symptomatic improvement. This case highlights the importance of accurately diagnosing the disease as there is similarities with many other diseases and identify characteristic radiographic findings to avoid unnecessary investigations and inappropriate treatment.

KEYWORDS : Calcific Tendonitis; Hand Pain; Hydroxyapatite Deposition Disease; Radiography

INTRODUCTION

Acute calcific tendonitis is caused by deposition of hydroxyapatite crystals¹ in periarticular soft tissues. Although commonly reported around the shoulder⁴, involvement of the hand is uncommon. Patients typically present with acute pain, localized swelling, tenderness, and restriction of movement. Recognition of the characteristic radiographic appearance³ is important. The condition is usually self-limiting and responds well to conservative treatment¹.

Case Presentation

A 24-year-old female presented with pain in the right hand of acute onset with difficulty in movements of fourth finger. There was no history of major trauma, fever, or systemic illness. Clinical examination revealed localised tenderness and edema around the fourth metacarpophalangeal region with painful hand movements. Neurovascular examination was normal.

Plain radiographs of the right hand (anteroposterior and oblique views) demonstrated a small oval periarticular calcific density adjacent to radial side of the fourth metacarpophalangeal joint region, without evidence of fracture, dislocation, erosive arthropathy, or aggressive osseous lesion. The appearance was consistent with a localised calcific deposit within the periarticular soft tissues.

Blood investigations showed normal total count, ESR was slightly raised, CRP was normal. She was given NSAIDs¹⁰, advised to restrict activities with her hand for a week. After a week the pain decreased, edema subsided and patient went back to work. After one month, patient presented with the same complaints, advised her rest from activities, splint given for two weeks, NSAIDs were prescribed. On followup, her pain and edema subsided, range of movements of right hand improved.



Figure 1. Anteroposterior and Oblique Radiographs of the

Right Hand Showing a Small Periarticular Calcific Density Adjacent to the Fourth Metacarpophalangeal Joint , Compatible With Calcific Tendonitis.

DISCUSSION

Calcific tendonitis of the hand is a rare but important differential diagnosis in patients presenting with acute hand pain. The condition results from hydroxyapatite crystal deposition and may be mistaken for septic arthritis⁸, gout⁶, inflammatory arthropathy, or occult trauma. There is frequent misdiagnosis of the condition⁵.

Radiographs usually show a homogeneous amorphous calcific focus adjacent to a joint or tendon insertion. Laboratory investigations are often normal. Conservative treatment with non-steroidal anti-inflammatory drugs, rest, and activity modification is generally sufficient, with symptoms resolving over days to weeks.

The radiographic findings in the present case were characteristic and along with clinical examination enabled a confident diagnosis, thereby preventing unnecessary invasive investigations. Ultrasound scan of the concerned area is the next investigation advised to confirm the diagnosis and accurate location of calcification. The findings correspond to hyperechogenic calcification foci with or without acoustic shadow, tendon thickening and increased vascularity in colour doppler³. Awareness of this uncommon presentation is particularly relevant in young patients, in whom inflammatory and traumatic etiologies are often considered first.

There is a proposed theory for pathogenesis for this condition. The affected tendon is transformed into fibrocartilage with a predilection for calcification⁷. The most frequent locations in the hand and wrist include extensors of fingers, flexor carpi ulnaris, extensor carpi ulnaris tendon. Very rarely described at interphalangeal joint, metacarpophalangeal joints, intrinsic muscles of hand. The standard of reference for the diagnosis is represented by demonstration of crystals in the joint synovial fluid by polarizing light microscopy² but difficult technically. CT scan is used to detect the calcification in case if plain radiograph fail to visualise the lesion and is superior. MRI shows calcifications as hyper-intense areas in imaging sequences.

CONCLUSION

Acute calcific periartthritis should be considered in the differential diagnosis of acute hand pain especially around joints. Recognition of the characteristic periarticular calcific deposit on radiographs as well as careful clinical examination allows prompt diagnosis and appropriate conservative management.

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