

Gouty Tenosynovitis of the Digits: A Case Report

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Abstract: Gouty tenosynovitis in the hand is a rare entity. To date the limited cases described have involved predominantly extensor tendons in the fingers and flexor tendons in the palm or wrist. Flexor tendon involvement is less common and has been reported only in five cases to our knowledge distal to the palm. We report a new case of gouty tenosynovitis of flexor tendon in a finger in a patient with advanced rheumatoid arthritis.

Keywords: Gouty tenosynovitis; flexor tendon; finger.

INTRODUCTION

Gouty involvement of the hand, although unusual, is seen with extensive involvement elsewhere in the body [1-4]. Extra-articular manifestations of gout are numerous and can present in the hand as nerve entrapment, dermatitis, tophaceous infiltration of the tendon, joint contractures, skin ulceration, a draining sinus, or tenosynovitis [5]. The usual lesions are tophi, which are subcutaneous or bursal deposits of aggregated crystals of monosodium urate [2, 3]. The literature about gouty tenosynovitis has focused on involvement of the hand and/or wrist leading to carpal tunnel syndrome [6, 7]. We know of only 5 previously described cases of gouty tenosynovitis with more distal flexor tendon involvement of the hand [5, 8]. We present a case of gouty tenosynovitis of flexor tendon in a finger to heighten awareness of this rare entity and to provide a setting for a discussion of management.

CASE REPORT

A 68 years-old women, with diabetes, hypertension, chronic renal failure, for which the patient was receiving medications and a chronic asymptomatic hyperuricemia. The patient had also a history of established rheumatoid arthritis, for which she was receiving in a first time Methotrexate and sulfasalazine and in second time Rituximab.

Last four years, the patient presented three episodes of tenosynovitis of the flexor tendon of the second left finger, the last episode started 4 months ago.

On clinical examination, a hard swelling was noted in volar aspect of left index finger (figure 1).



Fig-1: Tenosynovitis of flexor tendon of left index finger

Echography-doppler confirmed the existence of heterogeneous content (snow storm appearance), within the flexor tendon of the left index, close to its

insertion on the distal phalanx, with associated hyperemia on color doppler imaging (figure 2).



Fig-2: ultrasound noted a “snow storm appearance” within the flexor tendon of the left index, with associated hyperemia on color doppler imaging

Cytobacteriological study of ultrasound draining content ended in a mechanical and sterile liquid. No acid fast bacilli was found in Ziehl-Neelsen staining and in culture.

Blood analysis revealed a biological inflammatory syndrome with an accelerated erythrocyte sedimentation rate of 57 mm and a C reactive protein increased to 20.1 mg/l. rate of leukocytes was quietly increased to 10640 elements/mm³.

A uric acid level of 74.66 mg/l (normal < 60 mg/l) strengthened a preoperative diagnosis of gouty tenosynovitis. Blood cultures and cytbacteriological examination of urine (CBEU) was negatives. Tuberculin skin test, microbiological examination of sputum and chest X-ray was negatives.

Creatinine level was increased to 17 mg/l. Glomerular filtration rate was 32 ml/min. Plain x-rays showed no bony abnormalities of the left index finger.

In the fear of an infectious tenosynovitis, the patient received a bi-antibiotic treatment with intravenous flucloxacilline (6 g/day) and oral ciprofloxacin (500 mg/day) during a month, without any improvement of the tenosynovitis.

Surgical exploration was conducted under local anesthesia. A whitish masses measuring between 0.4 and 0.6 cm was observed, with a chalky appearance, encircling the flexor superficialis tendon of the left index finger. After removal of the gouty deposit, there was no abnormality affecting the tendons of the left index (figure 3).



Fig-3: Surgical exploration showed whitish masses measuring between 0,4 and 0,6 cm, with a chalky appearance

The tenosynovitis content was sent for histological analysis, which confirmed the existence of gouty deposits. Medical treatment of acute gout was performed with Anakinra (Kineret, 100mg/day) during

three days, and treatment of hyperuricemia included Febuxostat (Adenuric, 80mg/day) and total meat abstinence.

After physiotherapy, the patient regained normal active motion of the left index finger.

DISCUSSION

Gout is a metabolic disease, characterized by the deposition and collection of sodium urate crystals in articular, peri-articular, renal, tendon, nerve, and synovial sites [9]. Gouty involvement of the hand, although unusual and particularly rare in flexor tendons of fingers, is seen more likely in patients with a longer history of gout [5, 9-13]. Review of the past medical history provides an invaluable tool to raise the index of suspicion for the relatively rare etiology of gout in the differential diagnosis of tenosynovitis [8].

Acute tophaceous gout may present as swelling of the tendon sheath, tenosynovitis, pain, and warmth, and thus may be difficult to distinguish from infection [12, 13].

An elevated serum uric acid level to greater than 70 mg/l in a patient with a flexor tendon swelling suggests the presence of gouty tenosynovitis [9, 11].

Ultrasound can visualize some evocative aspects of the Gouty origin of tenosynovitis and will guide the puncture [13]. Magnetic resonance image may be useful to show local tophaceous involvement of the tenosynovium [11]. Gouty tenosynovitis can be confirmed by the surgical findings of tophi within the tenosynovium (figure 3) [11], as well as examination of surgical specimen under a compensated polarized light microscope demonstrates negatively birefringent crystals, 0.5-8µm in length, consistent with sodium urate, surrounded by a granulomatous reaction containing foreign body giant cells [11].

Anakinra (Kineret) is an effective treatment option for acute gout in critically ill patients, who traditionally are difficult to treat because of contraindications to standard therapy [14]. Febuxostat is more effective and safer than Allopurinol in patients with impaired renal function. No dose adjustment is required in mild-to-moderate renal impairment. Long-term extension studies confirmed the efficacy and tolerability of Febuxostat [14].

Surgical management of flexor tendon gouty tenosynovitis includes exploration, tenosynovectomy and debridement of tophi [11]. Surgery provides an opportunity to achieve a firm diagnosis by sending the specimen to be analyzed for uric acid crystals and may help improve postoperative motion [11].

CONCLUSION

Early diagnosis based on a high index of suspicion is paramount to the initiation of proper treatment of gouty flexor tenosynovitis of the fingers.

Awareness of this disease entity as well as familiarity with its treatment will lead to more confidence in managing this rare condition.

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