Multiple gouty tophi over hands-A Case Report

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Introduction

Gout is derived from gutta (Latin for drop), as it was believed in the 13th century that poison falling in drops into the affected joint caused gout. But, Gout is actually result of inflammatory response to deposition of monosodium urate crystals (MSU) secondary to hyperuricaemia. Normal uric acid levels are between 3.4-7.0mg/dl. Hyperuricemia is caused by either increased production or decreased excretion of uric acid. Recurrent acute gout develops chronic tophaceous gout characterized by tophi (macroscopic aggregates of MSU) in soft tissues. Gout presents with joint pain, mainly first metatarsophalangeal joint, tophi and redness of skin over the joints. The tophi usually resolve with medication but some giant swellings are resistant, which require excision/debulking.

Case Report

A 30-year-old man, software engineer by profession presented to our clinic with multiple swellings over bilateral hand and foot since 12 years. He is non-alcoholic and also not on purine rich diet. He had on and off pain with no significant relief with NSAIDS. The multiple swellings were progressive and some of the swelling opened out spontaneously to secrete powdery discharge. His functional activity in hand was restricted, that is using computer keyboard/writing.

On examination he had multiple swellings overs his both hands, on the extensor tendons at wrist, metacarpophalangeal(MCP) and interphalangeal(IP) joints level.

The finger flexions was grossly restricted at MCP and IP joints, impairing his functional activity.(Fig. 1) On evaluation, his serum uric acid level was 9.4mg/dl (N- 3.4-7mg/dl). His renal and hematological parameters were non-significant. Radiographs of hands were unremarkable.

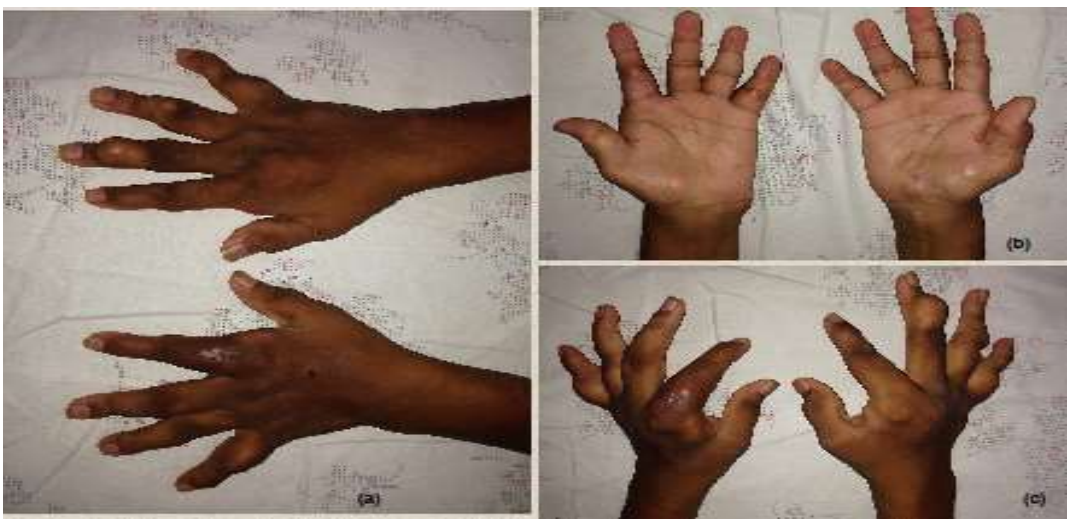

Fig. 1: Preoperative clinical photo showing multiple tophi over bilateral hand; (a) dorsal view, (b) palmar view and (c) lateral view

After a course of colchicine, febuxostat and allopurinol, for 4 months, his pain subsided and his uric acid levels decreased significantly. But his tophi on hand showed no improvement and he was functionally and socially debilitated. He was taken up for excision of tophi from hand under general anesthesia using tourniquet. . Only, the tophi causing functional impairment was debulked from the extensor tendons. Skin was incised longitudinally over

the tophi and the complete tophi were exposed all around. The tophi were strongly adherent to the extensor tendons and were impossible to denude the tendon from it. Tophi were yellowish- white chalky material. It was excised in piece meal trying to preserve the tendon, as much was possible. In certain area part of the tendon was injured and abraded. It was washed out with warm saline (Fig. 2). Skin was closed with monofilament, immobilized with a splint for 2 weeks and followed by physiotherapy. Hisopathological examination confirmed the diagnosis of gout. His flexion movement and cosmetic appearance improved significantly, and the medication for gout was continued. (Fig. 3)

Fig. 2: Intraoperative images; (a) tophi over dorsum right middle finger, (b) tophi over dorsum of right ring finger, (c)Post debulking of right hand and (d) primary closure with drain.

Fig. 3: Six months follow-up images; (a) volar view, (b) flexion range seen from radial aspect of finger, (c) dorsal view and (d) flexion range seen from palmar aspect

Discussion

Surgery for gout is palliative and not curative[(1)]. It takes many years from the initial episode of acute gout to develop into tophi. In our patient, we operated for his functional deficits and cosmetic reasons. Some of the indication for surgical intervention of tophi are,[(1)(2)] (a) when tophi are unsightly;(b) when tophi are painful; (c) when tophi interfere with tendon function; (d) when tophi threaten to cause skin necrosis and ulceration; (e) when tophi have ulcerated or sinuses are present: (f)

when tophi encroach upon nerves causing symptoms of compression; (g) when joints are being destroyed and are painful; and (h) when the total amount of urates in the body can be lowered by excision of readily accessible large tophi, (i) cosmetic restoration, especially for tophaceous gout in the hand and wrist. Radiographs are necessary to look for erosions. The solubility increases two fold with the use of warm saline between 25-37°C[3]. Complications of surgery include –wound healing or skin necrosis. Other surgical options include aspiration, incision and drainage (in fluctuant tophi) and recently hydrosurgery[4] and shavers[5] are also been employed for debulking.

We would like to conclude that preventions of tophi is better with adequate nutrition and appropriate medication. The results of tophi excision are always suboptimal and it is highly impossible to debulk the tophi completely without risking the underlying structures.

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