

# Chronic Tophaceous Gout with Unusual Large and Multiple Tophi at Various Joints with Acute Cellulitis like Presentation at Great Toe: Case Report

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**Abstract:** Gout is a metabolic disease, which is characterized by acute or chronic arthritis, and deposition of monosodium urate crystals in joint, bones, soft tissues, and kidneys. But large tophi are unusual in chronic gout. We report the case of a 48-year-old resident of Kandukur region of Rangareddy district, Telangana, Hyderabad, presenting chronic tophaceous gout with unusual large tophi involving multiple joints: hands, feet, elbows, and knees and acute cellulitis/Abscess like presentation on left foot. Laboratory workup revealed normal serum uric acid (5.4 mg/dl, male it is 3.5–8.7 mg/dL and in case of female it is 2.5–6.9 mg/dL) with normal renal function test. In untreated patients, chronic tophaceous gout may develop, which is characterized by chronic destructive polyarticular involvement and tophi. The treatment consists to decrease serum uric acid level which eventually allows the regression of tophi.

**Keywords:** Gout, tophi, urate crystals, Cellulitis, Abscess, Great toe

## 1. Introduction

Gout is a metabolic disease that can manifest as acute or chronic arthritis, and deposition of monosodium urate crystals in joint, bones and different body tissues, including the skin and soft tissues. Chronic tophaceous gout frequently occurs after 10 years or more of recurrent polyarticular gout. Our case is a rare form of tophaceous gout, which presented with generalized tophi with left foot cellulites and discharge from great toe.

## 2. Patient and Observation

A 48yr old male with a 12-years history gout on Tab Allopurinol 100mg bid was admitted for Painful swelling left foot with hot, shiny and tender skin and chalky white to serous discharge for 7 days. There is no history of any Trauma or blunt injury, no history of fever. He was noted to have multiple hard swelling at both elbows, both knees, both hands, and both foot and Great toe. The swelling developed over last 8-10 years, progressively increasing in size. There was no family history of gout, but personal history of regular alcohol use, and high meat and other protein rich diet intake.

Physical examination revealed that there were multiple large firm tophi over feet (figure 1,2) bilateral hands (figure 4,6) elbows, and knees (figure 3,7) Elbow (figure-5). Some of them are ulcerated and discharged white chalky material. He has history of Hypertension and Diabetes, Epilepsy, Asthma, Tuberculosis. Laboratory workup revealed elevated serum uric acid (5.4mg/dl. Normal in male it is 3.5–8.7 mg/dL and in case of female it is 2.5–6.9 mg/dL), with normal renal function test: blood urea 20mg/dl (normal: 15-40 mg/dl) and serum creatinine 0.8mg/dl (normal: 0.8-1.5 mg/dl). The patient was treated with Indomethacin 25mg bid, Allopurinol (100mg/day) and Colchicine (1mg/day). On day 2 of admission he was operated for left foot and great toe swelling with discharging discharge, Incision and Drainage (figure 8,9) was done and thick chalky deposits removed out along with pus collected in connective tissue and thorough wash given and Aseptic dressing done with compressive Bandage. . Specimen collected was sent for Crystal for microscopy and Pus for Bacterial culture and sensitivity (figure-10). He was put on Anti-Inflammatory, Analgesics, Antibiotics and PPI and Allopurinol, Colchicine. His condition improved.



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7



Figure 8



Figure 9



Figure 10

### 3. Discussion

Gout is a disorder of purine metabolism and results from long-standing hyperuricemia and urate crystal deposition in various tissues. In the first stage, it usually affects the first metatarsophalangeal joint and less commonly other joints. The next most frequent localizations are the midtarsal, ankles, knees and arms [1]. Older age, male sex, postmenopausal state and black race are related to a higher risk for development of the disease. Also, the use of certain medications may trigger gout (diuretics, cyclosporine, aspirin,) [2]. In untreated patients, chronic tophaceous gout may develop, which is characterized by chronic destructive polyarticular involvement and tophi. Chronic tophaceous gout frequently occurs after 10 years or more of recurrent polyarticular gout. Tophi can occur in soft tissue, osseous

tissues, ligaments and different organs and either in presence or absence of gouty arthritis. Tophi are typically found on the helix of the ears, on fingers, toes, wrists and knees, on the olecranon bursae. [3] and on the cardiac valves [4]. The prevalence of gout is much higher in men than in women and rises with age. Although the prevalence of tophaceous gout, principally the generalized form of it, has decreased in the past years, the disease still exists likely due to the absence of an accurate diagnosis and therapy [5]. Our case is had large tophi, which are unusual in chronic gout. If left untreated, hyperuricemic patients (serum urate level  $\geq 68$  mg/l or  $400 \mu\text{mol/l}$ ) can evolve from intermittent arthritis to polyarticular tophaceous gout with symptoms between attacks. Lowering serum urate levels with xanthine oxidase inhibitors or uricosuric agents prevents acute flares and tophi development [6]. The recommended target serum uric acid concentration is  $<60$  mg/l ( $357 \mu\text{mol/l}$ ) [5]. Although

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controversial, recommendations have been made to achieve a target serum urate level <50 mg/l (297 μmmol/l) in severe chronic gout patients, as this concentration may be associated with greater depletion of synovial fluid crystals and a reduction in tophus size [6–7]. Surgical treatment is seldom required for gout and is usually reserved for cases of recurrent attacks with deformities, severe pain, infection and joint destruction [8]. It's also indicated when tophi are unsightly, painful; or when it interfere with tendon function or causes skin necrosis and ulceration; or encroach upon nerves causing symptoms of compression [9].

#### 4. Conclusion

The treatment of gout should be undertaken early in order to avoid the evolution of the disease to the chronic tophaceous form responsible joint deformities and their functional consequences.

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