CASE REPORT

# Gouty Polyarthritis–An Uncommon Presentation

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**Abstract**

Crystal arthropathies are a group of disorders produced due to deposition of crystals in and around joints. These are usually monoarticular, but some 10% of the patients with mono sodium urate crystal arthropathy (Gout) can be polyarticular. However, in present set up with much advancement in diagnostic and therapeutic modalities, the number of patients of gout with polyarticular involvement is less common. Here we present a case of gouty polyarthritis with a prolonged intercritical period.

**Key Words**

Crystal arthropathy, Gout, Mono-sodium urate (MSU) crystals, Polyarticular, Tophi

## Introduction

Hyperuricemia is seen in 2-13.7% of the general population and the prevalence of gout is between 1.3 and 3.7% (1). The higher the serum urate level, more likely an individual is to develop gout, in addition to cardiovascular disease and death (2). Gout when monoarticular commonly involves Ist meta-tarsophalangeal joint (MTP) and when polyarticular can involve any of the joints but usually involves the joints of the lower limb (3).

## Case Report

FC, 62 year old male, non-hypertensive, non-diabetic, smoker and alcoholic (abstained for 20 years) presented with the complaints of pain and swelling of multiple joints for last 3 years and multiple subcutaneous swelling for last 3 months. Three years back patient started with the pain and swelling in left knee which was severe in intensity, continuous in nature with increased severity during night which disturbed his sleep, not associated with morning stiffness and had no aggrevating or relieving factor. Some analgesics and medication for local application were prescribed. Intra-articular injections in left knee were given once a week for a total of three injections and pain got relieved. About 1½ months after the onset of pain in left knee, patient started having pain and swelling in the right knee as well (Fig. 1). This was followed by pain and swelling in the left forefoot mainly involving the base of big toe and the proximal interphalangeal joints of the toes for which he took some *desi* medicine only. Within a span of four months, patient started having low backache followed by involvement of the joints of opposite limb. Later on left shoulder, left middle finger, right little finger were also involved (Fig. 2). For the past three months patient has developed multiple subcutaneous swelling (tophi) at different sites including left big toe, right big toe, both elbows some of which ruptured and discharged chalky white deposits (Fig. 3). Patient gives history of similar joint pains 20

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years back which was increased in severity whenever he used to take alcohol. This was the reason for which he stopped taking alcohol thereafter.

On investigation, patient was anaemic with Hb–8.5gm%; TLC–6500/cumm; DLC–$P_{64}L_{32}M_3E_1$; PBF–Dimorphic blood picture; Bone marrow examination–megaloblastic changes with adequate iron stores; Urea–32mg/dl; Creatinine–1.2mg%; $Na^+$–138meq/lt; $K^+$ – 4.2meq/lt; SGOT–44Iu/l; SGPT–36Iu/l; $APo_4$–13 ka; S. Cholesterol–194mg/dl Triglycerides–184mg/dl; LDL–100mg/dl; HDL–38mg/dl; S. Uric Acid–11.2mg/dl; Urine R/E–NAD; 24 hour urinary uric acid–432mg/24 hour; Rheumatoid factor–Negative; USG and KUB abdomen did not reveal any stone in the kidneys. X-ray of the hands showed bone erosions with sclerotic margins in the distal part of proximal phalanx of left middle finger associated with soft tissue swelling of right little finger (Fig. 4). X-ray of the feet showing lytic lesion in interphalangeal joint of both big toes and also soft tissue sweling around interphalangeal joints of other toes. (Fig. 5). Microscopic examination of tophi–needle shaped. mono- sodium urate crystals (Fig. 6).

Treatment was started with colchicine 0.6 mg BD and indomethacin and once the acute pain got subsided, patient was started on allopurinol 200 mg a day along with colchicine. Patient has been advised a regular and close follow up.

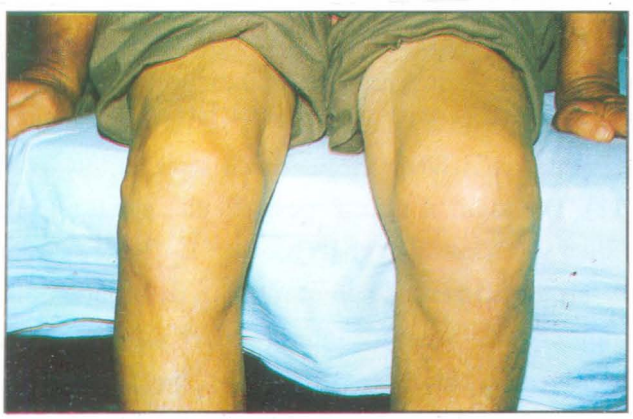

**Fig. 1. Photograph showing swelling of both knees.**

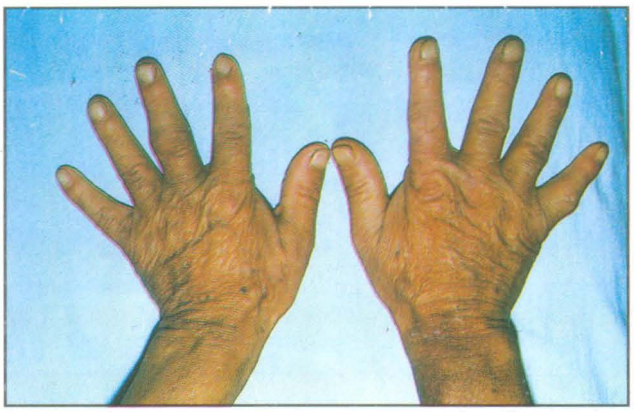

**Fig. 2. Photograph of hands showing swelling of proximal interphalangeal joints of right little finger and left middle finger.**

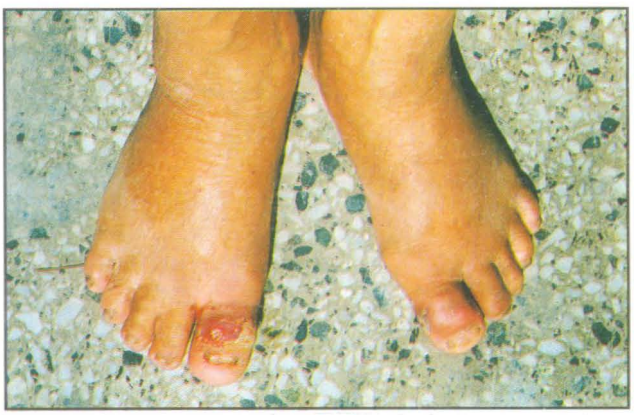

**Fig. 3. Photograph of the feet showing the burst tophi with chalky exudate on right big toe and unburst tophi on left big toe. Swelling of the soft tissues around other interphalangeal joints and metatarsophalangeal joints is also seen.**

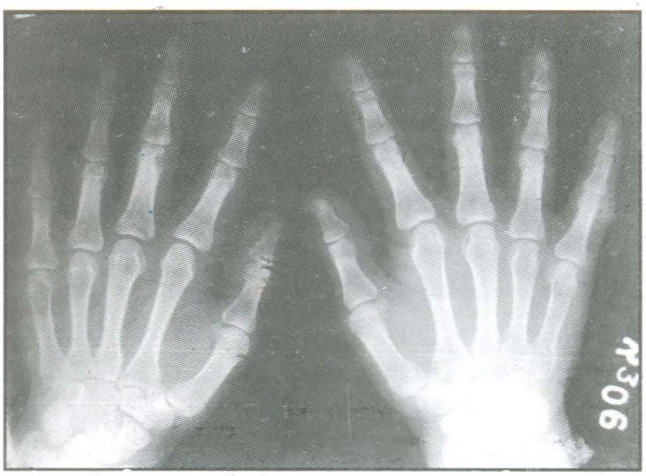


**Fig. 4. X-ray of hands showing lytic lesion in proximal phalanx of left middle finger and soft tissue swelling adjoining proximal interphalangeal joint of right little finger.**

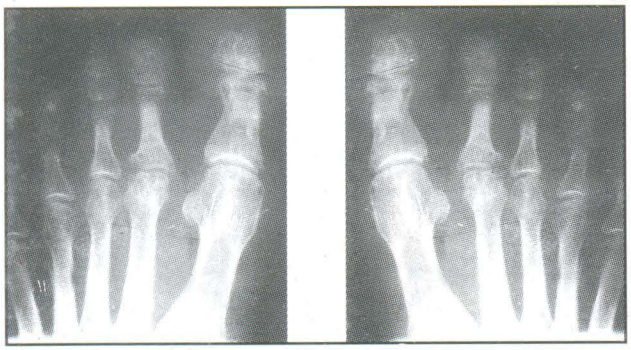

Fig. 5. X-ray of the feet showing lytic lesion in proximal interphalangeal joint of both big toes and also soft tissue sweling around interphalangeal joints of other toes.

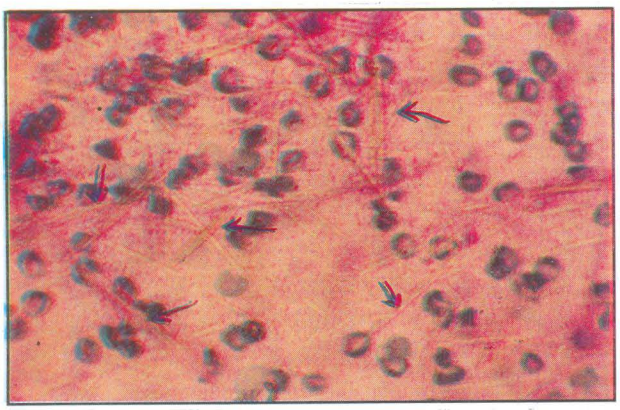

Fig. 6. Photomicrograph showing needle shaped mono-sodium urate crystals (MGG Stain, X400).

## Discussion

Gout is one of the crystal arthropathies with deposition of mono-sodium urate crystals in and around joints and also various tissue spaces resulting in formation of tophi (4). The deposition of these crystals result from raised levels of uric acid in blood (hyperuricemia) and various body fluids. Hyperuricemia, however, is not an essential requirement for diagnosis of gout. The clinical manifestations of gout relate to acute or chronic situation. Acute gout is eight times more common in men and occurs between third and sixth decade of life (5). Commonest joint to be affected is first metatarsophalangeal joint (MTP) also referred to as podagra. However, in about 10% of patients, the initial presentation may be polyarticular with sparing of the first MTP joint and similar involvement is seen in 40% of patients on long term follow up. The polyarticular involvement is usually symmetrical and ascending type with involvement of hand joints. It is usually seen in postmenopausal females and elderly males, particularly those taking diuretics (6). Following an acute attack, some patients remain free of symptoms for long periods, the intercritical period (7). Most of the patients will have second attack within six months to two years (8). The frequency of attacks increases with time in untreated patients, however, the onset of attacks are less explosive. Others experience repetitive attacks with shortening of the intercritical period and polyarticular symptoms leading to diagnostic confusion. However, our patient when started with pain was neither elderly nor on diuretics but still joint involvement was polyarticular. and the intercritical period was about 20 years. Recurrent acute attacks may result in chronic gout characterised by oligo–or polyarticular involvement with no pain free period. Much of the disability is due to tophi which produce destructive deforming arthritis and non-healing ulcers. Classic location for tophi are joints of hands or feet, helix of ear, olecranon bursa and achilles tendon (9). Our patient had tophi on the interphalangeal joints of great toe bilaterally and elbows as well accompanied with the swelling of first metatarsophalangeal joint and interphalangeal joints of other toes. With the use of uric acid lowering drugs, the incidence of tophi has decreased from 53% to 17% (10). Another series has reported incidence of tophaceous gout as low as 3% (11). The tophi appear as periarticular swelling filled with a soft, cheesy or chalky material. The tophaceous material will reveal numerous typical mono sodium urate crystals when examined under polarising light microscopy. However, in our case because of non-availability of polarizing microscope the tophi were examimed under the light microscope and mono sodium

urate crystals were identified because of their needle shape and intracellular location. Light microscope has a sensitivity of about 80% in detecting mono sodium urate crystals and can be used in limited resource set up (12).

It is concluded that the patients of gouty arthritis should be treated at the earliest with colchicine and or NSAID and antihyperuricemic therapy shuld be started after the acute attack is controlled (usually 4 weeks) along with prophylactic dose of colchicine or NSAID to keep the uric acid level below 5 mg/dl in order to prevent the recurrence and complications like tophi and renal calculi.

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