CASE STUDIES

# Chronic tophaceous gout with anti-CCP positivity: A rare presentation

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**Abstract**

Persistent gout may progress into a condition termed as chronic tophaceous gout, which involves the deposition of nodular mass of uric acid crystals called tophi in various soft tissue areas of the body. Generally, the anti-cyclic citrullinated peptide (anti-CCP) antibody testing is considered as a highly specific confirmatory test for RA. We present here a rare case report of chronic tophaceous gouty arthritis with anti-CCP positivity.

Keywords: rheumatoid arthritis, gout, uric acid, anti-CCP

## Introduction

Tophaceous gout normally affects the regions like great toe, olecranon, and hand.[1] It is difficult to differentiate RA and tophaceous gout, as the conditions such as morning stiffness, symmetrical distribution and positive rheumatoid factor are seen for both the diseases.[2] The present study highlights the rare presentation of chronic tophaceous gout with anti-cyclic citrullinated peptide (anti-CCP) positivity, which progressed to gouty nephropathy and urolithiasis.

## Case report

A 45-year-old male patient was referred to the clinic with a history of walking inability due to pain in both the feet and knees since 1 month. He had typical episodic pain in the 1st metatarsophalangeal (MTP) joint since 10 years, which responded well to NSAIDs. His history revealed a previous hospital admission for reduced urine output and pedal edema. His abdominal ultrasonography showed multiple tiny non-obstructive calcifications in the renal calyx with normal-sized kidney. Though the initial creatinine level reported was 2.2 mg/dl, it stabilized within one week. A diagnosis of analgesic nephropathy was made and was asked to avoid NSAIDs. However, the patient subsequently presented with polyarticular arthritis and nodules over the elbows and the MTP joints. Needle aspiration of the nodules revealed white chalky aspirate suggestive of tophi. The results of lab investigations are given in table 1. X-ray of the feet showed punched-out erosions suggestive of gout (Fig 1). The multiple non-obstructive calcifications noted were suggestive of urolithiasis with grade 1 renal parenchymal changes, indicative of acute renal injury. The patient initially had episodic gout, which later developed into chronic tophaceous gout with gouty nephropathy and urolithiasis. The patient was started on colchicine 0.5 mg, short course of oral steroids for pain, and hydroxychloroquine 200 mg twice daily.

Further follow-up showed that the patient had become asymptomatic and the tophi had reduced in size. His renal functions had become normal.

## Discussion

Tophaceous gout is a rare clinical manifestation, which seldom co-exist with RA. Literature review shows very few cases of co-existence. If the patient has polyarticular involvement with nodule formation, it is difficult to differentiate RA with rheumatoid nodules from tophaceous gout. In such cases, examining the nodule aspirate may help to differentiate the conditions.

Rheumatoid factor, which is generally considered as a serological marker of RA, may appear positive in some elderly healthy patients and also in other rheumatic and non-rheumatic diseases.[3] Anti-CCP antibodies is documented to be highly specific in diagnosing RA in

**Fig 1: X-ray of the feet showing multiple erosions with sclerotic margin-preserved joint space**

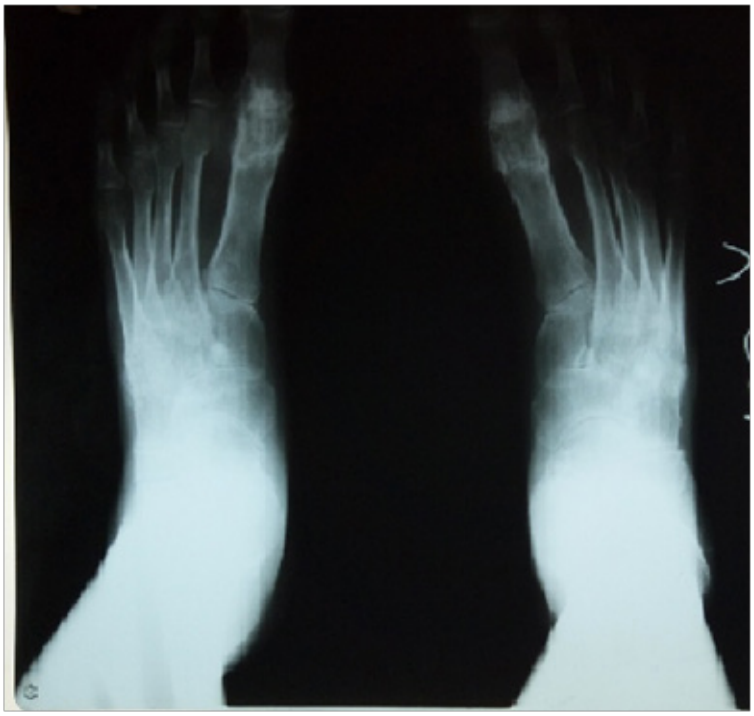

**Table 1: Results of clinical and lab investigations**

| Parameters evaluated | Results |
|---|---|
| Hemoglobin (gm/dl) | 12.9 |
| Total WBC count (c/cmm) | 9100 |
| Neutrophils (%) | 69 |
| Lymphocytes (%) | 28 |
| Eosinophils (%) | 01 |
| Monocytes (%) | 02 |
| Basophils (%) | 00 |
| Platelet count (lakh/cmm) | 4.70 |
| ESR (mm) | 95 |
| SGOT (IU/L) | 20 |
| SGPT (IU/L) | 33 |
| Rheumatoid factor (IU/dl) | 12 |
| Serum creatinine (mg/dl) | 1.4 |
| Random blood sugar (mg/dl) | 95 |
| CRP (Turbidimetric method) (mg/dl) | 54 |
| Serum uric acid (mg/dl) | 12.2 |
| Anti-CCP IgG | 44 (moderate positive) |

contrast to RF, and it is rarely reported in patients with gout. Though anti-CCP was positive in the current case, the patient did not show any specific symptoms of RA.[4] In addition, it should be noted that the RA had not been progressed for the past ten years and the patient was asymptomatic in between the episodic occurrence of the disease. Ultrasound examination of the elbows, wrists and knees was normal. Based on the clinical examination, examination of aspirated material, and typical presentation of erosions in the 1st MTP joints the patient was diagnosed to have chronic tophaceous gout.

A similar case study by Sarmento *et al*. has reported a rare presentation of polyarticular tophaceous gout with atypical involvement of the joints of the hands and diffuse subcutaneous nodules. Based on thorough clinical examination and further evaluation, the diagnosis was concluded as mutilating gout mimicking RA.[2]

The study by Bas *et al.* has concluded that the anti-CCP, though more specific than RF, cannot be considered as a definite test for the determination of co-existence of gout and RA. In one such study, the authors could identify only one patient with anti-CCP and RF positivity, out of 7 cases with co-existing gout and RA.[3] In certain cases, dual-energy CT of the affected joints and nodules may help to detect the presence of uric acid crystals.

The present study also highlights the need of careful diagnosis to distinguish RA from polyarticular gout and the necessity to consider multiple diagnostic factors including the detection of serological markers, the presence of tophi, and the characteristic appearance of gouty erosions. Among the serological markers, anti-CCP may appear positive in other rheumatic disorders, hence careful interpretation of the findings in conjunction with evaluation of clinical history is warranted.

**Competing interests**
The authors declare that they have no competing interests.

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