

Tophaceous Gout: Uncommon Presentation of a Common Disease

SINDHU JOHNSON, MD, FRCPC; ANDONI TOMS, FRCR; and PETER LEE, MD, FRACP, FRCPC, Divisions of Rheumatology and Medical Imaging, University of Toronto, Toronto, Ontario, Canada. Address reprint requests to Dr. Peter Lee, Mt. Sinai Hospital, Suite 1004, 600 University Ave., Toronto, Ontario M5G 1X5, Canada.

A 72-year-old Chinese woman was admitted to hospital with abdominal pain and diarrhea. She had undergone a cadaveric renal transplant in 1983 for endstage renal disease from focal segmental glomerulosclerosis. She was immunosuppressed with cyclosporine (50 mg twice daily) and prednisone (7.5 mg daily) and was also taking lisinopril, furosemide, atenolol, and low dose aspirin. Her baseline serum creatinine prior to admission varied between 120 and 150 $\mu\text{mol/l}$. She had a history of ischemic heart disease, a previous myocardial infarct, congestive heart failure, coronary artery bypass surgery, and peripheral vascular insufficiency. Gout had been a recurrent problem since 1995 and was usually managed with intraarticular corticosteroids. She was allergic to allopurinol and the use of colchicine was limited by diarrhea.

In hospital, she developed severe pain, redness, and swelling over the dorsum of her right midfoot. One month before she had had a similar episode involving the right forefoot. On both occasions she was not able to walk because of severe pain. Her recent serum uric acid concentration was 800 $\mu\text{mol/l}$ (normal 200–440 $\mu\text{mol/l}$).

Plain radiographs (Figure 1A) revealed a soft tissue opacity projected over the dorsal aspect of the midfoot and metatarsophalangeal joints. Lytic destruction with overhanging sclerotic margins of the cuboid and lateral

cuneiform was noted. Reconstructed sagittal (Figure 1B) and direct coronal (Figure 2B) computerized tomography (CT) revealed numerous juxtaarticular, high attenuation, soft tissue nodules eroding the first and fourth metatarsal heads, the 3 cuneiforms, the cuboid and navicular. Within the nodules focal areas of high attenuation not visible on the plain radiographs were identified (Figure 1B). These represent areas of early calcification related to monosodium urate crystal deposition¹. A diagnosis of tophaceous gout was made based on the juxtaarticular position of the erosions and nodules and the well defined marginal sclerosis.

Her prednisone dose was increased to 30 mg daily for 2 weeks, after which her symptoms resolved.

We describe a patient with an intense inflammatory process involving the foot of an immunocompromised host. Needle aspiration to confirm a diagnosis of gout and to exclude infection is difficult and painful in this situation. In this case CT imaging was helpful in establishing a diagnosis of tophaceous gout.

REFERENCE

- Gerster JC, Landry M, Dufresne L, Meuwly JY. Imaging of tophaceous gout: computed tomography provides specific images compared with magnetic resonance imaging and ultrasonography. *Ann Rheum Dis* 2002;61:52-4.



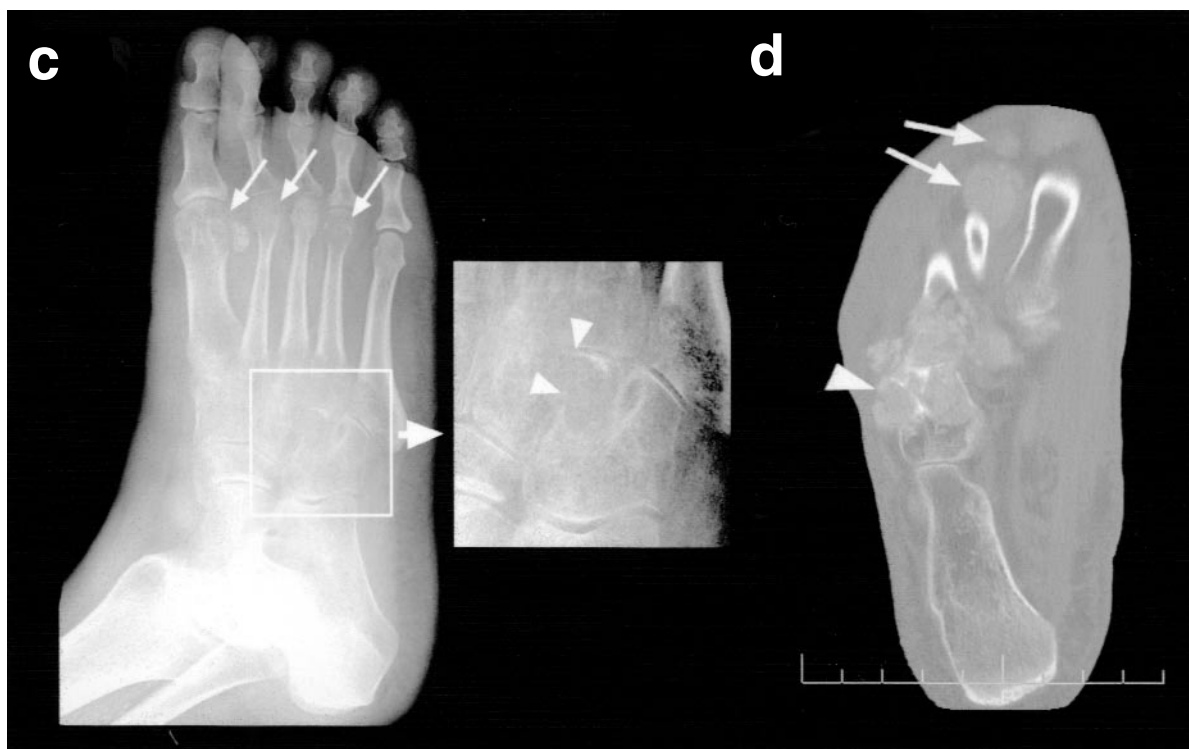


Figure 1. Lateral (a) and oblique (c) plain radiographs and reconstructed sagittal (b) and direct axial (d) CT of the right foot. These images reveal a homogeneous, high attenuation, soft tissue opacity in the dorsal soft tissues of the midfoot (a and b, white arrows) associated with scalloped erosion of the dorsum of navicular and medial cuneiform (b, black arrow). Similar, but smaller, opacities around the first to fourth metatarsophalangeal joints and the cuboid and cuneiforms (d, white arrows and arrowheads) are associated with more marked erosions (a, black arrow; c, white arrows). These erosions are juxtaarticular, with sclerotic margins and overhanging edges (c and d, arrowheads) typical of tophaceous gout.