

Tophaceous Gout

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PRESENTATION

A 65-year-old woman presented with painful swelling of the right index finger. There was tenderness and swelling of the distal interphalangeal joint on palpation.

COMMENTS

Gout is a metabolic disorder that results in hyperuricemia and the deposition of positively birefringent monosodium urate crystals in various parts of the body. These affected sites include tissues such as the synovial membranes, articular cartilage, ligaments, and bursae. There are a variety of causes of gout and they can be classified as idiopathic gout, and gout associated with other clinical disorders, such as myeloproliferative diseases, blood dyscrasias, chronic renal failure, and endocrine abnormalities. The vast majority of patients suffer from idiopathic gout, and men are much more frequently afflicted (male to female ratio, 20:1).

Idiopathic gout may be divided into several stages, depending on the amounts and sites of crystal deposition and on the inflammatory response. These stages are asymptomatic hyperuricemia, acute gouty arthritis, interval phase, and chronic tophaceous gout. Generally, permanent radiographic changes are seen in patients with chronic tophaceous gout. In the acute stage, radiographic findings are absent or minimal, and if pres-

ent, will usually disappear with clinical improvement. As the radiographic changes are usually not seen until 6-12 years after the initial attack, most patients are successfully treated long before destructive arthropathy occurs. Hence, the characteristic radiographic features are rarely seen today.

gout. The joint space is generally preserved until a late stage of the disease, and the bony density is usually maintained. Distribution of gouty arthritis may be variable, but, in general, the disease is asymmetric and polyarticular, has a predilection for joints of the lower extremities, and commonly involves the



Figure. (A) Posteroanterior and (B) lateral radiographs of the right index finger show an eccentric lobulated mass surrounding the distal interphalangeal joint. There are periarticular erosions with sclerotic margins and small overhanging edges. The joint space and bony density are generally preserved. Faint calcifications are present in the soft tissue tophus and are due to calcium pyrophosphate or hydroxyapatite deposition.

The classic radiographic findings consist of well-defined erosions with sclerotic borders and overhanging edges, associated with a lobulated soft-tissue mass. This mass is typically eccentric or symmetric, and it may calcify if there is a coexistent calcium metabolic abnormality. The urate crystals themselves do not calcify. The periarticular erosions are caused by the long-standing soft-tissue tophus. The overhanging edges are caused by subperiosteal deposition of tophus, with periosteal reaction developing to partially cover the surface of the tophus. These features are highly suggestive of

feet, hands, wrists, elbows, and knees. The first metatarsophalangeal joint of the great toe is the most common site of initial attack, occurring in approximately 70% of cases.

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