



UNIVERSITY of
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MEDICAL CENTER

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DEPARTMENT OF IMAGING SCIENCES

Imaging Sciences Interesting Cases

CASE 20

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CLINICAL PRESENTATION: Patient is a 35-year-old female with left foot pain.

IMAGING FINDINGS: AP, oblique and lateral views of the left foot demonstrate severe osteolysis of the forefoot, distal to the mid-tarsal bones. Note diffuse osteopenia, osteophytosis and subchondral cysts of the phalanges, and relative sparing of the mid and hindfoot.





Figure 1A-C: AP (A), oblique (B) and lateral (C) views of the left foot demonstrate severe osteolysis of the forefoot, distal to the mid-tarsal bones. Note diffuse osteopenia, osteophytosis and subchondral cysts of the phalanges, and relative sparing of the mid and hindfoot.

DIAGNOSIS: Neuropathic Osteoarthropathy

DISCUSSION: Neuropathic osteoarthropathy describes a destructive process of the bones and joints following a neurosensory deficit. Numerous diseases may result in neuropathic osteoarthropathy, such as diabetes mellitus, syringomyelia, tabes dorsalis, myelomeningocele, alcoholism, multiple sclerosis, amyloidosis and leprosy. Neuropathic osteoarthropathy can affect the upper extremity, spine and lower extremity.

Involvement of the lower extremity is more common than involvement of the upper extremity. In the past, syphilis was the most common cause of lower extremity neuropathic osteoarthropathy, usually involving the knee joint. At present, long standing diabetes mellitus is the most common cause.

Radiologic findings fall into either hypertrophic or atrophic patterns. Classic hypertrophic neuropathy results in bone destruction and proliferative changes. Findings consist of joint destruction, fragmentation, osteosclerosis and osteophytosis.

Atrophic neuropathic osteoarthropathy describes findings of severe osteolysis, giving the appearance of surgical amputation. As in the hypertrophic form, joint disarray and blood effusions are also findings in the atrophic type. Atrophic neuropathic osteoarthropathy is sometimes confused with septic arthritis. Mixed patterns of atrophic and hypertrophic findings may be encountered. Fractures are an uncommon complication of neuropathic osteoarthropathy and may result in bizarre appearing callus formation if left unrecognized.

This patient did not have diabetes mellitus, and the cause of the patient’s neuropathic osteoarthropathy is unknown.

REFERENCES:

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2. Brower AC, Allman RM. Pathogenesis of the neurotrophic joint: neurotraumatic vs. neurovascular. *Radiology*. 1981 May;139(2):349-54. [PubMed]