

Tuberculosis of the Midtarsal Joints: A Diagnostic Challenge

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Abstract: Tuberculosis of the foot and ankle is an uncommon presentation of skeletal tuberculosis. The common site, lack of awareness, and ability to mimic other disorders clinically and on radiographs, leads to diagnostic and therapeutic delays. Foot tuberculosis is only 8-10 % of the patients with osteoarticular tuberculosis (approximately 0.1-0.3% of all patients with extrapulmonary tuberculosis)¹⁻³. The treatment basically is medical, with surgical intervention being reserved for patients with intractable disease or as a salvage procedure for patients with deformed hindfoot joints.

Keywords: tuberculosis, foot and ankle, diagnosis.

INTRODUCTION

Mycobacterium tuberculosis is a disease that is being reported much more frequently in the literature, primarily because of the rapid increase in severely immunocompromised patients, but also because of the development of multiple drug-resistant tuberculosis strains. Extrapulmonary M. tuberculosis is also reportedly on the rise, and may manifest itself at a number of sites in the body, including the peripheral skeleton. It is important to recognize skeletal tuberculosis early because early treatment can effectively eliminate long-term morbidity.

CASE REPORT

A 72 year old male was presented with complaints of pain and swelling over the right foot for last 6 months. Treated symptomatically with the diagnosis of osteoarthritis of talonavicular joint in some other medical center. Ankle movements were painful and range of motion was decreased. Complete blood count and biochemical tests, including renal and liver function, were within normal ranges. Tuberculin skin test was positive. A plain radiograph of chest was normal. Erythrocyte sedimentation rate was 30 mm/h; C-reactive protein was 24 mg/L. Tests for antistreptolysin-O antibodies, and rheumatoid factor were negative.

Plain radiograph demonstrated erosive changes in the talo-navicular joint with abnormal destruction of the talus accompanied by periarticular osteoporosis, soft tissue swelling and periosteal reaction (Figure).



Figure: Plain radiograph demonstrated erosive changes in the talo-navicular joint with abnormal destruction of the talus accompanied by periarticular osteoporosis, soft tissue swelling and periosteal reaction.

Technetium-99m methylene diphosphonate (MDP) bone scintigraphy showed increased vascularity, significant focal hyperemia, and increased bone turnover in the right tarsal region, which was suggestive of infection. Curettage of talus and navicular bone was performed under spinal anesthesia. During the operation, diffuse osteoporosis and cortical disruptions were observed. Tissue samples were obtained from the synovium, joint capsule, and bone. Histologic studies showed granulomas with caseous necrosis, Langerhans-type giant cells, and sequestered bone fragments in hematoxylin-eosin sections. Mycobacterium tuberculosis was recovered only on bone cultures.

Antituberculous treatment consisting of rifampicin, isoniazid, ethambutol, and pyrazinamide was started in addition to casting immobilization.

Clinical resolution of symptoms was observed on the fourth month of the antituberculous chemotherapy. The patient is currently in the 10th month of planned 18-month treatment.

DISCUSSION

Diagnosis is often delayed as a result of the difficulty in identifying the organism and can mimic common joint diseases like rheumatoid arthritis, osteoarthritis, pyogenic osteomyelitis, bone tumor, pigmented villonodular synovitis, amyloidosis, actinomycosis or fungal osteomyelitis. The spine and hip are the most common sites of osteoarticular tuberculosis. By contrast, tuberculosis of the foot is less common, commonly misdiagnosed, and is detected at a more advanced stage.

Foot tuberculosis usually begins with periarticular granuloma and is not detected on radiography taken at early stages.⁴ The symptoms are those usually seen in musculoskeletal disorders; pain, stiffness, and swelling of the foot.^{2,5,6,7} A normal chest radiograph does not exclude tuberculosis.² Because the disease is paucibacillary, a positive acid fast bacilli culture is rare and the diagnosis usually is confirmed by obtaining granulomatous tissue on biopsy. The bone cultures must be obtained as well as those from the synovial fluid or tissues and incubated longer. Periarticular osteoporosis occurs because of disuse atrophy and the direct action of toxins.² Pheemister's triad consisting of periarticular osteoporosis, marginal erosions, and narrowing of the joint space is the radiologic features of osteoarticular tuberculosis.² The basic treatment of patients with tuberculosis of the foot is adequate and prolonged antituberculous therapy.^{1,2,4,5,9} Unlike pulmonary lesions, bone and joint tuberculosis should be treated with antituberculous drugs for more than 9 months and preferably 18 months.⁵ The role of surgery could be in the form of biopsy when the diagnosis is uncertain, debridement in patients who do not respond to therapy, or resection with or without arthrodesis for deformity or painful joints.^{2,5,9}

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