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Case Report

Tuberculous Osteomyelitis Late Finding Affected The Fifth Metatarsal

Fadli Fadil RR[1], Hirman Ari Wibawa[2]

[1]*Medical Doctor, PKU Muhammadiyah Hospital, Wonosobo, Central Java*
[2]*Orthopaedic and Traumatology Surgeon, PKU Muhammadiyah Hospital, Wonosobo, Central Java*

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Corresponding Author :
Fadli Fadil RR., MD
E-mail: fadlifadilrr@gmail.com

Abstract

Many studies have reported osteoarticular involvement of tuberculosis, but few cases of tuberculous osteomyelitis of the foot have been reported. We describe a case of tuberculous osteomyelitis affecting the fifth metatarsal bone in a 56- 56-year-old diabetic male patient and review the literature describing clinical manifestations, imaging aspects, and management of skeletal tuberculosis. A 56-year-old male patient presented with severe pain and swelling in his left leg for the past 6 months. He had no history of trauma. He had fever over his two months, had no cough, had lost weight, and had light sweats at night. His pain and swelling did not subside despite oral medication. The patient was diabetic. The patient also had radiating pain from his lower back to his left leg and numbness all over his lower back.

Tuberculosis is a widespread problem in Indonesia. It can affect any part of the body. However, the feet are rarely affected. Tuberculosis is on the rise and it is important to recognize the less common symptoms of this disease to allow early diagnosis and successful treatment. In urban areas where TB prevalence is high, there may be no TB exposure or 'typical' symptoms and signs. Radiological features are non-specific, so indicators of high suspicion are required. Patients with suspected risk factors or tuberculosis should have a biopsy to make the diagnosis and start treatment.

Introduction

Tuberculosis remains a public health challenge in countries such as Indonesia and other developing/ underdeveloped countries.[1] Tuberculosis (TB) is spread primarily through aerosol droplets exhaled by sneezes and spitting by patients with active TB, and most commonly causes pulmonary infection (pulmonary tuberculosis) in susceptible individuals.[2]

Osteoarticular tuberculosis accounts for less than 3% of extrapulmonary tuberculosis cases.[3] The overall incidence of tuberculous osteomyelitis is considered rare.[4] It can affect any bone in the human body. Short bone lesions are rare in clinical practice, and foot and ankle lesions are considered rare.[3,4] Tuberculosis of the feet and ankles is an important diagnosis. Dilemma; due to non-specific clinical manifestations, this entity is difficult to distinguish from other diseases such as suppurative osteomyelitis, fungal arthritis, and gout. arthritic and inflammatory processes such as amyloidosis.[5]

This case report aims to highlight the fact that tuberculosis can occur in unusual places and that care must be taken to identify it, especially in countries where it is endemic.

Case Presentation

A 56-year-old male patient had complained of severe pain and swelling in his left leg for the past 6 months. He had no history of trauma. Over 2 months, he developed fever, cough, and reduce weight, and developed mild night sweats. His pain and swelling did not subside despite oral medication. The patient

was diabetic. The patient also had radiation pain from the lower back to the left leg and numbness throughout the lower back. A physical examination revealed the presence of swelling on the left dorsum of the front and middle legs [Figure 1].

There was no local temperature rise. There was kindness. The patient had edema down to the lower leg. The swelling had a variable consistency. His hemoglobin was 11.2 g%, total white blood cell count was 8190, random blood glucose was 479 mg%, and serum creatinine was 0.9 mg%. Uric acid serology was 10.0.

An X-ray of the foot showed a prominent expansive lytic lesion at the distal end of the fifth metatarsal [Figure 2]. There was cortical thinning. The remaining visible bones and joints appeared normal.

An abscess due to osteomyelitis was suspected, and a debridement Guttering Sequestrectomy was performed. Intraoperative findings showed the presence of pus beads with unhealthy subcutaneous tissue and bone.

The postoperative course was uneventful and the patient was discharged from the hospital. Two months after his operation, he returned to our center complaining of radiating pain and numbness from his lower back to his left leg. The patient said that the pain was constantly decreasing and sometimes worsening. A physical examination revealed positive Lasegue and Kernig tests on the left side.



Figure 1. Swelling of the dorsum of the left foot. The clinical diagnosis of foot abscess was considered



Figure 2. X-ray of the left foot shows a well-definedextensible lytic lesion on the distal tip of the fifth metatarsal

He was readmitted to the hospital with severe pain and numbness from his lower back to his left knee. A radiograph of the patient's back revealed an odd finding [Figure 3].

The patient was diagnosed with grade 1 posterior vertebral lumbar spondylolisthesis and received ketorolac to tramadol injections for pain relief. After the pain subsided, the patient was referred to higher-levelel hospital for more comprehensive examination. At the referral hospital, the patient underwent an exploratory bone biopsy and new information was obtained from the histopathological report of the bone. Bone tuberculosis with epithelial granuloma and diffuse granulation tissue with multinucleated Langhans giant cells were shown. There were areas of psoriasis [Figure 4]. Features suggestive of tuberculous osteomyelitis of the fifth metatarsal.

The patient was referred to a primary care center and started on antituberculous drugs for 1 year. He came to our hospital for wound cleaning. After three weeks, his wound had completely granulated. and showed good healthy scars [Figure 5].

Discussion

Tuberculosis is known to affect up to 1-3% of bones and joints, most of which affect the spine and vital joints such as hips and knees. About 10% of osteoarthritic tuberculosis are known to affect the bones of the foot, most commonly the calcaneus, followed by the metatarsals and phalanges.[6] A possible explanation for the involvement of the calcaneus is that it is the largest bone in the foot, allowing early detection of lesions and being susceptible to trauma.[3] A literature review indicates an incidence of <1. 0.5% in metatarsal osteomyelitis[7], among them, the 1st and 5th metatarsal often involve.[8]

It was observed that 35 cases of metatarsal tuberculosis were documented in the literature. The literature indicates that metatarsal tuberculous osteomyelitis is less than 0.5%.[9] The fifth metatarsal is rarely affected by pyogenic tuberculosis infection.[4] The most common foot symptoms experienced by patients are pain, swelling, stiffness, redness, and sometimes abscesses.[1,10] Patients often have sinus ulcers with secondary infections or ulcers that do not heal.[1]

Musculoskeletal tuberculosis accounts for approximately 1-2% of all tuberculosis cases in the Western world and is often difficult to diagnose.[11] Tuberculous osteomyelitis is known for its abnormal course, and diagnosis is often delayed due to abnormal symptoms and lack of clinical features.[4]

Clinical manifestations of tuberculous metatarsals include chronic leg pain, swelling, difficulty walking,

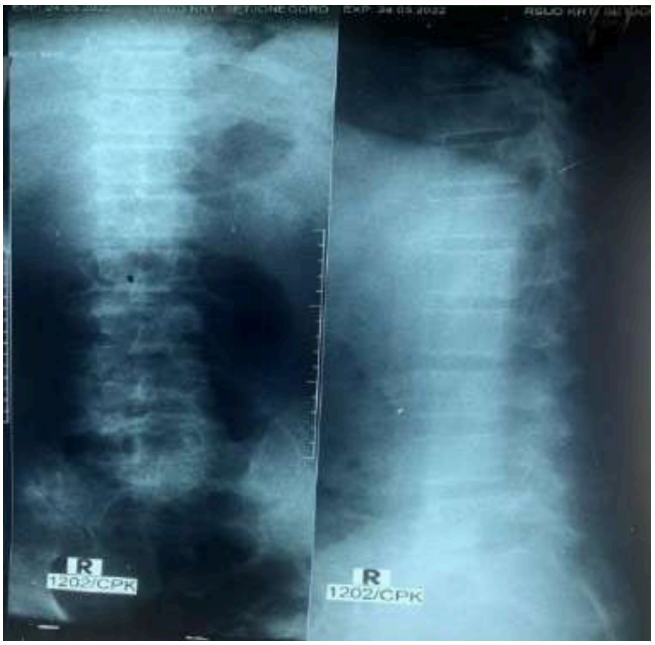


Figure 3. Vertebral Lumbar 5 body moved backwards Spine Lumbar 4 as 25%.

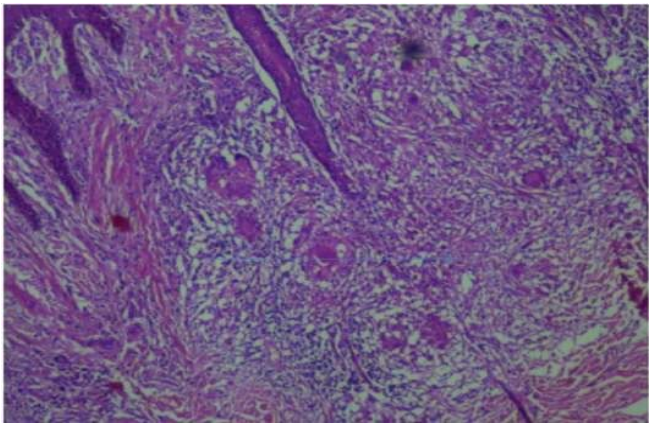


Figure 4. Shows the presence of epithelioidgranulomas, Langhans giant cells, and central bone necrosis.

and, in long-standing cases, draining sinuses/pain and pathologic fractures[12] Typical symptoms such as fever and weight loss are rarely seen.[11] Tuberculosis of the feet and ankles is divided into four basic forms: Periarticular granuloma, central granuloma, primary hematogenous synovitis, and bursal tuberculosis.[3,10]

Metatarsal tuberculous osteomyelitis is secondary to the spread of lymphohematogenous pulmonary lesions, with up to 50% of patients showing no pulmonary symptoms[4] Serological parameters of tuberculous metatarsals, such as total white blood cell count, ESR, CRP, and synovial fluid aspiration, are largely inconclusive.[13]

Mycobacterial organisms are rarely isolated from samples taken from wound secretions. Chest radiographs also appear normal most of the time, but metatarsal tuberculosis, like all other forms of extrapulmonary tuberculosis, is secondary to lymphohematogenous spread from the lungs to the bone.[12]

Foot radiographs for tuberculosis of the foot are nonspecific and include bone marrow edema, osteoporosis, or lytic lesions.[4,11] Mittal et al. Tuberculosis of the feet is radiologically classified into five types. Cystic tuberculosis, subperiosteal tuberculosis, rheumatoid arthritis, kisses, and spinal bentosa.[9] However, these features are not restricted to tuberculosis and are also observed in chronic suppurative osteomyelitis, sarcoidosis, and chondroma.[9]

Regarding oligo bacterial infections, mycobacteria are rarely isolated from tissues.[3,9] With early diagnosis and treatment, Prediction significant results. mantoux exam is the most common diagnostic tool for Tuberculosis infection, especially in children, Its effectiveness is still debatable.[14,15] Diagnosis is often histopathological.[11] Tissue assessment is therefore key to confirming the diagnosis. Granulomatous inflammation with or without typical nodules and with caseous necrosis, Significant discovery in histopathology. biopsy from the site of Infection is recommended as early establishment diagnosis facilitates early treatment.[16]

In our case, too, a definitive diagnosis could only be made after metatarsal histopathology. Anti-TB drugs are recommended for at least 12 months.[3,9] 4 drugs (isoniazid, rifampicin, pyrazinamide, ethambutol) for 2 months followed by 2 drugs (isoniazid and rifampicin) for ≥10 months.[9] The prognosis is usually good unless other adjacent bones or joints are involved.[3,9]

Conclusion

Tuberculosis is a common problem in Indonesia. It can affect any part of the body. However, the feet are rarely affected. Involvement of the 5th metatarsal is extremely rare, as in our case. Tuberculosis is on the rise and there is a need to screen for less common manifestations of this disease to allow early diagnosis and successful treatment. It's important to recognize. In



Figure 5. Indicates healed wounds during the follow-up period

urban areas where TB prevalence is high, there may be no TB exposure or 'typical' symptoms and signs. A high index of suspicion is required because the radiological features are non-specific. Patients with suspected risk factors or tuberculosis should have a biopsy to make the diagnosis and start treatment.

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

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