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Tuberculous tibial osteomyelitis with ankle joint arthritis in an immuno-competent patient: An atypical case presentation

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Abstract

Tuberculosis is called the great masquerader as it can mimic other diseases because of its varied clinical presentations. Evolving alongside the humans over the years mycobacteria developed various defence mechanisms to avoid detection and destruction by the host. Bone and joint TB is an extra pulmonary TB and its incidence varies with age and the socioeconomic status of the people and the country as a whole. In this case report we present a patient who had both TB osteomyelitis and arthritis which is an unusual and atypical presentation.

Keywords: Tuberculosis, atypical presentation, poncet's arthropathy, tuberculous osteomyelitis, tuberculous arthritis

Introduction

Tuberculous osteomyelitis dates back to the dark-ages, iron-ages and middle-ages wherein histology and polymerase chain reaction revealed the presence of the pathogen, Mycobacterium tuberculosis in the excavated skeletal remains both in Europe and Southeast Asia which are over 9000 years old. Musculoskeletal tuberculosis is most commonly seen in axial skeleton followed by appendicular skeleton. In the appendicular skeleton it involves the weight bearing joints like hip and knee more commonly. Musculoskeletal TB is mostly due to haematogenous dissemination mostly from lung. Atypical mycobacteria/ Non Tuberculous mycobacteria which are ubiquitous in nature can affect the musculoskeletal system of an immunocompromised host by either direct inoculation or contiguous spread ^[1, 2].

Evolving alongside the humans over the years mycobacteria developed various defence mechanisms to avoid detection and destruction by the host. Musculoskeletal tuberculosis often runs an indolent course with nonspecific symptoms and causes delay in seeking medical care and of those who present to the hospital only a half may have a chest radiograph suggestive of pulmonary involvement as well. Most of the patients with tuberculosis either pulmonary or osteoarticular presents with constitutional symptoms or B symptoms like anorexia, weight loss, night sweats and fatigue during its indolent and chronic course ^[1, 2].

Tuberculosis once suspected based on the clinical features, confirmation of the diagnosis is next step for initiating appropriate treatment. X-rays and MRI can be pathognomic based on the findings like erosions, gradual decrease in joint space and osteopenia known as phemister triad but definitive confirmation requires culture or histopathological examination. Once the diagnosis is confirmed the initial treatment is pharmacological with or without surgery based on the site of osteoarticular involvement and severity of the disease. The duration of pharmacological treatment for osteoarticular treatment ranges from 12 to 18 months ^[3].

Bone and joint TB is an extra pulmonary TB and its incidence varies with age and the socioeconomic status of the people and the country as a whole. With immunocompromised status because of increasing HIV patients the overall prevalence of TB is increasing including bone and joint TB. Osteoarticular TB can affect joints, bones and tendon sheaths. Of them the joints are most commonly affected in the bone and joint TB whereas osteomyelitis constitutes less than 5% of bone and joint TB ^[3]. There is a rare occurrence and presentation of both TB osteomyelitis along with AB arthritis.

In this case report we present a patient who had both TB osteomyelitis and arthritis which is an unusual and atypical presentation.

Case report

A 27 year old male with no known co-morbidities presented to our hospital on January 2021 with complaints of pain, swelling and discharging sinuses over the right foot and ankle. He sustained a twisting injury 6 months back during Kusti (local wrestling). Post injury he had pain for 3 days after which it subsided. 3 months after the injury he developed insidious onset of swelling over the ankle and foot which followed with a discharging sinus after 1 week. He consulted local practitioner and was advised legal medications. There was waxing and waning episodes with multiple (four) discharging sinuses over the medial calcaneum, medial distal tibia, anterolateral ankle joint and medial ankle joint. With these complaints of swelling, limp and antalgic gait and discharging sinuses he presented to us. He never had any constitutional symptoms apart from local complaints. His blood and pus was sent for investigations, and X-rays and MRI was obtained (Fig-1&2). His blood results were total lymphocyte counts- 7180/cumm., differential counts were neutrophils-59.10%, lymphocytes-32.50%, and ESR was 23. TB PCR was positive with Rifampicin sensitivity and he was started on ATT- 4 drug daily dosage regimen. Post ATT after 3 months his sinuses healed and swelling subsided and he started walking, his ESR was 8. He completed his 12 months of ATT and repeat MRI and X-rays were done (Fig-3, 4, 5). His sinuses are healed (Fig-6) and now he has minimal ankle stiffness for which he is on physiotherapy.



Fig 3: Coronal MRI post treatment



Fig 4: Sagittal MRI- post treatment



Fig 1: Coronal MRI pre-treatment.



Fig 2: Sagittal MRI pre-treatment.



Fig 5: X-ray post treatment.



Fig 6: Healed sinuses post treatment

Discussion

Tuberculosis is called the great masquerader as it can mimic other diseases because of its varied clinical presentations [4]. Due to its chronic indolent course it can present as late as 29 months with some patients have symptoms of the site affected whereas rest with only constitutional symptoms [5]. In a study in Algeria over a period of 20 years the percentage of isolated tuberculosis osteomyelitis is 19% of bone and joint TB and 15% of chronic osteomyelitis [6]. Tuberculosis arthritis can be septic or aseptic in nature. Tuberculous septic arthritis is because of the pathogen residing in the joint whereas aseptic is reactive in nature due to TB anywhere in the body. This reactive arthritis is an aseptic polyarthritides affecting both large and small joints and is known as Poncet's arthropathy. This happens due to sensitized T cells along with tubercular antigens migrating to the joints and causing aseptic arthritis [7, 8]. The BCG vaccination which is used for TB can cause adverse reactions like local abscess, regional lymphadenitis and at times disseminated disease even osteomyelitis and is seen mostly in immunocompromised patients. This is mostly due to vaccine strain, over dosage or faulty technique [9]. Bone and joint TB caused by atypical/non tuberculosis mycobacteria are in a raise due to immunocompromised state of patients with Acquired Immuno Deficiency Syndrome (AIDS). The disease caused by atypical mycobacteria can be both septic and reactive in nature like mycobacterial tuberculosis but with a more fulminant course rather than a chronic one [10]. Bone and joint TB affects most commonly the axial skeleton followed by large joints like hip and knee of the appendicular skeleton. Isolated tuberculous osteomyelitis is a rare presentation as is both TB arthritis and osteomyelitis.

In our case report our patient is not immunocompromised and the arthritis shows the features of erosions which are due to the pathogen itself and not Poncet's arthropathy. The tuberculous osteomyelitis involves the diaphysis as well as metaphysis. Once the treatment was started in 3 months his sinuses healed up and most of his symptoms subsided. Even though the latest X-ray was suggestive of arthritis the patient is able to walk without antalgia or limp and has minimal stiffness of the ankle joint for which he is on physiotherapy. So this is a case of tuberculous diaphyseal osteomyelitis and tuberculous ankle arthritis which is an unusual presentation.

Conclusion

Bone and joint TB should be suspected in any chronic

pathology with minimal systemic symptoms and multiple discharging sinuses, though such features point toward immunocompromised hosts. They can also occur in immunocompetent patients and respond well to ATT treatment.

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