

CASE REPORT

TB osteomyelitis

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Learning point for clinicians

Osteoarticular TB is very rare and as such, physicians are less experienced in diagnosing osteoarticular TB. This is compounded by the fact that the diagnosis of osteoarticular TB is difficult to achieve. Therefore, awareness and high index of suspicion of the disease is essential and referral to expertise should be made if diagnosis is indeterminate despite extensive investigations.

A 26-year-old man from Afghanistan, with background history of hepatitis B diagnosed 3 years previously, was referred by asylum seeker health centre practitioner with abnormal chest X-ray. He had lived in Pakistan for 1 month prior to moving to Ireland. He had lived in Ireland for one year prior to presenting with persistent dry cough for 4 weeks. He had three cousins with TB whom were fully treated in Afghanistan. He denied usage of intravenous drugs. He was an occasional smoker.

He was attending hepatology clinic regularly and was on Tenofovir.

On assessment, his vitals and physical examination were unremarkable. However, it was noted that he had right foot ulceration ongoing for a year (Figure 1a). Routine haematology showed lymphopaenia of 0.8 ($1-2 \times 10^{16}$ ml), hyponatraemia of 132 (135-144 mmol/l) and creatine reactive protein of 65 (<5 mmol/l). His chest X-ray (CXR) demonstrated left-sided air-space opacification in the apex.

He was isolated and his sputum was taken for acid-fast bacilli and GeneXpert-MTB/RIF PCR based assay and was negative for both. Computed tomography (CT) of his chest showed left upper lobe opacities with necrotic mediastinal lymph nodes. Bronchoalveolar lavage (BAL) was negative for GeneXpert-MTB/RIF PCR based assay. While awaiting culture for his BAL, he had magnetic resonance imaging (MRI) of the foot which showed evidence of osteomyelitis of right calcaneus with overlying soft tissue swelling and fluid tract which extend to communicate with skin over plantar aspect of right foot

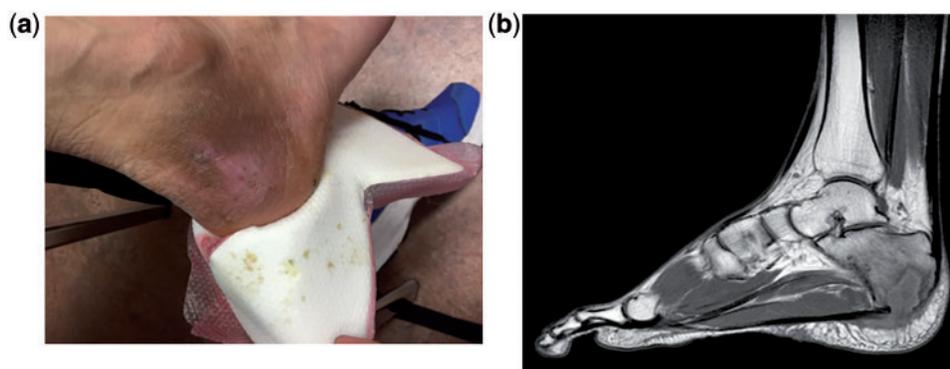


Figure 1. (a) Right foot ulceration. (b) Evidence of osteomyelitis of right calcaneus with overlying soft tissue swelling and fluid tract which extend to communicate with skin over plantar aspect of right foot.

(Figure 1b). Culture from the wound swab grew Methicillin resistant staph aureus. However, due to high clinical suspicion of TB, ultrasound guided fluid drainage was arranged for this man which resulted in positivity of Mycobacterium tuberculosis (MTB) detected on GeneXpert-MTB/RIF PCR-based assay. He was started on four standard anti-tuberculosis drugs. One month post treatment, his foot improved. His sputum grew Mycobacterium tuberculosis after 6 weeks.

Discussion

This case highlights the need for high clinical index of suspicion in patient presenting with osteoarticular tuberculosis (TB). Due to his high risk of tuberculosis, we proceeded with ultrasound guided fluid drainage. The culture from the wound swab was regarded as a red herring. According to Nakazawa et al.,¹ he and his team took 6 months to reach a diagnosis of tuberculous osteomyelitis reflecting the level of difficulty in differentiating tuberculous osteomyelitis from bacterial osteomyelitis or bone tumours. The mean interval between the first symptoms and the diagnosis was 26.4 months (range 1 month to 15 years).²

Monach et al.,³ pointed one possible point of differentiation between bacterial osteomyelitis and tuberculous osteomyelitis in which patients with tuberculous osteomyelitis presented with a low-grade fever and demonstrate so-called 'cold abscesses' without any evidence of local redness or warmth in contrast to patients presented with bacterial osteomyelitis in which the major features would be increased in warmth, erythema and swelling. Moreover, the paucibacillary nature of the discharging sinus makes the bacteriological confirmation more difficult, necessitating the use of invasive procedures in order to reach the diagnosis.⁴

Osteoarticular tuberculosis is a very rare form of tuberculosis. It is estimated that osteoarticular TB constitutes about 1.7–2% of all TB cases.⁵ The rarity of the disease makes general physician less aware of its presentation. Therefore, it is essential to educate and increase awareness of all physicians of the presentation of this disease in order to diagnose this disease promptly. Prompt diagnosis and treatment is of utmost

importance to avoid the development of skeletal deformities and ultimately long term functional disabilities.

As with our patient, the diagnosis was made promptly from the time he presented to our service. An attempt was made to diagnose pulmonary tuberculosis initially due to the CXR changes. Having failed that, we promptly attempt to diagnose TB from the foot with culture. Biopsy from the foot should be considered.

Positive microbiological and histological yields can be obtained in 64–90% of all patients.⁶ Studies have shown that microbiological testing is less sensitive than histology highlighting the importance of biopsy.⁶ Gursu et al.² also believe the essentiality of biopsy in diagnosing tuberculosis.

In conclusion, it is important to have a high index of clinical suspicion of osteoarticular TB affecting any parts of the body. Patients suspected of having osteoarticular TB should be thoroughly investigated and biopsy should be done if necessary.

Conflict of interest: None declared.

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