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Delays in diagnosis of osteoarticular tuberculosis

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Background: Osteoarticular *Mycobacterium tuberculosis* infection is uncommon, accounting for 2–5% of tuberculosis (TB) cases worldwide. Presenting symptoms may be non-specific, leading to a delay in diagnosis and treatment. We reviewed data from a cohort of patients with osteoarticular TB in an ethnically diverse area of London with the highest TB endemicity in the UK.

Methods and materials: Retrospective analysis of laboratory and medical records, radiology and microbiology results of patients with osteoarticular TB identified from the London TB register between January 2016 and October 2019 from London North West University Healthcare NHS Trust.

Results: 74 patients were identified with median age 36 years (range 11–82). 59.5% were South Asian, 23% were from Sub-Saharan Africa. None were HIV positive; 16.2% had type 2 diabetes.

The commonest site of infection was spine (46 patients), followed by sternum (8) and ankle (5). Twenty (27%) had multifocal disease with 14.9% having concurrent pulmonary TB. A 50% of patients with spinal TB had radiological evidence of multilevel disease. Patients with spinal TB were more likely to present with constitutional symptoms than patients with TB at other osteoarticular sites (48.8% vs. 10.7%, $p < 0.001$).

Forty cases were culture-positive with 38 fully-sensitive, 1 MDR and 1 isoniazid-resistant. Twenty-nine patients had positive tissue or pus GeneXpert MTB/RIF®. A 42% of patients were treated empirically on a clinico-radiological basis.

Mean number of days from symptom onset to initiation of treatment was 187.5 days. Patients with spinal TB had fewer days between onset of symptoms and commencing treatment compared to patients with TB at other sites (mean 99.8 days vs. 328.4 days, $p < 0.01$).

Most patients (73%) received extended treatment between 9 and 12 months. Twenty-five required surgical intervention including abscess drainage (16), spinal fixation (1) and joint replacement (2). 32.8% of patients had residual symptoms after completing treatment including limb weakness, flaccid paralysis and pain. Two patients were lost to follow up and 3 died before completing treatment.

Conclusion: This cohort review identifies a significant delay in diagnosing osteoarticular TB, resulting in disability and morbidity. Clinicians should therefore give early consideration to osteoarticular TB in patients presenting with bone or joint pain, even in the absence of constitutional symptoms.

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