A pain in the foot and a serious complication

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This case highlights the need for doctors to be aware of tuberculosis (TB) as a cause of monoarthritis and highlights the potential for serious complications to occur if TB arthritis is not managed appropriately.

CASE REPORT

An 18-year-old female caucasian restaurant manager presented to the Orthopaedic team with pain in the left ankle. An X-ray of the joint was normal and the patient was discharged. Three months later the patient presented to the rheumatology department complaining of persistent pain. She reported continued absence from work and inability to bear weight. On examination the left ankle was warm, swollen and had limited movement. Investigations revealed C-reactive protein (CRP) 14.7 mg/dL (normal range <5) and white cell count (WCC) $6.72 \times 10^6/L$ (normal range $4\text{--}10.5 \times 10^6/L$). X-ray of the joint was reported as normal.

A T2 weighted MRI showed synovitis and effusion of the talonavicular joint. The joint was aspirated under ultrasound screening and culture excluded bacterial infection, TB and fungi. The joint was injected with steroids, with dramatic improvement in the patient's symptoms.

Six months later the patient represented with swinging pyrexia, a hot swollen left ankle and a 2 cm × 2 cm draining sinus, from which *Staphylococcus aureus* was cultured. An X-ray of the joint was now abnormal (Figure 1). Treatment with intravenous flucloxacillin and fusidic acid was commenced. A repeat T2 weighted MRI showed significant deterioration of the midfoot (Figure 2).

Surgical exploration and debridement of the wound and a bone biopsy were arranged. The patient made an uneventful recovery and was discharged after one week on oral antibiotics.

Five days later the patient was re-admitted as an emergency with pyrexia, hallucinations, diplopia, VI cranial nerve palsy and a tremulous tongue. A previously normal CXR now revealed miliary TB. Lumbar puncture was

Figure 1 X-ray of the left ankle showing severe disruption of the midfoot

consistent with TB meningitis and acid-fast bacilli were isolated from the bone biopsy.

TB osteomyelitis had disseminated in the blood, with subsequent development of miliary TB and TB meningitis. HIV testing at the time and six months later was negative. The patient's immunoglobulin levels were all normal. She was treated with quadruple therapy and steroids, in line with the latest British Thoracic Society guidelines,¹ and made a complete recovery.

DISCUSSION

TB has increased in frequency in the western world,² and patients presenting with TB meningitis have the worst prognosis.³ However, TB of the foot is not well reported in the medical literature. TB arthritis represents approximately 35% of extra-pulmonary TB,⁴ and it predominantly

Figure 2 T2 weighted MRI showing significant deterioration of the midfoot

affects long bones, vertebrae and weight-bearing joints. Cases have been reported in the sternum,⁵ skull,⁶ symphysis pubis and sacroiliac joints.⁷ It is more likely to present with insidious onset, joint destruction, local deformity and draining sinuses. In over 50% of patients the chest X ray is normal and may not assist in the diagnosis.⁷

We report TB osteomyelitis in the foot of a caucasian patient with no obvious risk factors, with subsequent meningeal involvement. The patient was HIV negative. A low threshold for considering the diagnosis, with prompt recognition and treatment, is essential to prevent neurological damage. Clinicians must be aware that TB can cause a monoarthritis. Diagnosis by synovial or bone biopsy is indicated because culture of sinus exudates or joint fluid may not identify the tubercle bacillus and so may be misleading. We recommend that anti-TB therapy be started immediately following biopsy if the diagnosis of TB is suspected. This may prevent serious morbidity and

mortality by preventing haematogenous dissemination of bacilli.

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