LESSON OF THE MONTH

Don't forget tuberculosis

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Case reports

PATIENT 1

A 65 year old white man injured his right thumb whilst gardening, the subsequent pain settling spontaneously only to recur eight months later. Tender swelling of the carpometacarpal (CMC) joint of the right thumb was noted in the local orthopaedic clinic. Joint fluid examination was not diagnostic and surgical exploration was undertaken seven months after the recurrence of pain. Blood stained pus was found, microscopy including Ziehl-Nielsen stain was negative, and culture was sterile. Synovial biopsy showed non-caseating granulomata, the significance of which was uncertain. Two months later he was referred to the rheumatology clinic.

On examination, the patient looked well. There was swelling and tenderness over the CMC joint of his right thumb. He was barrel chested with crackles at the right apex. The remainder of the examination was normal. Full blood count (FBC) and biochemistry were normal, erythrocyte sedimentation rate (ESR) was 15 mm in the first hour; mantoux test (1:10 000) at 72 hours was weakly positive (<1 cm). Chest radiographs showed patchy consolidation in the right upper lobe and radiographs of the right wrist showed destruction of the CMC joint of the thumb (fig 1). Sputum culture isolated *Mycobacterium tuberculosis* which was fully sensitive. Nine months of anti-tuberculous therapy was uneventful, with good functional recovery of his thumb.

PATIENT 2

A 66 year old Asian woman was referred to the rheumatology clinic with a four month history of pain in her left elbow and forearm without significant antecedent history. She was otherwise well and was not receiving medication. General examination was normal, but she was tender over the left lateral epicondyle. Radiographs of the elbow, FBC and biochemistry were normal; ESR was 20 mm in the first hour. Tennis elbow was diagnosed and the tender area injected with corticosteroid. She presented 10 days later to the Accident & Emergency department with increased pain and swelling near the injection site. She was treated with oral broad spectrum antibiotics and referred back to her general practitioner. Two months later she was seen in the orthopaedic clinic with a swollen lesion discharging pus through multiple sinuses over the lateral epicondyle, which was treated with

Figure 1 Plain radiograph of CMC joint of right thumb of patient 1 showing erosive damage and florid periostitis on the metatarsal shaft.

further antibiotics. Swabs from the wound, as previously, failed to grow any organisms.

Five months after her first presentation, the patient was seen again in the rheumatology clinic and was admitted to the ward with a deep discharging ulcer (fig 2). FBC and biochemistry were normal, ESR 18 mm in the first hour. Swabs and blood cultures again grew no organisms, mantoux test was negative at 1:10 000, but a biopsy from the edge of the lesion revealed caseating granulomata and culture grew *Mycobacterium tuberculosis* which was fully sensitive. Chest radiographs and renal investigations showed no evidence of tuberculosis. Radiographs of the elbow showed local osteopenia without bone destruction. Anti-tuberculous therapy for nine months was uneventful and the ulcer healed.

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Figure 2 Photograph of ulcer on left elbow of patient 2.

Discussion

Osteoarticular tuberculosis (TB) usually follows haematogenous, lymphatic, or direct spread from a primary focus. Five types of osteoarticular TB are recognised:¹ spondylitis (Pott's disease), peripheral joint involvement, osteomyelitis/dactylitis, tenosynovitis/bursitis, and reactive arthritis (Poncet's disease); the most common are spondylitis and peripheral joint infection. Delay in diagnosis can lead to increased tissue and joint damage, with subsequent loss of function. Progression to osteomyelitis with more serious long term morbidity is also possible. Time to diagnosis from the first hospital visit was nine months for patient 1 and five months for patient 2. In patient 1 TB was not considered at presentation, possibly because there were no obvious risk factors. In patient 2, despite the higher risk associated with her ethnic background, the soft tissue presentation seemed to be the confounding factor. In a recent 10 year retrospective survey of osteoarticular TB, the delay in diagnosis from the first hospital visit was approximately six times greater in white patients (mean 17.6 weeks) compared with patients from the Indian subcontinent (mean 2.8 weeks).²

The incidence of TB in the UK declined steadily between 1950 to the late 1980s, but now seems to have plateaued.³ In the USA there was a similar decline, but since 1987 there has been a resurgence in the disease,⁴ osteoarticular TB making up an increasing proportion of reported cases.⁵ Data from the

1993 Notification Audit are awaited to assess the trend in this country.³ In the USA there is evidence of a significant contribution of HIV infection to the increasing incidence of TB,^{4,6} though the data are inconclusive in the UK, possibly because of underreporting.³

Diagnosing osteoarticular TB can be difficult and is best made by synovial fluid culture and synovial biopsy. In addition to histological examination, tissue should be sent for culture (not done in patient 1), which may increase diagnostic yield.⁷ Results of tuberculin skin testing may indicate tuberculous infection and the need for biopsy; however, negative skin testing (as in both our patients) does not exclude the diagnosis.⁷ A search should be made for other sites of disease such as the lungs and genitourinary tract which, if involved, may support the diagnosis and need specific management. Finally, treatment of TB has been reviewed recently,^{8,9} but it is worth highlighting that the evidence suggests that extrapulmonary TB can be managed with the same drug regimens as pulmonary TB.^{9,10}

The lesson

- The diagnosis of osteoarticular TB is often delayed because of a low level of clinical suspicion in white patients and if the presentation is unusual in patients at risk.
- TB should always be considered in the presence of atypical osteoarticular disease or where there is an inadequate response to treatment.

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