

Spontaneous fracture of the ulna complicating tuberculous osteomyelitis

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Summary: A 63 year old Asian woman presented with tuberculous osteomyelitis of the right ulna and a large subcutaneous cold abscess. During the course of her treatment the midshaft of the ulna sustained a spontaneous transverse fracture. Aspects of her case are reviewed.

Introduction

Tuberculosis of the bones and joints is now uncommon in the United Kingdom. The majority of patients who are notified originate from the Indian sub-continent. In most cases, the vertebral column and intervertebral discs are involved.^{1,2} However, infection may involve almost any bone in the body and may be present at more than one site in the skeleton at the same time.^{3,4} Tuberculous osteomyelitis usually results from spread of infection from a primary site either in the lung or the bowel.

Pathological fracture of a bone damaged by tuberculosis is very rare.^{5,6} We would like to report a case.

Case report

A 57 year old Asian woman was referred to this hospital with swelling of the right forearm. She had been born in India but had lived in the United Kingdom for 12 years. She had first noticed a localized swelling over the posterior aspect of her forearm 4 months previously. This had progressively enlarged but caused her no discomfort. There was no history of night sweats, fever, weight loss, or cough and her general health was good.

On examination, she was afebrile and had a tense mass involving the extensor muscle compartment of the right forearm. There was little inflammation of the skin and there was no bony tenderness. Physical examination of her chest and abdomen were unremarkable.

Investigations performed included radiographic examination of the right forearm, which showed soft tissue swelling, periosteal reaction and elevation and

marked disorganization of the structure of the ulna bone. A chest radiograph, full blood count, urea, calcium and electrolytes and liver function tests were all normal. The ESR was 68 mm per hour.

Viscous yellow-white pus was aspirated from the abscess. No organisms were seen on light microscopy but culture revealed a growth of *Mycobacterium tuberculosis*. This was fully sensitive to rifampicin, isoniazid and pyrazinamide. When the results of the aspirate culture were available, she was commenced on rifampicin 10 mg per kg, isoniazid 200 mg and pyrazinamide 1200 mg daily, together with pyridoxine 10 mg.

Out-patient follow up showed that the cold abscess was failing to resolve and it was felt that the patient had not fully complied with treatment. She was therefore admitted for supervision of antibiotic therapy.

One week after admission, she suddenly developed pain and local bony tenderness over the site of the abscess and a radiograph revealed a transverse fracture of the mid-shaft of the ulna (Figure 1). There was no history of trauma. This was treated by drainage of the cold abscess and excision of necrotic bone with plaster cast immobilization and she has since made a full recovery.

Discussion

Pathological fracture complicating tuberculous osteomyelitis is rare and is not discussed in standard textbooks of pathology or orthopaedics. Even in large series of cases^{2,4,7-10} it is not mentioned. In this patient we assume that the fracture occurred spontaneously as a result of the advanced state of destruction of the infected bone. The patient was in hospital under observation when the fracture occurred so that we can

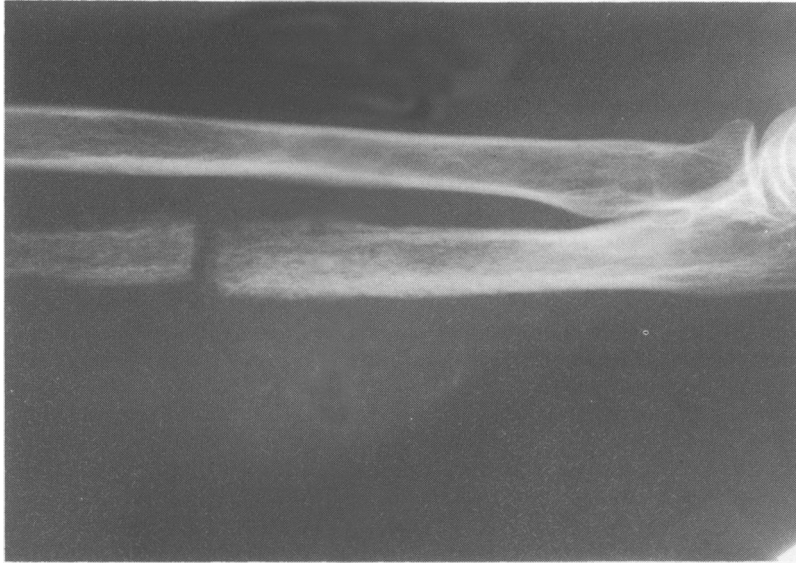


Figure 1 Radiograph of right forearm showing periosteal elevation, destruction of normal bone architecture and a transverse fracture of the mid-shaft of the ulna.

exclude significant trauma as a contributory factor. Figure 1 shows loss of normal bone architecture extending almost throughout the length of the ulna, and not just at the fracture site itself. In weight-bearing bones, spontaneous fracture might be expected to occur at an earlier stage in the progression of the disease.

Tuberculous osteomyelitis is frequently accompanied by evidence of disease in the chest or abdomen.¹ This patient had no obvious evidence of such infection at either of these sites though barium studies were not performed. Though not unique, this unusual case demonstrates that pathological fracture may complicate tuberculous osteomyelitis.

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