

SALMONELLA TYPHI SPONDYLITIS: AN UNUSUAL PRESENTATION*

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In a non-White hospital in South Africa, the majority of patients suffering from chronic infective lesions of the vertebral bodies have tuberculosis. Occasionally, however, surprises occur. Patients who on clinical, operative and radiological grounds are thought to have tuberculous spondylitis turn out to have something quite different when the results of the laboratory investigations, on the operative specimens, become available.

Two such unusual cases have been investigated in some detail by the orthopaedic and microbiology departments of the University of Natal. One of these was a patient with mycotic infection who will be the subject of a later report.¹ The other is a case of chronic typhoid spondylitis reported in this paper.

CASE REPORT

A 60-year-old Zulu female was admitted with a 15-month history of low back pain. The pain radiated down the back of the left leg to the toes and was aggravated by straining at stool, heavy lifting and latterly even by standing and walking. It was relieved by lying flat. She had previously been admitted to King Edward VIII Hospital in May 1969 with a cough, chest and abdominal pain, distension, vomiting, passage of loose stools and blood *per rectum* and low back pain.

Chest X-ray at the time showed a small pleural effusion. No acid-fast bacilli were detected in sputum samples. She also had enlarged cervical lymph nodes. Biopsy of one of these showed tuberculosis in microscopic section. She was transferred to a tuberculosis hospital where she was treated for 6 months. She was readmitted to King Edward VIII Hospital on 20 July 1970. Her low back pain had become disabling to the extent that she could not walk. On admission she was frail, emaciated and malnourished but afebrile. She had a firm but non-tender enlargement of her liver and spleen. This was thought to be due to her past heavy alcoholic intake. She was tender to palpation of the spinous processes of the first and second lumbar vertebrae. Straight leg raising test was negative and there were no neurological signs in the legs.

X-ray of the lumbar spine (Figs. 1 and 2) showed destruction of the contiguous portions of the first and second lumbar vertebral bodies and a narrowing of the disc space. Calcification was present in the paraspinal tissues adjacent to the involved vertebral bodies. There was no abscess shadow.

Her haemoglobin was 10.8 g/100 ml and the ESR was 56 mm/hour. On the basis of the clinical and X-ray findings a diagnosis of TB spondylitis was made. She was given a 2-week course of PAS, streptomycin and INH and then an anterior fusion of the involved vertebrae using a rib graft was performed. At operation a small abscess containing about 10 ml of thin pus was found. There were no sequestra. The disc between the first and

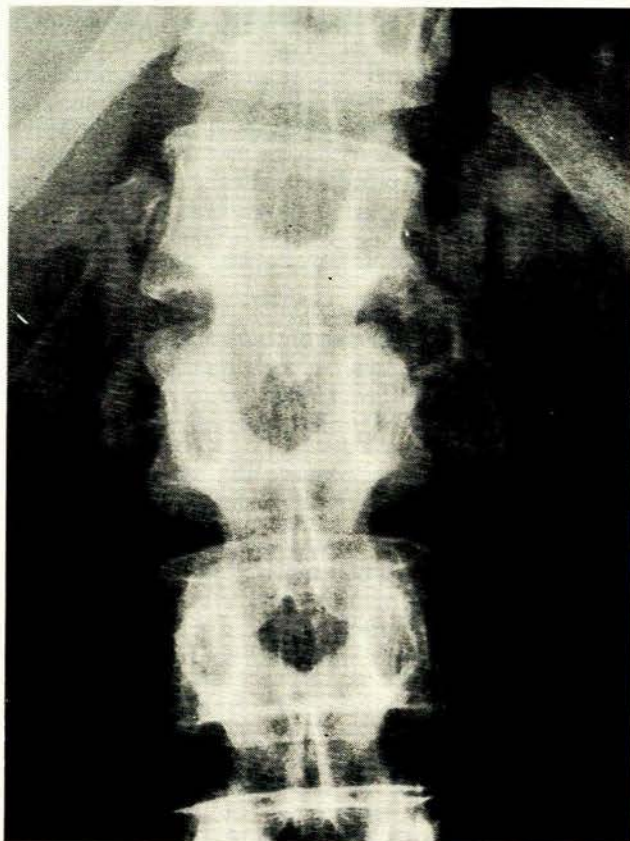


Fig. 1. An anteroposterior X-ray of the lumbar spine. There is a narrowing of the disc space, destruction of the contiguous portions of the first and second lumbar vertebrae and calcification in the paravertebral soft tissues.

second lumbar vertebrae was partly destroyed. As is our custom, a drain was put down to the site of fusion.

Unfortunately the pus obtained at operation was cultured only for tubercle bacilli. No growth was obtained. The drain to the fusion site continued to discharge seropurulent fluid. Three specimens of this fluid taken over 7 days were cultured and yielded a heavy growth of *Salmonella typhi*. The cellular response in all three specimens was scanty and mainly of polymorphonuclear leucocytes. The antibiogram showed sensitivity to chloramphenicol, tetracycline, kanamycin, neomycin, ampicillin, polymyxin B and gentamicin and resistance to sulphafurazole, streptomycin, penicillin G, erythromycin and cloxacillin. The antibody titre to *S. typhi* 'O' was 640 and 'H' was 1280. The *S. paratyphi* titres were less than 160.

The histology of the bone removed at operation was reported on by Dr W. Villet: 'A marked inflammation involves the bone. A non-specific infiltrate of lymphocytes, plasma cells, fibroblasts and multinucleated giant cells is present. Foci of suppuration are seen as well. No acid-fast bacilli or fungi are seen on special staining.' Faeces

*Date received: 27 October 1970.

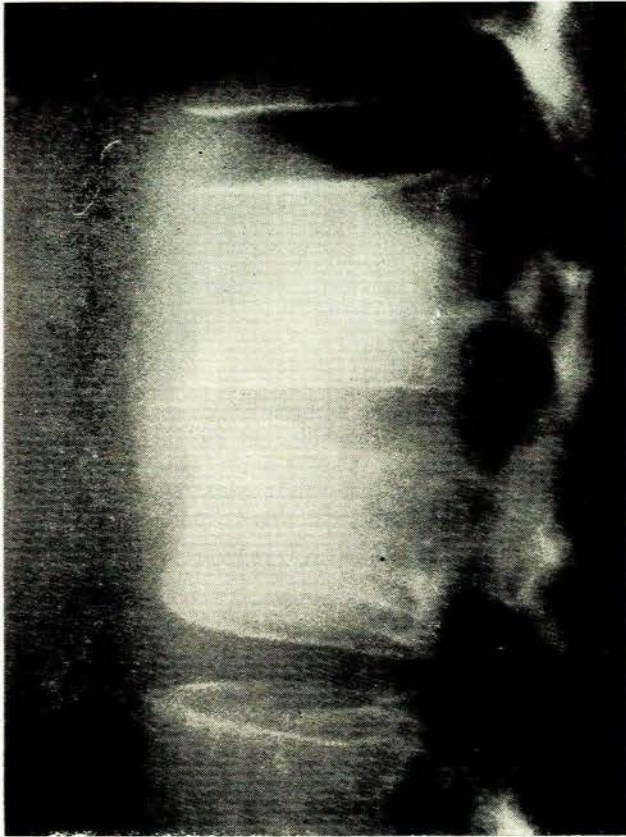


Fig. 2. Lateral X-ray of the lumbar spine which confirms the findings in Fig. 1.

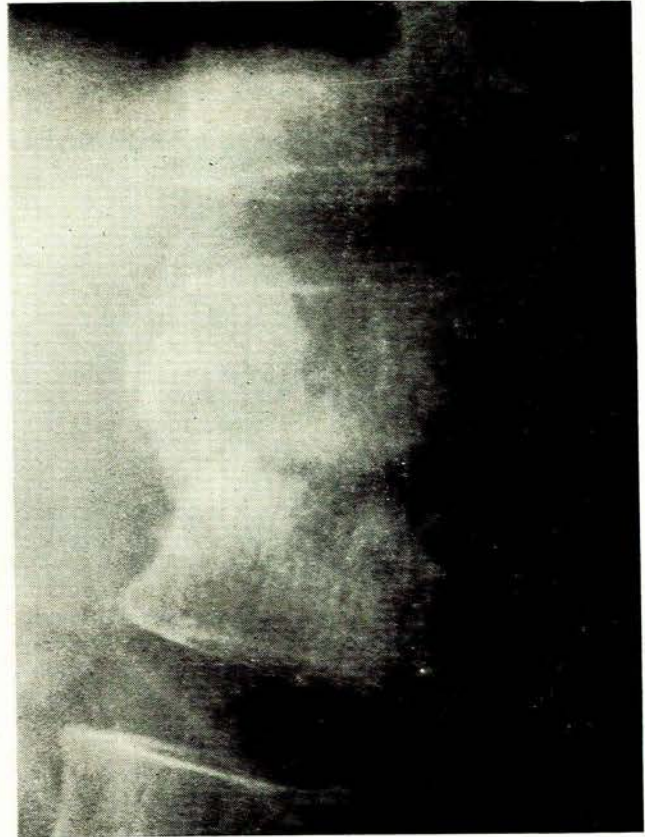


Fig. 3. Lateral X-ray of the spine taken 4 weeks after anterior fusion. Bony fusion between the two involved vertebrae is taking place.

and urine culture were negative for typhoid bacilli. There was no evidence of sickle-cell trait and the haemoglobin electrophoresis was normal.

The patient was treated with chloramphenicol 250 mg every 6 hours for 6 weeks. Her low back pain almost completely disappeared and she was discharged from hospital wearing a posterior spinal support. X-ray of the lumbar spine taken 4 weeks postoperatively showed bony fusion, between involved vertebrae, to be progressing well (Fig. 3).

DISCUSSION

S. typhi spondylitis was first described by Paget in 1876.² It usually presents as an acute or subacute osteomyelitis with a tendency to spontaneous interbody fusion. Fatalities are common. These are thought to be due to the fact that *S. typhi* spondylitis is almost invariably associated with the sickle-cell trait.³

The usual sites of involvement of the spine are the lower thoracic and upper lumbar regions.⁴ Commonly several vertebrae are involved. The condition is commonly multifocal and, in addition to the vertebrae, the femur, tibia, humerus, radius, sternum, ribs, sternochondral junctions, sternoclavicular joints and the bones of the hand, foot and cranium may be the sites of skeletal involvement.

Our case shows several unusual features. Sickle-cell anaemia and haemoglobinopathy were absent. Although the patient had probably had typhoid spondylitis for 15

months there was little tendency for spontaneous interbody fusion. The onset of spinal symptoms coincided with the onset of the gastro-intestinal symptoms. Although no faeces cultures were performed at the time of the 1969 admission, it is reasonable to suppose that the symptoms were due to typhoid. The gastro-intestinal symptoms subsided without specific treatment but the low back pain became incapacitating. Anterior spinal fusion resulted in relief from pain.

Since the patient suffered from low back pain for 15 months we are dealing with a chronic condition rather than the acute or subacute spondylitis previously described.^{5,6} The past history of tuberculosis together with the clinical, X-ray and operative findings pointed to tuberculous spondylitis. In a unit which over a 10-month period treated 88 cases of the latter condition this diagnosis seemed highly probable, until the result of bacteriological tests became known.

As both typhoid and tuberculosis are common in non-White hospitals we wish to draw attention to *S. typhi* infection as a differential diagnosis of tuberculous spondylitis.

SUMMARY

An unusual case of *Salmonella typhi* spondylitis is reported.

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