SEPTIC ARTHRITIS OF A LUMBAR FACET JOINT

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A case report of septic (infective) arthritis of a spinal facet joint is presented. Awareness of its existence should help in making the diagnosis in other patients.

Patients occasionally present with sudden onset of back pain, deformity and fever but with radiographs which, though taken after an appropriate interval, seem to exclude sepsis in the disc or vertebral body. Since there are many synovial joints in the spine, it seemed possible that septic arthritis of a facet joint might explain the discrepancy. A search of the world literature back to 1966, however, uncovered no such cases. In one review of 201 patients with 221 suppurative arthritic joints there were no cases in which a spinal facet joint was involved (Heberling 1941); only five “small” joints were involved, most of the remainder being the knee, hip, ankle, elbow, shoulder and wrist joints in that order.

Given the possibility that septic arthritis of a facet joint has not been reported before and that similar cases may go unrecognised, it seemed worthwhile to present the following case.

CASE REPORT

A 66-year-old man was sent to the Princess Margaret Hospital, Christchurch, New Zealand for investigation of pyrexia associated with pain in the lumbar spine and in the right thigh. Two weeks previously he had strained his back slightly and later that night he woke with rigors. On waking again in the morning, he had severe low back pain which was on the right side and radiated into the front of the right thigh; he also had a recurring fever, rigors and sweats. These features continued for a week before he called in his general practitioner, who noted a mild herpetic rash over the left hip and that the patient was in considerable pain when he had to get up for toilet purposes. Two years previously the patient had been referred to a specialist with pain in the back and weakness and numbness in the right thigh; this had cleared after six months and had not been associated with any fever.

Results of investigations done whilst the patient remained at home were: an erythrocyte sedimentation rate of 99 mm in the first hour; a mild normochromic anaemia of 125 g/l; a white cell count of $11.37 \times 10^9$/l with 78% polymorphs; raised gamma glutamic transpeptide, aspartate transaminase, and alkaline phosphatase levels. Electrophoresis and urine microscopy were normal. The patient was treated with amoxycillin, difunisal (Dolobid, Morsen) and an analgesic combination, but did not improve and was admitted to the hospital.

Examination showed a mild pyrexia of 37.4°C and a stiff painful lumbar spine with tenderness down the right side. The amoxycillin was stopped and the patient observed and investigated. His temperature rose to 39°C the first night but abated over the next three days. The right paraspinal tenderness persisted and it was noted that lateral flexion to the left sharpened the pain.

A radiograph of the lumbar spine showed narrowing of the L2–3 disc space with an associated Schmorl’s node (Fig. 1). A mid-stream urine analysis revealed no pyuria (negative culture) and a blood culture performed on admission revealing isolated Staphylococcus aureus, resistant to penicillin, was cultured from two bottles after five days; repeat blood cultures six and seven days after admission but before appropriate antibiotic treatment were negative.

A $^{99m}$Tc-MDP bone scan on the sixth day showed diffuse and patchy increased uptake around the lateral aspects of L3 and L4. A CT scan from mid-L2 to mid-L4 in 5 mm slices seven days after admission (Fig. 2) was reported as showing “no evidence of soft-tissue swelling or bony destruction”.

Given the positive blood cultures, the orthopaedic advice was to administer intravenous cloxacillin 3 g
Figure 1 – Anteroposterior radiograph showing narrowing of the L2–3 intervertebral disc space, with well defined bony margins to the adjacent vertebral end-plates. Note the normal right L3–4 facet joint (arrow). Figure 2 – A CT scan through the L3–4 disc space. Bone windows show normal facet joints (FJ). Soft-tissue windows show loss of density of the right ligamentum flavum (LF). There is obliteration of the fat planes on the dorsal aspect of the right lamina of L3 and the adjacent spinous process of L3 (F), as well as swelling and central low density in the right multifidus muscle (MM). Figure 3 – Nine weeks later there is loss of the subchondral bone of the right L3–4 facet joint (arrow), although the appearance of the L2–3 disc space is unchanged. Figure 4 – A CT scan taken four months after first presentation. Bone windows confirm irregular destruction of the subchondral bone of the right L3–4 facet joint (FJ). Soft-tissue windows still show absence of the right ligamentum flavum (LF); the fat planes (F) have returned and the right multifidus muscle is now of normal size and density (MM).
every six hours; this was begun seven days after admission and three weeks after the start of the illness. A presumptive diagnosis of an infective discitis at L3-4 or a vertebral osteomyelitis had been made. On the first night of treatment fever recurred (possibly due to lysis of staphylococci) but by the next day he already felt much better.

After six days the intravenous cloxacillin was stopped and flucloxacillin given (1 g every six hours for six weeks). A moulded plastic brace was fitted and 15 days after admission, the patient was sent home to rest with the recommendation to become active gradually but to continue wearing the brace.

In the outpatient department eight weeks after the start of the antibiotic regime, he reported that he was well; although he still had some pain down the lateral aspect of the right thigh, he had none in his back. He was able to reach to mid-shin and had a moderate range of lateral flexion. There was no wasting of the quadriceps but some altered sensation over the lateral side of the thigh. Plain radiographs showed destruction of the L3-4 facet joint on the right side (Fig. 3) and a diagnosis of septic arthritis of the facet joint was made. The narrowed L2-3 disc space and adjacent vertebral bodies were unchanged, and the erythrocyte sedimentation rate was 14 mm in the first hour. When reviewed a month later he reported that he had a twinge of pain in his back and right thigh at times, but he remained well. A CT scan was carried out four months after the onset of the illness (Fig. 4) and confirmed irregular destruction of subchondral bone.

DISCUSSION

It is suggested that strain of this patient’s facet joint and the resulting effusion or haemarthrosis allowed colonisation by staphylococci. The fact that the sepsis was lateral should have been diagnosed clinically, because the tenderness was to the right of the midline and lateral flexion to the left sharpened the pain. The benign resolution of the sepsis suggests that, if pus discharged from the swollen facet joint, it did so into the soft-tissue planes; the initial CT scan supports this conclusion.

It is possible that, in some cases of septic arthritis of a facet joint, pus might escape into the extradural plane; this might explain the source of some extradural abscesses. The possibility that sepsis might also occur in the costovertebral and costotransverse joints of the thoracic spine should also be borne in mind. The likely existence of septic arthritis of the facet joints is confirmed by this case. The condition may be suspected clinically and confirmed by CT scanning.

We thank Dr J. E. Keithley, general practioner of Lyttleton and Dr D. E. Stewart, Consultant Physician, and his staff at Princess Margaret Hospital who cared for this patient; Dr J. G. Turner, Head of the Department of Nuclear Medicine reported on the isotope bone scan, and Mr S. Brookes, Head of the Department of Medical Illustrations, prepared the photographs.

REFERENCES