A 48-year-old man presented with back pain that was resistant to treatment. An MR scan showed spondylolisthesis at L4-5 and narrowing of the exit foraminae. He had a posterior fusion which did not relieve his symptoms. He continued to have back pain and developed subcutaneous nodules in both forearms. Biopsy from the skin revealed cutaneous sarcoidosis, and one from the lumbar spine showed sarcoidosis granuloma between the bone trabeculae. A CT scan of the abdomen and chest revealed axillary lymphadenopathy, mediastinal enlarged nodes, apical nodular nodes and splenomegaly. The patient was started on large doses of methotrexate and steroids. His angiotensin-converting enzyme and calcium levels returned to normal and the back pain resolved.

Sarcoidosis is a multisystem syndrome of unknown aetiology with variable presentation, prognosis and progression. Its histological hallmark is the noncaseating granulomata which disrupt the architecture and function of the tissue in which they reside.

Osseous involvement occurs in between 1% and 13% of cases commonly involving the hands and feet.1,2 However, vertebral sarcoidosis is exceedingly rare and very difficult to diagnose.

We present a patient with osseous vertebral sarcoidosis. He also had lesions affecting the lungs, skin, liver and spleen, but his initial presentation was with back pain and in the absence of any other manifestation of this multisystemic disease.

Case report
A 48-year-old man presented with a three-month history of back pain radiating to the left leg. Examination revealed a positive straight leg raise test at 30° on the left side, but other than this, the examination was unremarkable. An MR scan showed bilateral narrowing of the L4-5 exit foraminae with spondylolisthesis and narrowing of the disc space (Fig. 1). He underwent L4-5 posterior fusion and decompression with pedicle screws. Following the operation he continued to have pain in his back and left leg. His inflammatory markers (white blood cell count, erythrocyte sedimentation rate and C-reactive protein) were all normal. He continued to have intractable pain, which did not respond to Gabapentin and he developed sensory changes in the distribution of L4 and L5 changes and urinary retention. A further MR scan showed degenerative disc disease at L4-5, no evidence of nerve root compression, and a normal conus. In view of the persistent intractable pain, an attempt was made to carry out an anterior fusion at the L4-5 level, but this was abandoned because of excessive bleeding.

Three months later, he noticed gradual diffuse thickening of the skin in the forearms and legs with palpable lumps (Fig. 2). A biopsy showed the features of a sarcoid granuloma (Figs 3 and 4).
In view of the persistence of the back and leg pain, a biopsy was undertaken at the L4-5 level which showed a sarcoid granuloma between the bone trabeculae (Fig. 5). CT scans of the chest and upper abdomen showed axillary lymphadenopathy, enlarged mediastinal nodes, apical nodular nodes and splenomegaly, consistent with sarcoidosis. He was started on prednisolone 40 mg daily for eight weeks, which was then reduced to 30 mg daily and methotrexate 10 mg weekly. He did not tolerate the methotrexate, and this was stopped. However, he was continued on a maintenance dose of prednisolone. His subcutaneous nodules had disappeared by six weeks. His back pain started to improve and resolved by four months. The levels of angiotensin converting enzyme and the serum calcium reverted to normal.

**Discussion**

Sarcoidosis is a multisystem disorder characterised by noncaseating granulomatous infiltration. The most common sites of involvement are the lungs and lymph nodes, while the spleen, liver, skin, eyes, muscles, bones, central nervous system and salivary glands are less frequently involved. Osseous involvement is uncommon mostly affecting the long bones of the hands and feet and involvement of the lumbar vertebrae is exceedingly rare. The rarity of osseous and, in particular, vertebral sarcoidosis leads to a significant
delay in diagnosis with only one third of patients diagnosed at the initial presentation.4,5

The mainstay of diagnosis is biopsy.4,6,7 Magnetic resonance imaging is non specific.8 In a few cases of vertebral sarcoidosis, MRI findings have been reported,9,10 but in our patient MRI failed to show any specific bony lesion, emphasising the importance of histological evidence.

Clear guidelines for the treatment of extrapulmonary sarcoidosis do not exist.11-13 Corticosteroids are the drug of choice, and long-term efficacy in osseous sarcoidosis has been suggested14 and is effective in correcting hypercalcaemia.15 The use of cyclophosphamide and methotrexate has also been reported to be effective in the management of sarcoidosis, particularly for patients who are refractory to standard therapy of corticosteroids or unable to tolerate high-dose corticosteroids because of side effects.6,16,17

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References