

Do not underestimate your patient's back pain

Introduction

Back pain is a common complaint in the elderly population which is often attributed to osteoarthritis or vertebral collapse secondary to osteoporosis. The following case reports describe an easily-missed cause of back pain which is becoming increasingly important and thus should be actively sought.

Discussion

Back pain is a common complaint in the elderly population (Lew and Waldvogel, 1997). Although it can often be attributed to spondylosis or osteoporotic wedge fractures, sinister causes like malignancy, multiple myeloma or infection should always be excluded. The incidence of vertebral osteomyelitis is increasing in older patients. Elderly patients, especially those suffering from diabetes, are predisposed to spinal infections, the source often being related to the use of intravenous access devices and asymptomatic urinary infections (Gasbarrini et al, 2005). In addition, osteoporotic compression fractures may predispose to osteomyelitis since associated haemorrhage and bony debris may provide a good culture medium for bacteria (Lew and Waldvogel, 1997; Venkatachalam et al, 1999).

In vertebral osteomyelitis, blood investigations reveal high inflammatory markers. Fever and leukocytosis may support the diagnosis, but may not always be present (Chelsom and Solberg, 1998). Radiological diagnosis is best achieved with the use of magnetic resonance imaging while bone biopsy provides the greatest yield for bacteriological diagnosis, with *Staphylococcus aureus* being the com-

monest organism cultured followed by gram-negative bacilli. Consequently, antibiotics should cover both organisms if cultures are negative, with parenteral antibiotics given for at least 4 weeks followed by oral antibiotics for a further 3 months. Treatment should be initiated

at an early stage since delay in diagnosis can lead to serious complications such as paraplegia and psoas abscess. Surgery is reserved for subjects with progressive neurological deficit or failure to respond to medical treatment (Venkatachalam et al, 1999).

Case Report 1

An 89-year-old diabetic woman presented 2 weeks after a fall associated with lumbago and reduced mobility. X-rays revealed old osteoporotic wedge fractures at levels T11 to L1. After 2 weeks' treatment with analgesics, she was still complaining of sacral pain radiating to her central abdomen and had reduced power 3/5 in both lower limbs but normal plantars. Blood investigations showed normochromic normocytic anaemia, deranged renal function, normal white cell count and high erythrocyte sedimentation rate and C-reactive protein levels. The suspicion of underlying multiple myeloma was dismissed in view of negative urine for Bence-Jones protein and a polyclonal rise in immunoglobulins on serum protein electrophoresis.

Four weeks after this the patient developed a fever of 100°F associated with urinary retention. Urinalysis indicated a urinary tract infection but no bacteria were cultivated. Neurological examination revealed upgoing plantars. Magnetic resonance imaging of the spine revealed osteomyelitis at the L1/2 level with inflammatory involvement of the adjacent right psoas muscle (Figure 1). No significant compression of the thecal sac was noted. The patient was started on ciprofloxacin and clindamycin. Biopsy of the pyogenic source was dismissed in view of difficult access. Serial blood cultures were negative. In spite of intensive treatment, the temperature spiked again 10 days after commencing antibiotics which were thus changed to teicoplanin and ciprofloxacin; both were given for a total of 3 months. The patient made a slow recovery and remained dependent. Her inflammatory markers returned to normal.

Case Report 2

A 93-year-old man presented with generalized aches and pains, fever, malaise and confusion. Three months before, he had sustained a fracture of the distal end of the left femur that required internal fixation. On admission, the patient was found to have a septic left knee. Pus was aspirated and the patient given intravenous teicoplanin and ciprofloxacin for 2 weeks. X-rays of the left knee were normal. Blood cultures revealed *Staphylococcus albus* which was considered a contaminant. Urinalysis and microscopy were indicative of a urinary tract infection. However, both urine cultures and cultures of the knee aspirate were negative.

Nine days after admission, the patient started complaining of severe left hip pain. An X-ray revealed osteoarthritic changes for which he was started on an opiate. His hospital stay was further complicated by urinary retention necessitating temporary catheterization, and deep vein thrombosis of the left femoral and popliteal veins for which he was anticoagulated.

He was subsequently transferred to a rehabilitation hospital and on mobilization with a zimmer frame he complained of severe lumbago. Plain radiography of the thoracolumbar spine and pelvis revealed no gross abnormalities. The pain persisted despite regular analgesia and within 2 weeks he developed localized central tenderness. He remained afebrile with a normal white cell count despite having high levels of inflammatory markers (erythrocyte sedimentation rate 98 mm/hr, C-reactive protein 145 mg/dl, ferritin 462 ng/ml). A tentative diagnosis of vertebral osteomyelitis was made and the patient was started on intravenous ciprofloxacin and flucloxacillin empirically. A magnetic resonance imaging scan of the spine confirmed osteomyelitis with intervening discitis at L4/L5 level causing narrowing of the thecal sac (Figure 2). Gradually, the patient improved and his inflammatory markers decreased. After 3 months' treatment with antibiotics, he was pain free and mobile independently.

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Figure 1. Osteomyelitis and psoas abscess. Coronal view showing osteomyelitis at L1/2 level (black arrow) complicated by a right psoas abscess (white arrow).

In the cases discussed here, delay in diagnosis and institution of intravenous antibiotics in the first case undoubtedly

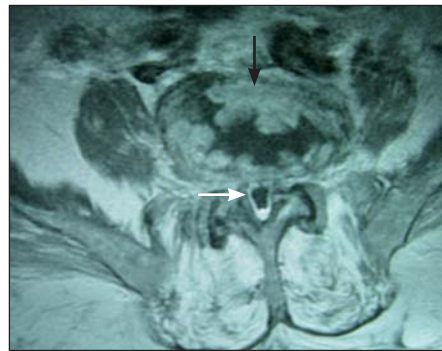


Figure 2. Septic discitis. Horizontal T1-weighted image at L4/5 level showing discitis (black arrow) and thecal sac compression (white arrow).

contributed to the significantly greater level of dependency and impaired mobilization compared to the second case.

Conclusions

The diagnosis of vertebral osteomyelitis is easily missed, and treatment is often delayed, particularly in the elderly in whom signs of sepsis may not be obvious.

Persisting localized pain and tenderness over the spine together with elevated C-reactive protein and erythrocyte sedimentation rate levels should prompt the physician to consider vertebral osteomyelitis. Effective treatment requires rest, early intravenous antibiotic treatment (preferably guided by local sensitivities of the organism cultivated) and immobilization during the active phase of the infection, followed by active physiotherapy once the infection is subsiding. **BJHM**

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