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Persistent back pain in adults: Four case reports

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ABSTRACT

The author describes 4 cases of thoracic back pain. All 4 had significant night pain, and 3 of the 4 presented with an upper motor neuron lesion of the lower limbs subsequestly diagnosed as a primary vertebral tumor. All lesions were well demonstrated on CT examination and were proved to be chordoma, lymphoma, solitary plasmacytoma or aneurysmal bone cyst. Awareness of primary thoracic tumours is important, as early recognition may prevent irreversible damage to the cord.

INTRODUCTION

Backache is a common problem and is widely treated by general practitioners, physiotherapists, chiropractors, osteopaths, rheumatologists, physicians, neurosurgeons and orthopaedic surgeons. Most problems are mechanical or nonspecific, usually settled with symptomatic treatment. Only a small proportion may need surgical intervention.

Thoracic backache is uncommon compared to lumbar and there is a trend to treat this like a non-specific pain. It is essential to investigate any thoracic pain that persists for over three weeks, and more so when associated with subcostal radicular symptoms, to rule out the possibility of discitis or tumours of the thoracic spine. The author describes 4 cases where treatment was delayed for various reasons and which were later confirmed to be primary bone tumours of the thoracic spine. Primary tumors of the thoracic spine are rare in comparison to metastatic lesions in the spine, and early detection is essential.

CASE REPORTS

Case 1. A 49-year-old man was seen with a history of pins and needles sensations from the chest down and unsteadiness on his feet for the previous two days. He had had thoracic backache for many months and his spine had been manipulated by an osteopath on several occasions. He noticed worsening of back pain in the five days before being seen. Examination revealed fullness around the neck and face with a flushed appearance. He had an abnormal, broad-based gait with bilateral ankle clonus and an upgoing toe. Although there was no weakness of the muscles of the lower limb at admission, he had diminished pinprick and light touch sensation below T6. Haematological examination and urine analysis were within normal limits. Radiological examination of his chest showed a large bilateral mediastinal mass, which was confirmed to be a tumour arising from the second and third vertebral bodies with extension of the tumour in

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the spinal canal. A CT guided closed biopsy (Fig. 1) revealed a notochordal tumour (chordoma). After assessment by neurosurgeons and oncologists, it was felt that the tumour was too extensive for surgical treatment. He was treated with a course of dexamethasone and radiotherapy. Subsequently his neurology deteriorated and in two months time he was wheelchair-bound with grade II weakness in the lower limbs and urinary incontinence.

Case 2. A 43-year-old man presented with acute backache for 10 days. The pain was worse at night. There was a small kyphos deformity in the mid-thoracic region, which was tender. Apart from an erythrocytic sedimentation rate of 62 mm/h, blood and urine examination were negative for myeloma. Radiological examination showed wedging of the T8 vertebra, later confirmed by CT scan (Fig. 2) due to a destructive lesion. A skeletal survey and a bone marrow aspirate were negative for myeloma or secondaries. A closed biopsy of the vertebra confirmed a diagnosis of a plasmacytoma. He was treated with radiotherapy and regularly followed up to monitor the possible subsequent development of multiple myeloma.

Case 3. A 57-year-old man had been treated for lymphoma with chemotherapy and was thought to have been cured in 1996. He was admitted acutely in April 1998, with back pain, paraesthesia in both legs and an unsteady gait. There was no difficulty in passing urine. Examination revealed an ataxic gait with bilateral ankle clonus. Although motor power was normal, light touch sensation in the left leg and pinprick in the right were diminished. The knee and ankle reflexes were brisk and exaggerated. A Babinski reflex was present. A plain radiograph showed bony destruction of the T7 vertebral body; CT scan (Fig. 3) revealed that the tumour mass extended into the spinal canal as well as the paravertebral region, with destruction of 2 adjacent ribs. The left axillary lymph node size was increased compared to a previous scan. Diagnosis of lymphoma was confirmed and he was referred for radiotherapy and chemotherapy.

Case 4. A 45-year-old man was admitted acutely in 1974 with a three-week history of acute backache with referred pain along the subcostal margin particularly at night, followed by a sudden onset of weakness in the legs and acute urinary incontinence. Examination demonstrated an abnormal gait with spastic paraparesis, bilateral ankle clonus, Grade II to III weakness of the lower limb muscles and a clear-cut sensory level at T10. Radiological examination revealed an osteolytic lesion in the body and lamina of the T8 vertebra. A myelogram revealed an extradural block at T8. An open biopsy of the lesion revealed an aneurysmal bone cyst. Despite radiotherapy, he remained paraplegic.

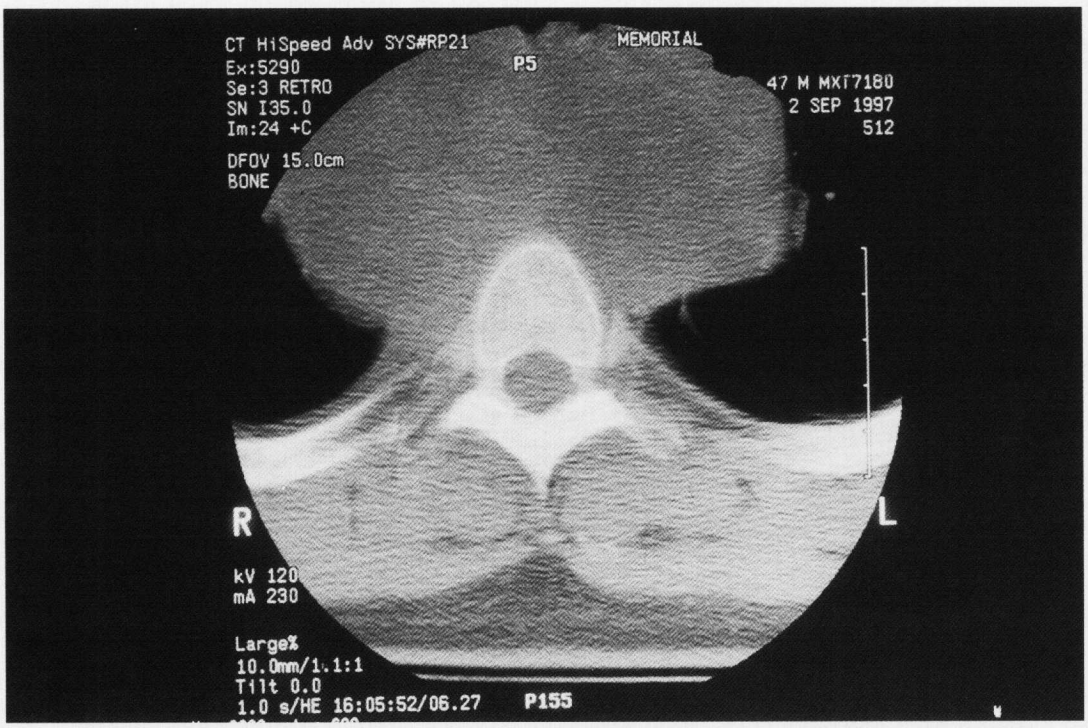

Figure 1 CT shows a large posterior mediastinal mass with bone destruction of T2, 3 with an extradural soft tissue component.

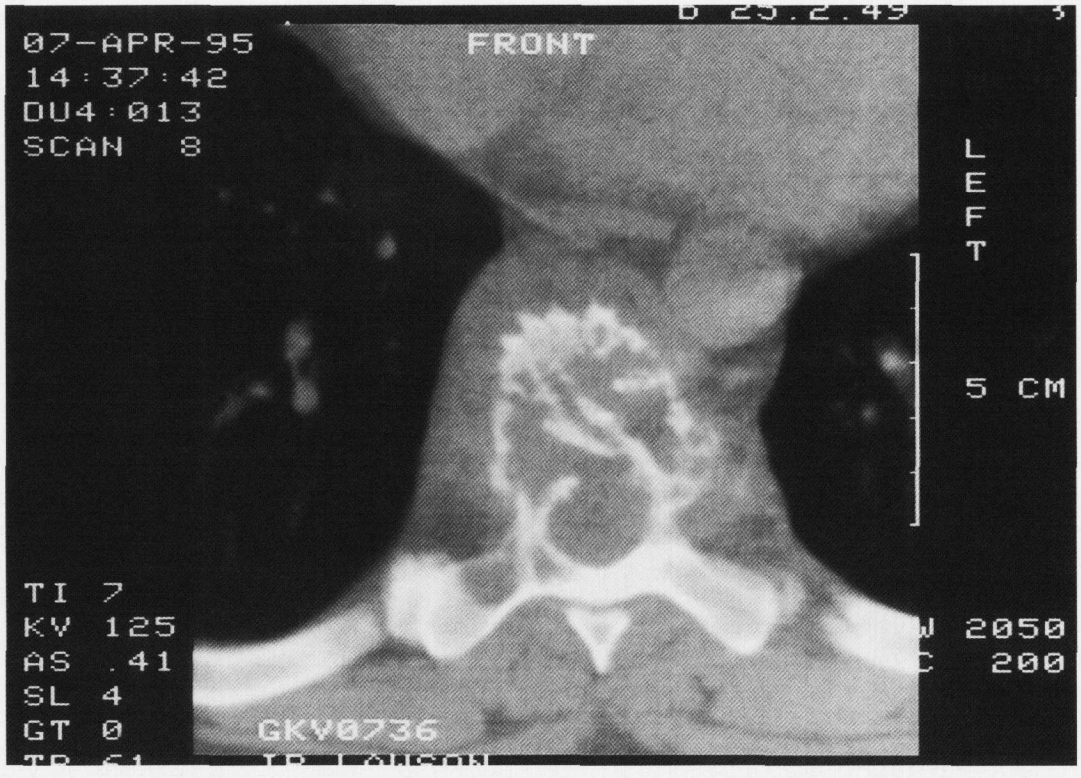

Figure 2 CT shows destruction of T8 without any evidence of lymph node enlargement

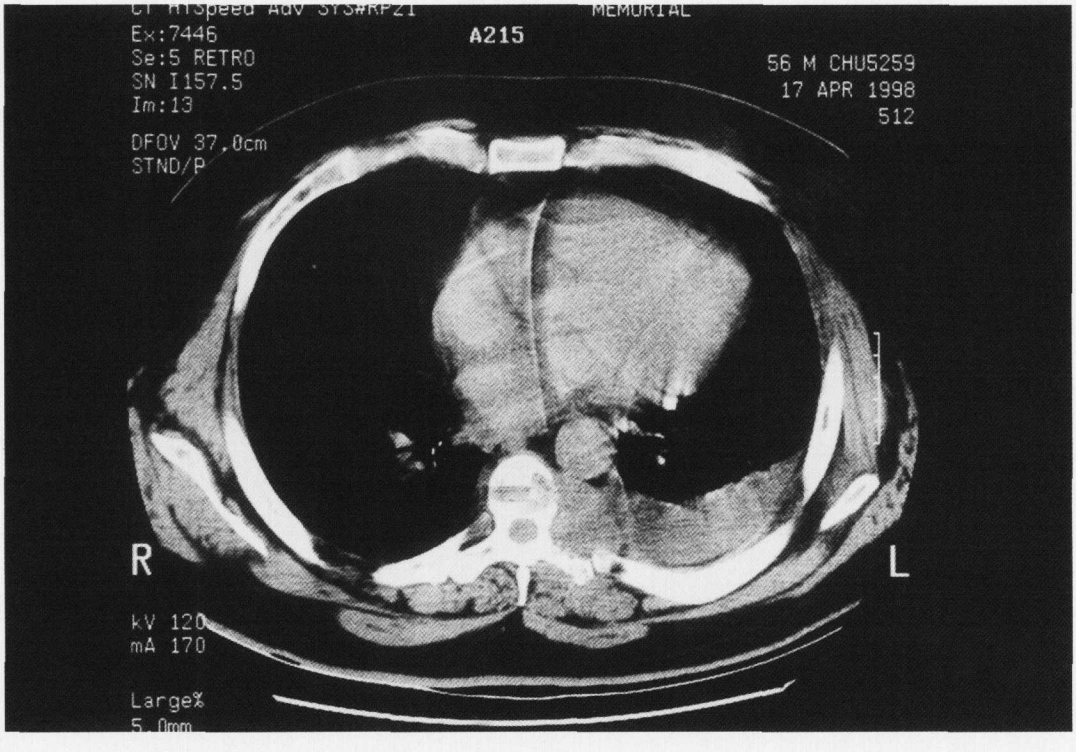

Figure 3 CT Scan: Bony destruction of the left side of the vertebral body and posterior arch of D7, with evidence of involvement of cord.

DISCUSSION

Thoracic backache in adults is less common than lumbar pain. Among the specific causes, discitis and osteomyelitis, secondaries (metastatic lesions) and multiple myeloma, and fractures due to osteoporosis and osteomalacia are the commonest. When a tumor is suspected, a thorough clinical history, assessment and investigation for the primary sites (breast, prostate, lungs, thyroid, renal and myeloma) should be performed before considering a primary bone tumour. Metastatic tumours are 35 times more common than primary tumours, and the literature is very scanty regarding primary vertebral tumours of the thoracic spine. Even the large series in the literature report a low incidence of primary vertebral tumours.[1,2] The author reports four patients whose tumours were mostly rare[3,4,5] and diagnosis was delayed because early symptoms were non-specific. The importance of early recognition is emphasised.

The incidence of primary tumour of the thoracic spine is less than 1% of all musculoskeletal tumours. Among the primary malignant tumours, 25% are plasmacytoma, 25% are lymphoma, 18% are chordoma and 18% are chondrosarcoma[2]. Benign tumours occur predominantly in children and young adults, and the commonest of these rare tumours are eosinophilic granuloma, aneurysmal bone cyst, osteoid osteoma and osteochondroma. When a primary tumor is suspected, investigation should include proper radiological examination, blood investigation, bone scan to localize and MRI & CT to define the extent of the tumour. As prognosis depends on histology, a biopsy is the crucial procedure for an accurate diagnosis. This can be accomplished by a CT-guided percutaneous technique or by an open method.

It is essential to diagnose bone tumours early as the presence of abnormal neurology is seen in half of the patients at the time of diagnosis in primary vertebral tumour, as compared to only 5% in secondaries of the spine. When there are minute neurological changes or a change in clinical symptoms or signs, it should cause a physician to have a high index of suspicion. Also, suspicion is required when backache is unresponsive to conservative therapy for six weeks or if the patient experiences night pain disturbing sleep and pain is enhanced by lying supine. A neoplastic process should be considered,[1] especially when it is associated with radicular pain or subtle signs of an upper motor lesion.

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