Introduction
Aneurysmal bone cyst (ABC) of the spine can cause acute spinal cord compression in young patients. We report the CT and MRI findings in a histology-proven case of spinal ABC presenting with sudden paraplegia. Typical features of a spinal ABC at the thoracic level with considerable extension into the posterior epidural space and cord compression were demonstrated. Special note was made of the disproportionately large longitudinal extent of the epidural component of the lesion. Associated vertebral collapse was absent. A fracture of the overlying cortex had probably allowed the lesion to decompress and track along the epidural space without significantly jeopardizing integrity of the osseous structures. This case illustrates a less frequently recognised mechanism of acute spinal cord compression by ABC.

Case report
A 15-year-old boy, with good past health, presented with sudden loss of power in his lower limbs. He had been suffering from back pain after a minor sprain occurring 3 days prior to admission. Physical examination revealed diminished power in both lower limbs, absence of abdominal reflexes, brisk bilateral knee and ankle jerks with right upward plantar reflex.

CT of the thoracic spine (Fig. 1) demonstrated an expansile mass involving the posterior vertebral body of T6 and the right-sided posterior elements. There was no discernible internal calcification within the mass. The osseous cortex along the medial aspect of the right pedicle and anterior lamina was absent.

On MRI (Fig. 2), the mass was isointense to muscles on T1-weighted sequences and hyperintense on T2-weighted (T2-W) sequences. It was predominantly cystic in nature and demonstrated multiple loculi with fluid-fluid interfaces on long TR sequences. The substances in the dependent portion of these loculi were hypointense while the non-dependent components were brighter. These loculi were bordered by thin, smooth septations, which enhanced moderately after IV gadolinium. There was no focal thickening or soft tissue mass associated with these septations. Epidural extension of the mass and its compressive effect on the dural sac and thoracic spinal cord were demonstrated well on the sagittal images (Fig. 3). Special note was made of remarkable extension of the mass in both cephalic and caudal directions within the epidural space, ending at T5 and T7 respectively. The longitudinal extent of the epidural portion was greater than any other dimension of the intraosseous components.

At operation a lobulated cystic lesion was found eroding the right posterior elements and body of T6. A fracture was noted in the anterior cortex of the right lamina and there was extra-osseous extension of the cystic mass into the epidural space from T5 to T7. Surgical excision of the mass, curettage of the bony cavity and posterior spinal fusion with autologous bone graft were performed.

Keywords
Children · Aneurysmal bone cyst · Spinal cord compression · MRI · CT

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Spinal aneurysmal bone cyst causing acute cord compression without vertebral collapse: CT and MRI findings
Histopathological examination of the lesion confirmed the diagnosis of spinal aneurysmal bone cyst. The wall of the mass was composed of collagenous fibrous tissue lined by fibroblastic cells. Inside the cystic loculi, blood in different stages of degradation was noted.

Discussion

ABC is a benign, highly vascular osseous lesion of unknown origin. Whether it is caused by local circulatory disturbance, such as venous thrombosis, or by hemorrhagic ‘blow-out’ in a pre-existing lesion remains unclear [1]. It is relatively rare, accounting for about 1.4% of all primary bone tumours [2]. It is usually found in the extremities, with the vertebral column being involved in only 3–20% of cases [3]. The peak age incidence is the second decade of life and ABC rarely occurs after the age of 30 years.

In most cases of vertebral involvement, the pedicles and posterior elements are involved. Extension of the lesion into the vertebral body and even adjacent vertebrae may happen [4]. Partial collapse of the vertebral body is common and even complete collapse (‘vertebral plana’) is not rare.

On CT, ABC appears as a multiloculated lytic lesion with multiple internal septations and fluid levels [5]. Definition of cortical integrity of the lesion and detection of matrix calcifications are better done by CT than MRI. On the other hand, the multiplanar capability and superb contrast resolution of MRI enables delineation of the full extent of the lesion, as well as the degree of compression of adjacent neural elements. ABCs are nonhomogeneous on MRI and, in general, are hyperintense on T2-W images. The appearance of the cystic loculi in our patient with fluid-fluid interfaces, hyperintense components on the nondependent side and darker substances on the dependent side is typical of ABCs on long TR sequences. Since these cysts contain blood at different ages of evolution, as confirmed by pathology,