and mediastinal windows demonstrated the CT angiogram sign.[1] Attenuation of the lobe was heterogeneous.[1] Multiple air bronchograms were seen[1,2] There was dilatation, stretching, sweeping, widening of the angle and crowding of bronchi .[1]

A pleural effusion was noted.

Discussion

Our patient had specific signs of bronchoalveolar consolidation which include squeezing, stretching and sweeping patent air bronchograms within the consolidated lung.[3] The 'crazy paving' pattern is due to thickening of the interlobular septae.[3] All these changes, due to unique lepidic growth of the tumour were also noted.[4]

Our patient did not have satellite lesions or bulging tissues, which increase the likelihood of bronchoalveolar carcinoma (BAC). Other absent signs were pseudocavitation, air fluid level in cavities and marginal enhancement.[4,5]

Although the CT angiogram sign was present it is also seen in pneumonia, and is therefore nonspecific.[4-6]

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Occult spinal dysraphism

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Case presentation

A 2-month-old male patient presented to our outpatient's department with a diffuse back swelling. The child is the fifth in a family with no history of congenital abnormalities.

The pregnancy went full term and was a normal vaginal delivery.

A diffuse swelling was noted in the midline in the lumbar region. The mass was covered with normal skin, with no discolouration, hair, sinus or ulceration. It had a soft, fatty feel on palpation.

There was no neurological dysfunction.

Plain film X-rays of the spine demonstrated spina bifida involving the whole spine with sparing of only T12, L1, L2 and L3 (Figs 1 and 2).

The defects were more pronounced in the upper cervical and sacral areas. The spinous processes in the thoracic and lumbar areas were visualised though they were not fused. A CT scan reconstruction of the whole spine demonstrated the spina bifida (Figs 3 and 4).

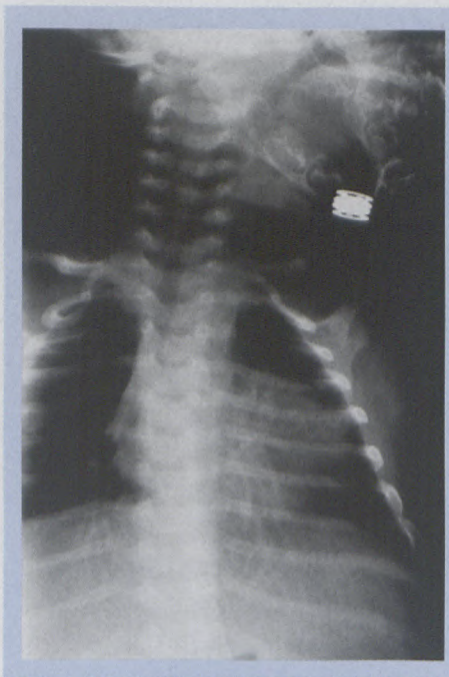

Fig. 1 AP spinal X-ray of the cervical and thoracic spine showing the extensive spina bifida involving both regions.

MRI findings showed a normal cord from the cervical to the sacral level.

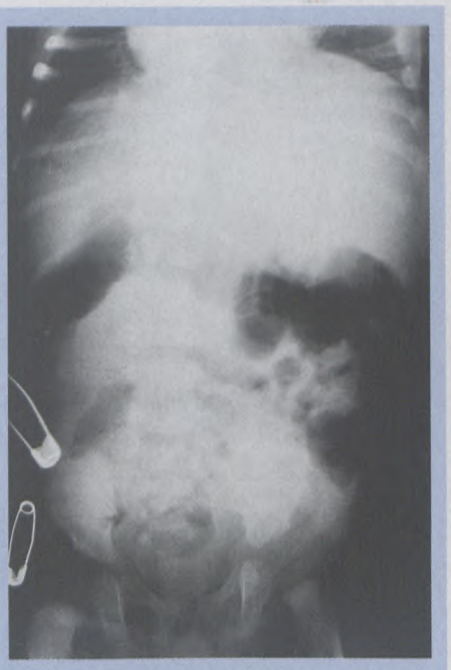

Fig. 2. AP spinal X-ray of the lumbo-sacral region demonstrating the spina bifida in the sacral region.

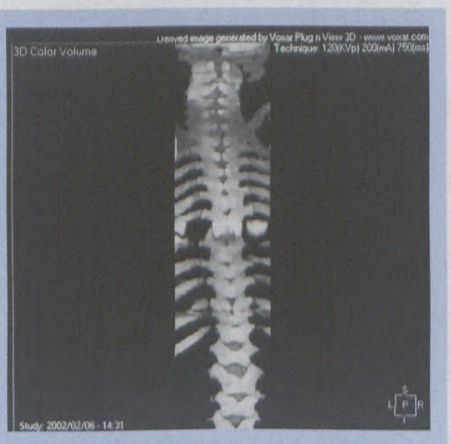

Fig. 3. CAT scan reconstruction of the spine demonstrating the spina bifida in the cervical and thoracic region.

A CT scan of the brain was not performed.

To the best of our knowledge such an extensive occult spinal dysraphism has not been reported in the literature.

Discussion

Simple occult spinal dysraphism is often an incidental finding caused by an incomplete closure of the spinal arches of the posterior elements of the vertebrae.

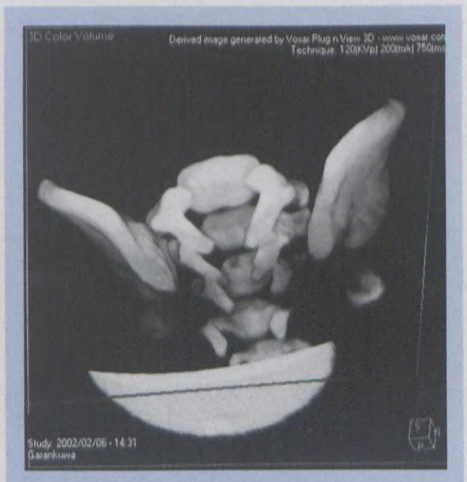

Fig. 4. CAT scan reconstruction of the sacrum demonstrating the open spinal canal in this region.

It occurs in 5 - 36% of the population and is often asymptomatic.

This report illustrates the presentation and radiological findings in a 2-month-old boy.

Spinal dysraphism is explained by two theories. The first theory, called the neurulation defect theory, holds that there is a primary failure of closure of the neural folds. This occurs between days 18 and 21 of gestation. The other theory, called the post neurulation theory, postulates that there is a breakdown in the posterior elements of the fused tube.[1]

Some authors report a slight female predominance while others report equal sex distribution.[2,3] There is a lower risk among blacks compared with the Caucasian population and the risk in the general population is about 5 - 36%.[4]

The clinical pointers to the existence of an occult spinal dysraphism in the postnatal life are classical skin markers, which occur in 75 - 83% of patients. These include dimples, sinus tracts, hypertrichosis and capillary haemangiomas.

There can be associated occult intraspinal lesions such as epidermoid and dermoid tumours, lipomas, diastematomyelia, dural bands and tethered spinal cord.[5]

Forty-five per cent of the lesions occur over the thoracolumbar junction, 20% over the lumbar segment, 20% over the lumbosacral junction and 10% over the sacral region.

Patients with occult spinal dysraphism of the simple type are usually asymptotic compared with the symptomatic ones whose clinical presentation is as a result of traction from a tethered cord or pressure effect from the associated lesions or a combination of both.

These children present clinically at the time they start to walk with a combination of neurological problems like sphincter disturbances, neurological defects like motor weakness and sensory loss, and orthopaedic abnormalities like foot and ankle deformities.

The classic roentgenographic appearance is a widened spinal canal with defects in the spinous process and a variable portion of the lamina. CT scan and MRI will elucidate the other associated intraspinal lesions.

Treatment is surgical and is reserved for patients with symptomatic occult spinal dysraphism.

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