

Mind Your Back

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ABSTRACT

Spinal fractures can be potentially unstable and they may result in significant morbidity. Appropriate and prompt imaging plays an important role in the management of these patients by delineating the anatomy, extent of injury and associated complications. We present a simple case of a vertebral burst fracture to illustrate the role of imaging.

Keywords: axial compression force, cauda equina syndrome, spinal canal stenosis, spinal trauma, vertebra

PRESENTATION

A 24-year-old man fell from a height of 10 metres (2 storeys), resulting in direct impact on his back. No head injury or loss of consciousness was reported. On examination, he was tender over the lumbar region. No focal neurological deficit was present at that time. Pelvic compression test was negative.

IMAGING FINDINGS

Portable lumbar radiographs revealed loss of height in the L2 vertebral body with retropulsion of a fracture fragment into the spinal canal (Fig. 1). There was disruption of the anterior and middle vertebral columns, making it an unstable fracture. Increased focal kyphosis was noted at this level.

Further evaluation with CT (computer tomography) and MRI (magnetic resonance imaging) confirmed the presence of a burst fracture of L2 with more than 50% vertebral height loss (Figs. 2 and 3, overleaf). A vertical fracture line was also seen extending into the base of the spinous process. There was significant postero-superior retropulsion of a fracture

fragment, with commensurate severe narrowing of the spinal canal. This was further compounded by an anterior epidural haematoma. MRI demonstrated compression of the cauda equina. A small paravertebral haematoma was also present.

SURGICAL MANAGEMENT

The patient underwent an anterior L2 corpectomy with reconstruction of sagittal alignment with a Synmesh cage, autologous bone graft and Ventrofix fixation. There was also no permanent neurological deficit upon patient discharge.

DISCUSSION

A burst spinal fracture is due to an axial compression force on the vertebral body, resulting in disruption of the anterior and middle vertebral columns. According to the Dennis classification, a fracture is considered unstable when at least 2 of the 3 vertebral columns are disrupted¹.

Plain radiograph is accurate when used as a screening modality and it has a limited role in the quantitative assessment of these fractures². Cross-

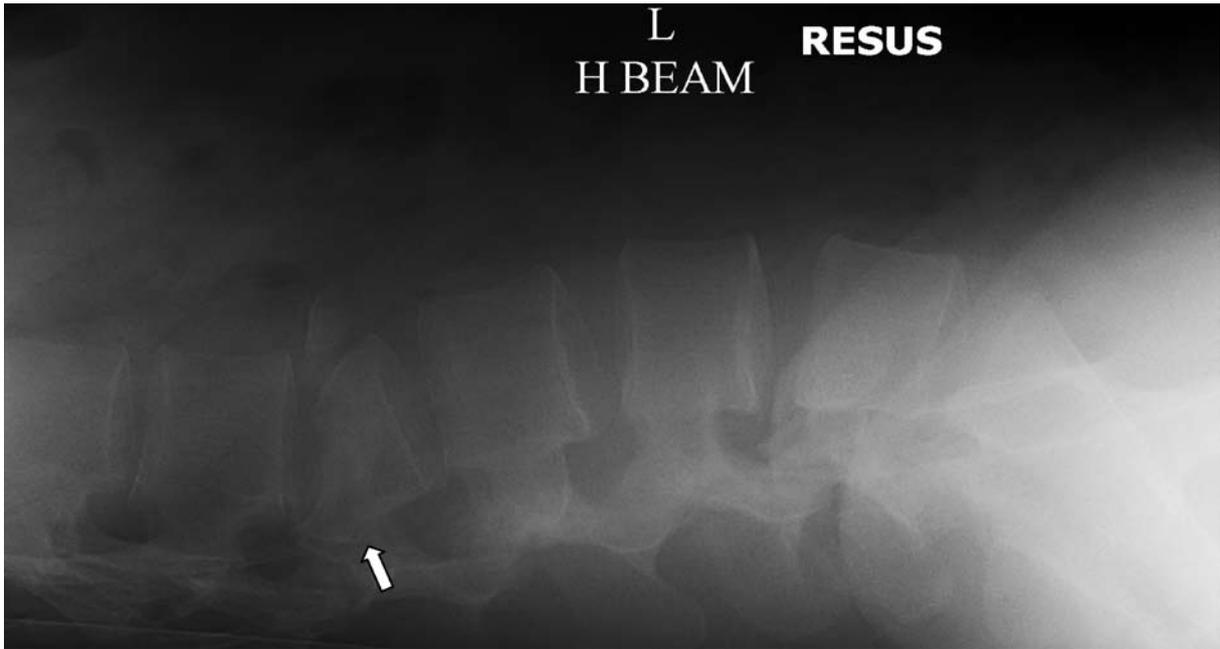


Fig. 1. Portable lateral lumbar spine radiograph demonstrating an unstable L2 burst fracture with retropulsion of a fracture fragment into the spinal canal (white arrow).

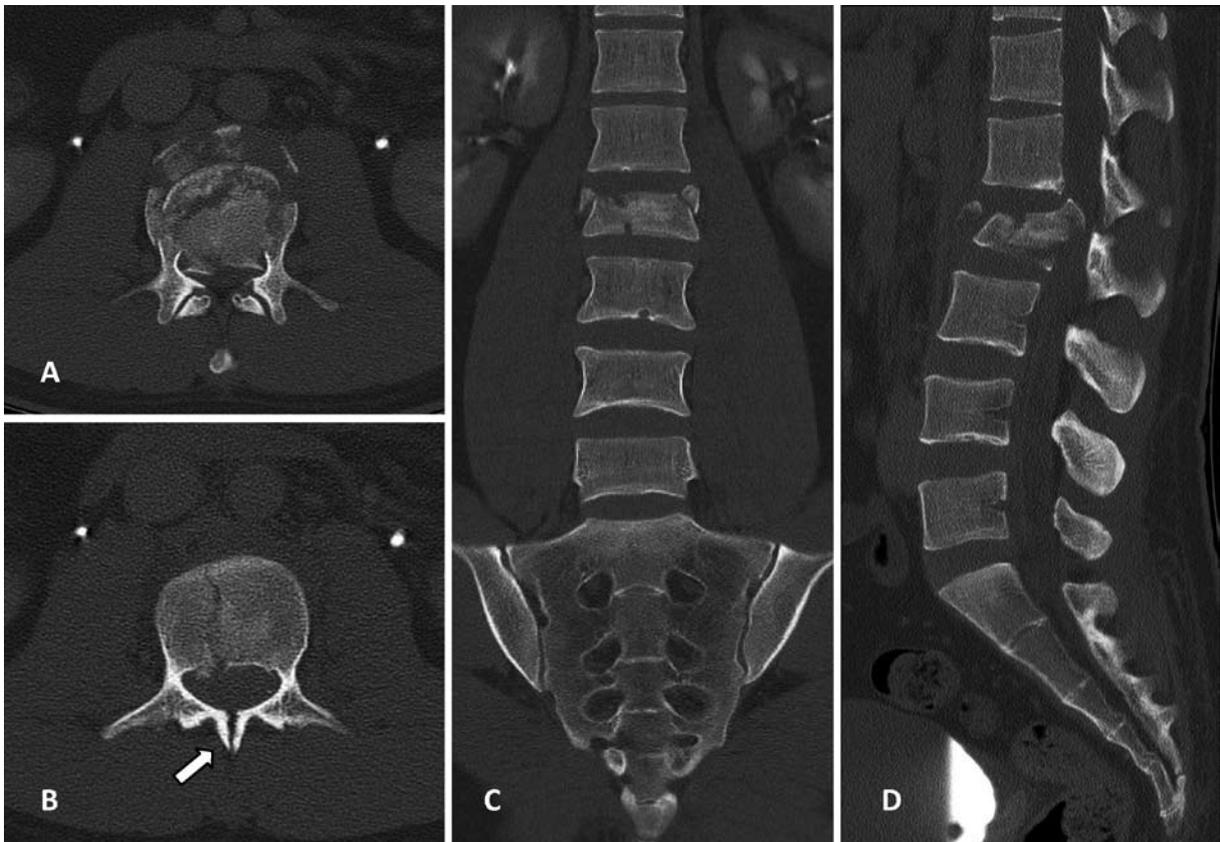


Fig. 2. (A and B) Axial CT images showing the burst fracture with extension of the fracture into the base of the spinous process (arrow). Coronal (C) and sagittal (D) CT images demonstrating spinal instability with retropulsion of a fracture fragment into the spinal canal.



Fig. 3. Axial T2w (A), sagittal TIRM (B) and sagittal T1w (C) MRI pulse sequences showing severe spinal canal narrowing with indentation of the cauda equina. There is a small anterior epidural haematoma (arrow).

sectional imaging with CT and MRI is more valuable in depicting the anatomy and extent of injury, as well as to exclude complications such as spinal canal stenosis, cord compression, cauda equina syndrome and epidural haematomas.

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