

CASE REPORT

Traumatic Lateral Listhesis of Lumbar Spine in a Young Female

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ABSTRACT

Traumatic lateral translation is an extremely rare presentation. The diagnosis may be easily missed. An 18-year-old female presented with fall from height and backache and weakness in bilateral lower limbs. On examination, there was tenderness in lumbar spine, step-like deformity; neurological examination revealed no sensory loss and grade III power in both lower limbs without bowel and bladder involvement. Radiographic examination showed anterolateral listhesis of L5 over S1. Magnetic resonance imaging showed spinal canal stenosis and mild compression of traversing caudal roots. Patient was treated with open reduction and stabilization with posterior instrumentation, decompression, and posterolateral fusion. Complete neurological recovery was observed over 1-year follow-up period.

Keywords: Lateral, Listhesis, Lumbar, Spine, Traumatic.

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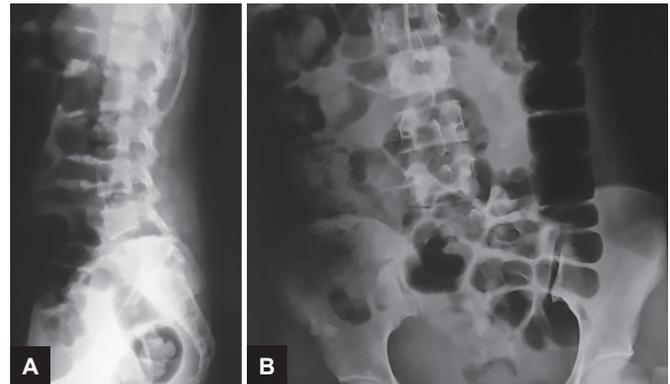
Conflict of interest: None

INTRODUCTION

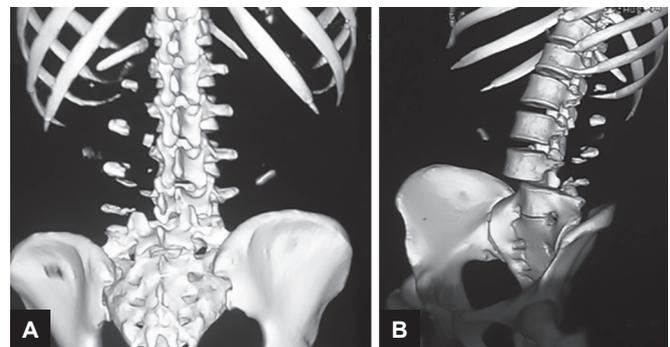
Traumatic spondylolisthesis of lumbosacral region is relatively uncommon but lateral translation is an extremely rare presentation and is often present in patients with polytrauma. It is often not thought of and the diagnosis may be easily missed.

CASE REPORT

An 18-year-old female presented to the emergency room with the history of fall from height of about 4 m on day 2 of injury with complaints of backache and weakness in bilateral lower limbs. On examination, there was tenderness in lumbar spine, step-like deformity; neurological examination revealed no sensory loss and grade III power in both lower limbs without bowel and bladder involvement. Radiographic examination showed anterolateral



Figs 1A and B: X-rays of lumbosacral spine in anteroposterior and lateral views showing anterolateral listhesis of L5-S1



Figs 2A and B: Computed tomography scan with three-dimensional reconstruction showing fractures of posterior elements at multiple levels

listhesis of L5 over S1 (Fig. 1). Computed tomography (CT) showed fracture of facet joints of L5-S1 with fracture of posterior elements at multiple levels of lumbar spine (Fig. 2). Magnetic resonance imaging was done to check the cord status and it showed spinal canal stenosis and mild compression of traversing caudal roots (Fig. 3). Patient was treated with open reduction of dislocation and stabilization with posterior instrumentation, decompression, and posterolateral fusion with autologous bone graft (Fig. 4). Six months postoperatively, complete neurological recovery was observed.

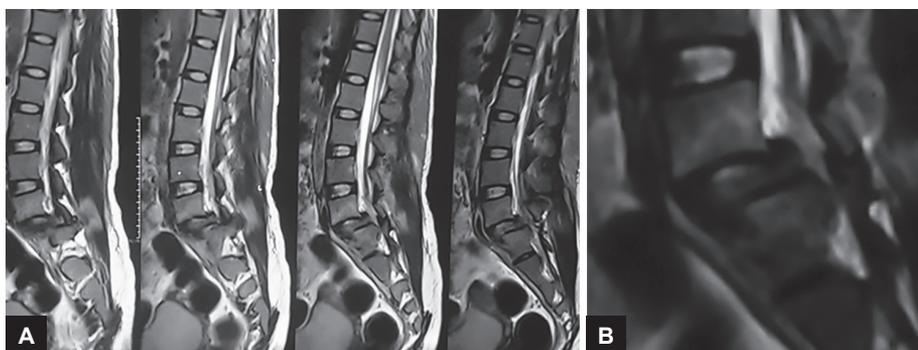
DISCUSSION

Traumatic dislocation of lumbosacral region is often associated with multiple injuries and is a rare presentation and even rarer in females.¹ There are five types of spondylolisthesis: dysplastic, isthmic, degenerative, traumatic, and pathologic. Traumatic spondylolisthesis is the fracture of posterior elements, rather than the pars

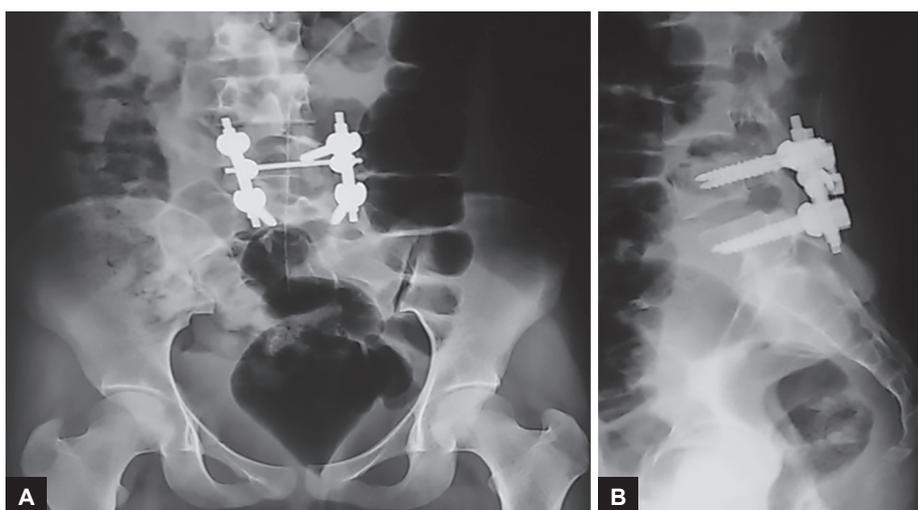
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Figs 3A and B: Magnetic resonance imaging showing disk bulge at L5-S1 level with significant canal stenosis



Figs 4A and B: Postoperative X-rays showing correction of listhesis with posterior instrumentation

interarticularis, which leads to instability and listhesis.² A combination of hyperflexion and compression are responsible for causing bilateral L5-S1 dislocation but according to Watson-Jones, hyperextension is the main mechanism of the injury.^{3,4}

In our patient, hyperflexion and compression was the main mechanism of injury. Because of severe osseoligamentous damage, traumatic fracture–dislocation of the lumbosacral spine is considered as highly unstable; being a three-column injury, open reduction and internal fixation is always recommended.^{5,6} Furthermore, early decompression of the cord promotes recovery of neurological function. The timing of decompression and the degree of spinal canal narrowing are the main factors affecting neurological recovery;⁷ our patient was operated on 5th day of injury. Though conservative methods have been described in literature but operative treatment with decompression offers better results and is the most accepted treatment modality.⁸

Traumatic lumbosacral spondylolisthesis is a rare injury pattern. Its diagnosis can be missed initially as it is usually associated with other life-threatening injuries; therefore CT with biplanar reconstructions is mandatory in addition to good-quality conventional radiographs.

Surgical treatment, including reduction, stabilization, and interbody fusion, is the method of choice.

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