

Anterior corpectomy and cage with posterior spinal instrumentation and fusion for L3 burst fracture with paraplegia.

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INTRODUCTION:

Burst fractures result in vertebral body collapse and a kyphotic deformity, which may cause neurological compromise(1). It is crucial to maintain spinal stability and decompress the spinal canal in these patients, with the choices of anterior, posterior, or combined approaches(2). To our best knowledge, decompression and instrumentation via a combined lateral and posterior approach are rarely described in the currently available literature.

REPORT:

We present a case of a healthy 17-year-old gentleman who was struck by a falling tree. He complained of lower back pain with paralysis of both lower limbs. The clinical examination showed lumbar tenderness. Power from L2 to S1 was 0 bilaterally. Sensation below L1 all reduced. The anal tone was lax and the bulbocavernosus reflex was absent. Plain radiographs and CT images revealed a severe burst fracture of the L3 vertebral body. A diagnosis of unstable L3 burst fracture with bilateral lower limb paraplegia (AIS A) was made. The patient first underwent posterior spinal instrumentation and fusion (PSIF) of the L1, L2, L4, and L5 vertebrae in the prone position, followed by L3 corpectomy and cage insertion via the left lateral approach. At 1-year post-op follow-up, the power of the right L2 and L3 myotomes had increased to 4, and the power of the other affected myotomes was 5. The sensation of all the dermatomes had completely recovered.



Figure 1: AP and lateral views of the thoracolumbar X-rays pre-operatively



Figure 2: AP and lateral views of the thoracolumbar X-rays post-operatively

CONCLUSION:

PSIF alone has a 9-54% failure rate and re-kyphosis rate (1). An anterior approach allows for complete decompression and reconstruction of the anterior two-thirds of the spinal column, with immediate spinal stability. Although subsidence and late fusion have been reported to range from 19.6% to 75% (3), the patient did not have such complications. In conclusion, the combined approach of ventral lumbar corpectomy and cage with PSIF is safe and it provides the advantages of the individual approaches.

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