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Clinical Image

Staged Bilateral Traumatic Pedicle Fractures in The Lumbar Spine

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1. Abstract

Staged bilateral traumatic pedicle fractures of lumbar spine (LS) are rare, only two cases have been described in the literature. This is the first case reported in an adolescent patient. Injuries to this area, therefore, are infrequent and involve the transfer of high amounts of energy responsible most often for spinal instability requiring spinal stabilization surgery with or without decompression of nerve structures.

A 14-year-old male admitted to our hospital with story of LS trauma, he fell from a tree about 3.5 meters high with reception on the buttocks, then receives the tree trunk on the LS (patient's trunk slightly deviated during the second trauma). Computerized tomography (CT) scan of LS showed in sagittal (Figure 1 (Panel A)) and axial (Figure 1 (Panels B, C)) sections a complex LS four (L4) fracture, spondylolisthesis of vertebrae three (L3) on L4 (classified Meyerding grade II) ; bilateral lumbar pedicle fractures L3 (Figure 1 (Panel B)) and L5 (Figure 1 (Panel C)).

The clinical presentation was characterized by low back pain, motor weakness of grade 3/5 of the iliopsoas, quadriceps and tibialis anterior on both side, hypoesthesia at higher level L3, no sphincter disorder. We decompressed nerves structures by laminectomy of L3, L4 and L5, and then stabilisation with mono- and poly-axial screws associated with pre-lordosed rods were performed from L1 to S1 showed in postoperative CT scan (Figure 1 (Panel D, right side) and (Panel E, left side)).

Postoperative recovery was uneventful and the patient was discharged with a thoracolumbar corset 2 weeks after without low back pain and with intact neurological function of both legs.

Given the instability of the fracture, the compression of neural elements, we prefered this method which was supposed to be simple.

Figure 1: CT scan of LS showed in sagittal (Panel A) and axial (Panels B, C) sections a complex LS four (L4) fracture, spondylolisthesis of vertebrae three (L3) on L4 (classified Meyerding grade II) (Panel A); bilateral lumbar pedicle fractures L3 (Panel B)) and L5 (Panel C). Postoperative CT (D, E) showing osteosynthesis material in place in right (D) and left (E) pedicle sagittal sections.

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