

Two-point fixation to stabilize hypermobile lumbar vertebral body during posterior spinal fixation

Sir,

Spondylolisthesis is the anterior subluxation of one vertebral body over another and is characterized by a failure of the three-column support requiring reconstruction to develop altered supporting structures.^[1-3] In patients with symptomatic spondylolisthesis, posterior lumbar pedicle screw instrumentation has been successfully and widely used for reconstruction of the affected segments.^[4-6] A 54-year female presented with progressively increasing low back pain of two-year duration radiating to both the lower limbs. There was no history of motor weakness. Bowel and bladder functions were normal. On examination, she was overweight. Straight leg raising test was 45°. There were no motor or sensory deficits. Bilateral ankle jerks were absent. Planters were flexor. The X-ray lumbar spine showed grade II L5 over S1 listhesis [Figure 1]. The magnetic resonance imaging MRI lumbar spine showed the similar findings without any evidence of disc prolapse. The patient did not respond to initial conservative management and she was planned for posterior lumbar pedicle screw instrumentation. Standard technique of open posterior lumbar pedicle screw instrumentation was adopted in the present case.^[7-9] Intra-operative fluoroscopy was used to confirm the level as well as for localization of the pedicles and the acceptable entry point, and the alignment was defined. An awl was used to create the entry point for screw. However, it was realized that there was excessive mobility of the L5 vertebral body while the awl was tried to gently hammer into the L5 body through the pedicle. To overcome this limitation and to stabilize the hypermobile L5 vertebral body during surgery, another awl was inserted into the opposite pedicle to stabilize the vertebral body during the hammering movement [Figure 2]. With the help of intra-operative fluoroscopy the position of the awls was confirmed and the pedicle screws were placed one by one into the L5 vertebral body while restricting the movements of the L5 body during surgery [Figures 3 and 4]. Cancellous bone harvested from the laminae and spinous process was packed over the decorticated bone surface. Standard procedure was followed in the present case i.e., neural decompression, internal fixation, and autogenous bone grafting for the fusion in a case of spondylolistheses to provide three-column stabilization.^[1-6] In addition to the well-described procedure, we used two awl techniques to stabilize the L5 vertebral body for hypermobile bone segment with good outcome.



Figure 1: X-ray lumbo-sacral spine showing grade II L5 over S1 listhesis

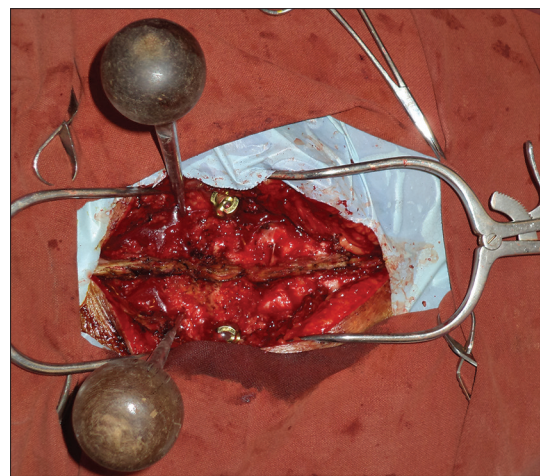


Figure 2: Intra-operative photograph showing two awls were placed in both right and left pedicle

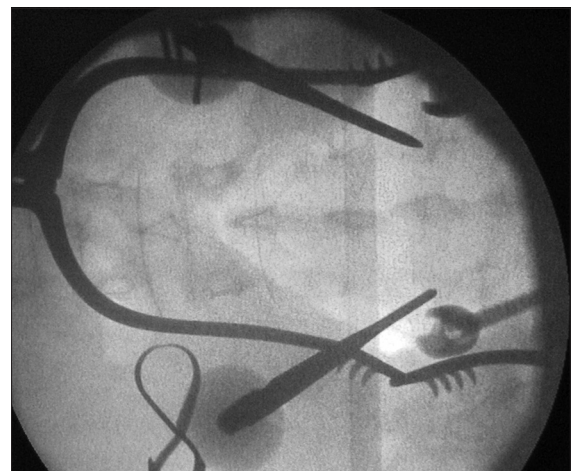


Figure 3: Intra-operative fluoroscopy confirmed the position of the awls

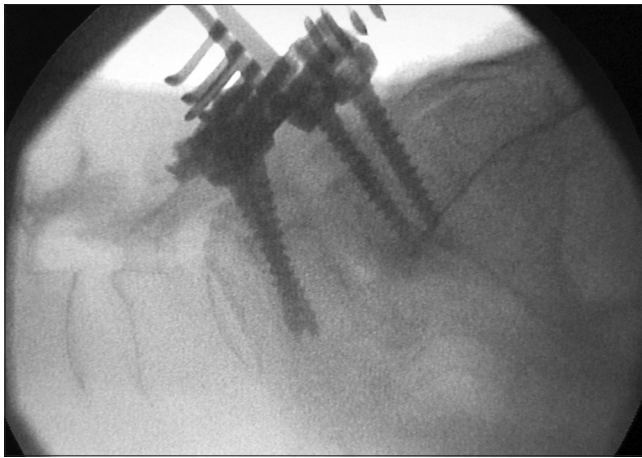


Figure 4: Final position of the screws

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