Endoscopy-assisted approaches for anterior column reconstruction after pedicle screw fixation of acute traumatic thoracic and lumbar fractures.

OBJECTIVE: Surgical treatment of thoracic and lumbar vertebral body fractures combines instrumentation to stabilize the fracture and an anterior reconstruction to promote fusion of the fractured spine. The aim of the present study was to show that minimally invasive thoracoscopic or endoscopy-assisted approaches to the thoracic and lumbar spine are feasible for anterior column reconstruction.

METHODS: This prospective, single-center study included 83 consecutive patients harboring 100 acute thoracic and lumbar vertebral fractures. Patients' neurological status; preoperative, postoperative, and follow-up radiographic data; and surgical data were obtained.

RESULTS: Fractures ranged from T5 to L5. All fractures underwent posterior pedicle screw fixation followed by a thoracoscopic or endoscopy-assisted anterior approach for anterior column reconstruction to promote fusion. Ventral graft position was correct in 45 patients and acceptable in 37 patients; one patient required a surgical repositioning. Initial correction of kyphosis was 9 degrees; during follow-up (23 +/- 11 mo), the mean loss of correction was 6 degrees. In 84 minimally invasive approaches, five conversions to an open approach were necessary. Complications included one case of L1 nerve root injury, two cases of transient neurological worsening, one case of posterior wound infection, and
one case of pleural empyema. CONCLUSION: The minimally invasive endoscopic approach for anterior column reconstruction is a feasible strategy in the treatment of unstable thoracic and lumbar fractures. Fracture type and the material of the anterior graft can affect long-term maintenance of correction.