

# Lumbar spondylectomy

Lumbar [spondylectomy](#).

It is unknown if [spinal instrumentation](#) is required to prevent [deformity](#) after partial [vertebrectomy](#) in the treatment of primary [bronchogenic carcinomas](#) invading the spine (PBCIS).

There are no validated criteria to justify a systematic spinal instrumentation when performing a partial vertebrectomy during en bloc resection of PBCIS. Performed alone without spine instrumentation, both type A and type B resections on less than three resected vertebrae were not subject to sagittal and coronal deformity even after a long follow-up, emphasizing that a systematic stabilization is not needed in this low-risk group. These results could help to reduce the perioperative morbidity of these procedures that are usually long and complex <sup>1)</sup>.

## Indications

A vertebrectomy is indicated for lesions in zones 4-8, or 5-9 of the [Weinstein Boriani Biagini classification](#) with at least one pedicle free of tumour. This allows for a combined posterior approach, with the posterior elements removed in a piece-meal fashion. The unaffected pedicle allows for resection on the posterior aspect of the vertebral body, with the subsequent establishment of haemostatic control, as well as freeing of the posterior longitudinal ligament. A second anterior approach is then utilised to remove the vertebral body containing the tumour in its entirety (en-bloc) <sup>2)</sup>.

Modified approach for piecemeal lumbar [vertebrectomy](#) through a bilateral transpedicular approach followed by double cage reconstruction and short segment fusion. This technique affords several advantages, the most obvious of which is that it allowed the use of a significantly smaller midline incision (6 cm). This smaller exposure did not compromise our ability to perform a vertebrectomy <sup>3)</sup>

## Case reports

### 2015

A case of undetected traumatic double-level spondyloptosis in the upper thoracic region in an adult male patient who was neurologically intact for 2 days but later became paraplegic. Initially, management of this pathology seemed a very challenging scenario. However, with review of the reconstructed CT images and reproduction of the injury on a plastic model, a posterior-only approach was chosen as an alternative operative solution for this catastrophic injury. Via this single-stage posterior approach, long-segment pedicle screw/rod instrumentation resulted in successful reduction, restoration of alignment, and stabilization after 1-level posterior [spondylectomy](#). To the best of the authors' knowledge, this is the first example reported in the literature of double-level spondyloptosis of the thoracic and the lumbar spine. This report describes the rationale, mechanism, and technical details afforded for reduction and stabilization of this rare injury <sup>4)</sup>.

<sup>1)</sup>  
Ng S, Boetto J, Poulen G, Berthet JP, Marty-Ane C, Lonjon N. Partial vertebrectomies without

instrumented stabilization during en bloc resection of primary bronchogenic carcinomas invading the spine: feasibility study and results on spine balance. World Neurosurg. 2018 Nov 21. pii: S1878-8750(18)32648-2. doi: 10.1016/j.wneu.2018.11.098. [Epub ahead of print] PubMed PMID: 30471449.

<sup>2)</sup>  
[http://www.scielo.org.za/scielo.php?script=sci\\_arttext&pid=S1681-150X2011000300003](http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S1681-150X2011000300003)

<sup>3)</sup>  
Jandial R, Chen MY. Mini-open transpedicular lumbar vertebrectomy reconstructed with double cages and short segment fixation. Surg Neurol Int. 2012;3(Suppl 5):S362-5. doi: 10.4103/2152-7806.103869. Epub 2012 Nov 26. PubMed PMID: 23248755; PubMed Central PMCID: PMC3520075.

<sup>4)</sup>  
Rahimizadeh A, Rahimizadeh A. Management of traumatic double-level spondyloptosis of the thoracic spine with posterior spondylectomy: case report. J Neurosurg Spine. 2015 Dec;23(6):715-20. doi: 10.3171/2015.3.SPINE14183. Epub 2015 Aug 21. PubMed PMID: 26296192.

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