

Transforaminal thoracic intervertebral fusion

Dumbbell-shaped [thoracic spinal tumors](#) represent a distinct type of tumor and involve in both the [spinal canal](#) and the posterior thoracic cavity. Successful treatment for the tumors depends on [gross total resection](#) (GTR) via an open [laminectomy](#) and facetectomy or [transthoracic transpleural approach](#).

Case series

2016

Li et al retrospectively reviewed two patients with dumbbell-shaped thoracic tumors who underwent minimally invasive resection and unilateral [transforaminal thoracic intervertebral fusion](#) (TTIF) through unilateral paraspinal muscle approach with a spotlight expandable tubular retractor. Clinical data, tumor characteristics, and outcomes were analyzed.

Two patients underwent successful minimally invasive treatment of their spinal neoplasms. There were no procedure-related complications. The efficacy in terms of neurological recovery, pain improvement and operative variables (length of incision, operative duration, blood loss, and hospital stay) was better when compared with prior published studies. Postoperative CT image demonstrated complete resection of dumbbell tumor in the patients. The solid fusion was obtained after 3 months follow-up and there was no failure of internal fixation.

If the medial border of intracanal component of extradural dumbbell tumor is near the midline of canal and the pedicles of adjacent vertebrae to tumor are intact, minimally invasive resection of tumor through unilateral paraspinal muscle approach combined with unilateral TTIF is good choice ¹⁾.

2009

Thirty-eight patients with [thoracic disc herniation](#) (TDH) were treated with [posterolateral transforaminal interbody fusion](#) (PTIF) from November 1999 to November 2003. The mean follow-up period was 5.8 years (range, 4.2 to 6.5 years). There were 24 men and 14 women, ranging from 30.5 to 67.5 years, with an average of 46.5 years. The interval between onset of symptoms and surgery ranged from 5 to 12 months with an average of 9 months. In this group, the disc herniation involved T(9-10) or T(10-11) in 26 (68.5%) patients, T(8-9) in 4 (10.5%), T(11-12) in 4 (10.5%) and T(12)L(1) in 4 (10.5%). All patients underwent X-ray and magnetic resonance imaging (MRI) examination. Twenty-two patients underwent myelography, while 25 patients underwent computer tomography (CT) or CT myelography (CTM) examination. The clinical results were evaluated using the Otani scoring system.

The outcome according to the Otani scoring system was excellent in 16 patients, good in 18, fair in 2 and poor in 2. No neurological symptoms, wound infection or clinical or radiographic evidence of instability were found; and the fusion rate was 100% by final follow-up. An excellent or good outcome was achieved in 89.5% of patients.

PTIF is an effective strategy for the treatment of TDH ²⁾.

¹⁾

Li C, Ye Y, Gu Y, Dong J. Minimally invasive resection of extradural dumbbell tumors of thoracic spine:

surgical techniques and literature review. Eur Spine J. 2016 Jul 1. [Epub ahead of print] PubMed PMID: 27371333.

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Ding WY, Guo Z, Zhang YZ, Shen Y, Li BJ, Zhang W, Chen HL. Posterolateral transforaminal interbody fusion for thoracic disc herniation: a retrospective study of 38 cases. Orthop Surg. 2009 Nov;1(4):280-4. doi: 10.1111/j.1757-7861.2009.00048.x. PubMed PMID: 22009876.

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