Pedicle sparing transfacet approach



The transfacet pedicle-sparing approach allows for complete disc removal with limited spinal column disruption and soft-tissue dissection. Fifteen cadaveric spinal columns were used for evaluation of exposure, development of thoracic microdiscectomy instrumentation, and establishment of morphometric measurements. This approach was used to remove eight thoracic discs in six patients. Levels of herniation ranged from T-7 through T-11. Preoperatively, all patients had moderate to severe axial pain, and three (50%) of the six had radicular pain. Myelopathy was present in four (67%) of the six patients. Through a 4-cm opening, the ipsilateral paraspinal muscles were reflected, and a partial facetectomy was performed. The disc was then removed using specially designed microscopic instrumentation. Postoperatively, the radiculopathy resolved in all patients. Axial pain and myelopathy were completely resolved or significantly improved in all patients. The minimal amount of bone resection and muscle dissection involved in the operation allows for: 1) decreased operative time and blood loss; 2) diminished perioperative pain; 3) shorter hospitalization time and faster return to premorbid activity; 4) avoidance of closed chest tube drainage; and 5) preservation of the integrity of the facet-pedicle complex, with potential for improvement in outcome related to axial pain. This technique appears best suited for the removal of all centrolateral discs, although it has been used successfully for treating a disc occupying nearly the entire ventral canal. The initial experience suggests that this approach may be used to safely remove appropriately selected thoracic disc herniations with good results ¹⁾.

A pedicle-sparing transfacet approach (PSTA) was first described in 1995, but to date no sufficient clinical series has been presented in the literature to report on its feasibility and applicability along with complication and morbidity rates.

The objective of Çelik et al., was to assess the feasibility of the PSTA under microscopic visualization in a cumulative clinical series.

Twenty-eight consecutive patients with no response to medical/physical treatment with and without motor weakness of their lower extremities underwent the surgery for TDH via the PSTA under microscopic visualization by a senior neurosurgeon. Preoperative and postoperative low extremity muscle strength, sensation, reflex status, and visual analog scores (VAS), Nurick grades, and complications were recorded. Postoperative MRI within 24 hours was performed. The median follow-up period was 33 months.

The patients consisted of 16 men and 12 women. The disk levels ranged from T8 to T12-L1. All but one patient received one-level surgery. One patient was operated on two levels. A total of 21 patients had paracentral disk herniations; the other 7 had central disk herniations. Postoperative MRI showed satisfactory removal of disk herniation in all but one patient. There was no infection, wrong level surgery, or incidental durotomy. Median VAS levels significantly improved after the operation from 7.4 to 2.3. The Nuric grades decreased from 2.7 to 1.6 after surgery.

The microsurgical PSTA is a safe and feasible technique with a significantly shorter surgeon's learning curve. The approach offers a wide surgical window; moreover, it can by increased by tilting the surgical table allowing satisfactory decompression of TDH. After PSTA, segmental instrumentation is not required ²⁾.

1)

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