Ten-Step Minimally Invasive Cervical Laminectomy via Unilateral Tubular Approach: Technical Note and Early Clinical Experience

Poster #42135

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Introduction

Cervical spondyloptic myelopathy (CSM) refers to impaired function of the spinal cord caused by degenerative changes of the cervical spine anatomy.

Minimally invasive spine surgery (MISS) utilizing tubular retractors has become an increasingly popular approach to the spinal column.

Unilateral approach for bilateral decompression (UABD) was applied to MISS for the treatment of lumbar spinal stenosis in 2002.\textsuperscript{1-3} UABD has recently been applied to the cervical spine for the treatment of CSM.\textsuperscript{4-9}

We describe a clear and thorough ten-step technique for the safe and effective performance of a minimally invasive cervical laminectomy via a unilateral, tubular approach and report our early clinical experience.
Methods

Patient Selection
• Retrospective chart review between 2008-2017
• Patients undergoing minimally invasive cervical UABD laminectomy

Outcome Measures
• Number of levels treated
• Surgical operative time
• Estimated blood loss
• Complications
• Duration of follow-up
• Visual analogue scale (VAS), neck disability index (NDI), and modified Japanese Orthopaedic Association (mJOA) score preoperatively and postoperatively
Methods

Ten-Step Operative Technique:
Step 1: Positioning and Localization.
Step 2: Approach (Fig. A and B).
Step 3: Dilation and Retractor Placement (Fig. C and D).
Step 4: Exposure of Bony Anatomy (Fig. E and F).
Methods

Ten-Step Operative Technique:
Step 5: Ipsilateral laminectomy (Fig. G).
Step 6: Contralateral Laminectomy (Fig. I and J).
Step 7: Ligamentum Flavum Resection (Fig. K and L).
Step 8: Inspection (Fig. M).
Step 9: Hemostasis
Step 10: Closure (Fig. P).
## Demographics and Results

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<th>Sex</th>
<th>Age</th>
<th>Surgical Time (min)</th>
<th>#Levels Treated</th>
<th>Surgical Time per Level (min)</th>
<th>EBL (mL)</th>
<th>Follow-Up (months)</th>
<th>Complication(s)</th>
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Results

Patient Reported Outcomes

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*Difference reached statistical significance, p<0.001*
Discussion

• We present a detailed ten-step technique for the safe and efficient performance of a minimally invasive cervical laminectomy via UABD for the treatment of CSM.

• In our experience, this procedure is safe and yielded significant postoperative symptom relief.

• Our results are similar to those of the few studies published in the literature examining minimally invasive cervical laminectomy.4-9

• The presented detailed ten-step technique provides a reference guide for surgeons wishing to undertake this approach for the treatment of CSM.
References