

Lumbar Plexus Injury After MIS Lateral Transpsoas Interbody Fusion at L4/5 Level: A Review of 62 Consecutive Cases

Jacob Januszewski DO; Shashank V Gandhi MD; Konrad Bach MD; Andrew C. Vivas MD; Chun Po Yen; Jason Michael Paluzzi; Juan S. Uribe MD
[Institution]

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Introduction

The MIS lateral transpsoas approach (MIS-LIF) has become an increasingly popular means of fusion. Its most frequent complication is lumbar plexus injury. Reported complication rates at the L4-5 disc space vary widely in the literature, bringing into question the safety of MIS-LIF for the L4-5 region. Single level complication rates have been rarely reported alone. We report our experience with lumbar plexus injuries, safety, and efficacy of MIS-LIF at the L4-5 disc space.

Methods

A retrospective analysis of our MIS-LIF database was performed from 2011-2016. All patients with a standalone or supplemental lateral plate or posterior percutaneous pedicle screw MIS-LIF at the L4/5 level were included. Patients with multilevel fusions were excluded. We analyzed lumbar plexus injuries and the date of resolution.

Results

Total of 62 patients of 303 met inclusion criteria. Twelve (19%) had an immediate postoperative complication, and almost all were transient and sensory. One had a delayed contralateral sensory and motor (2/5) femoral nerve injury from psoas hematoma. All patient complications except for 2 have completely resolved by the 12-month follow-up resulting in long-term complication rate of 3.2%. The mean LOS and follow-up were 2.1 days and 15 months, respectively. The average ODI improved from 60 to 37 at the last follow-up. The VAS score improved from 7 to 3 at the last follow-up. There were no reoperations secondary to hardware failure or symptomatic pseudarthrosis.

Conclusions

MIS-transpsoas LIF at the L4-L5 disc space is a safe, reproducible, and effective technique with low rate of lumbar plexus injury. When careful surgical technique is applied, patient outcomes may be better than in multilevel MIS-LIF operations above the L4-L5. MIS-LIF at L4/5 also offers lower intraoperative and wound complications than other techniques for this level. Most complications that do occur are transient neuropraxia or mild axonotmesis, which resolve within 6

Learning Objectives

- (1) Understand the surgical considerations unique to the L4-5 transpsoas approach due to the lumbar plexus anatomy.
- (2) Identify the complications possible due to a L4-5 transpsoas MIS interbody fusion.
- (3) Identify advantages of the transpsoas approach to L4-5 compared to anterior or posterior approaches for interbody fusions.

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