

Percutaneous Transforaminal Lumbar Interbody fusion with an expandable cage through Kambin's

Triangle: Initial results and feasibility

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Introduction

Minimally-invasive transforaminal lumbar interbody fusion (MIS-TLIF) is a common procedure in lumbar spine fusion. Typically, a medial facetectomy is performed, allowing access to the intervertebral disc, and allowing the insertion of a cage. Percutaneous access to the disc through Kambin's triangle obviates the need for a medial facetectomy and is thus hypothesized to decrease patient morbidity and pain. Most authors have described the use of static cages through this approach or the use of a porous allograft-containment mesh. In this paper, we describe the clinical outcomes and feasibility of percutaneous TLIF with an expandable cage through Kambin's triangle.

Methods

A retrospective review of patients undergoing percutaneous TLIF via Kambin's triangle with an expandable cage was performed. Demographic information, pre- and postoperative radiographic factors, perioperative data, and complications were recorded.

Results

Five total patients (1 male) were included in this study. Average age was 62.8+/-9.8 years, and average BMI was 31.6+/-7.1 kg/m². Average preoperative spondylolisthesis, anterior and posterior disc height, canal area and diameter, and left and right neuroforaminal area was 7.4+/-5.2mm, 8.4+/-1.6mm, 7.3+/-0.9mm, 1.3+/-0.47cm², 11.5+/-6.0mm, 2.0+/-0.5mm, 0.8+/-0.2mm, respectively. On average, there was 4.1+/-2.7mm, 5.1+/-2.8mm, 1.9+/-1.6mm correction of spondylolisthesis, anterior and posterior disc height, respectively. Average length of stay and blood loss was 1.8 days and 33cc, respectively. All patients experienced significant reduction in back and leg pain, and no patients experienced 30-day readmission.

Conclusions

Initial experiences have shown that percutaneous TLIF with an expandable cage through Kambin's triangle is a safe and clinically efficacious procedure for reducing lumbar spondylolisthesis and radiculopathy.

Learning Objectives

By the conclusion of this session participants should be able to 1) Describe the importance of percutaneous TLIF, 2) Discuss, in small groups, the surgical approach to Kambin's triangle, and 3) Identify percutaneous TLIF with an expandable cage as an effective treatment for lower extremity radiculopathy and spondylolisthesis.

References