



Placement of Lordotic Cages Maintains Segmental and Lumbar Lordosis in Posterior Lumbar Interbody Fusions

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Introduction

Use of conventional interbody cages in posterior lumbar interbody fusions (PLIF) has potentially contributed to loss of both segmental and lumbar lordosis. Maintenance of lordosis has been shown to have a positive impact on patient outcomes. Lordotic cages have recently become available for clinical but their efficacy in maintaining lordosis has not been demonstrated in clinical studies.

Methods

This is a retrospective study of patients who underwent 1 or 2 level PLIF without a history of prior fusion, including disc collapse, recurrent disc herniation, spondylolisthesis, and scoliosis using 12- or 18-degree lordotic interbody cages by the senior author (CB) between January, 2013 and July, 2014. Patients who had preoperative, postoperative, 3-month, and 1-year follow-up imaging were included in the study. Measurements of segmental lordosis at all time points and lumbar lordosis at the first and last time points were taken independently by two authors and discrepancies less than 5 degrees were then averaged together while those greater than 5 degrees were re-measured.

Results

A total of 87 levels were identified in 70 patients. Eight patients were lost to follow-up with the exclusion of 9 levels from analysis. Of the 78 levels, 44 were 1-level fusions, and 34 levels were assessed in 17 patients with 2-level fusions. Five patients required additional procedures, including three patients who developed adjacent level disease. Changes in segmental lordosis between preoperative and 1-year upright imaging ranged from -12.5 to +19.5 degrees (mean +0.7 degrees). Changes in lumbar lordosis ranged from -9.5 to +25.5 degrees (mean +2.6 degrees).

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Understand the importance of maintaining lordosis in fusion 2) Describe the potential role of lordotic interbody devices in maintaining or improving lordosis in lumbar fusion

Conclusions

In this retrospective study, the use of 12- and 18-degree lordotic cages in 1- and 2-level PLIF for degenerative conditions appears to maintain both segmental and lumbar lordosis at 1-year follow-up in a select subset. Segmental lordosis observed at one-year was consistent with immediate postop findings, suggesting that in all cases there was stability of the constructs. This study demonstrates that lordotic cages may help maintain lordosis, but do not assure an increase in segmental or lumbar lordosis. Further analysis of subgroups may help identify other factors leading to consistent increase in lordosis.

References