

Impact of Expandable Interbody Cage Devices on Cervical Sagittal Alignment After Corpectomy Brandon W Smith MD MSCR; Jacob R. Joseph MD; Michael Kirsch; Xilin Liu; Yamaan Saadeh MD; Paul Park MD

Introduction

Cervical corpectomy is a well-established option for the treatment of symptomatic cervical spondylosis. Relatively recently, the expandable interbody cage has been popularized in anterior reconstruction after corpectomy. However, the impact of expandable cage technology on sagittal alignment is unknown.

Methods

Patients undergoing cervical corpectomy utilizing an expandable interbody cage at a single institution were identified. Patient data including indication for procedure, ASA, BMI, smoking status, preoperative osteoporosis, corpectomy levels, additional procedures, and radiographic imaging were extracted. Preoperative and postoperative x-rays of the cervical spine were evaluated for segmental and overall cervical lordosis, as well as the C2-C7 spinal vertebral axis.

Results

A series of 41 patients undergoing cervical corpectomy with expandable interbody cage placement were identified. 19(46%) were male and 22(54%) were female. The average age was 55.4yrs(19yrs-85yrs) at the time of the operation. 27(66%) of the cases were anterior approach only, and 14(34%) of the patients had a circumferential fusion. 38(93%) of the cases were single level and 3(7%) were 2-level corpectomies. Of the 41 eligible patients, 30(73%) had preoperative and postoperative lateral cervical spine radiographs. All 41(100%) patients had postoperative lateral radiographs of the cervical spine. The mean overall cervical lordosis preoperatively was 0.92 degrees. On immediate post -operative imaging there was a significant increase to 8.6 degrees (P<0.0001). Similarly, the mean segmental lordosis significantly increased after surgery from 0.7 degrees to 6.0 degrees (P<0.0001). There was a small, but statistically significant decrease in CSVA decreased from 3.79cm to 3.12cm (P=0.004). Mean radiographic follow-up was 7.3mo(2.1mo-17.5mo). At last radiographic follow-up the mean overall lordosis was 6.5 degrees(P=0.008) and the segmental lordosis was 4.4 degrees(P=0.003), both final measurements continued to significantly differ from the pre-operative measurements.

Conclusions

Segmental and overall cervical lordosis are significantly increased with use of an expandable cage.

Learning Objectives

Cervical interbody cage is an option for anterior reconstruction after corpectomy

Cervical interbody constructs that utilize an expandable cage, can significantly improve preoperative lordosis

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