

Impact of Anterior Plating vs. Stand-Alone Cage on Rate of Fusion, Subsidence, and Adjacent Segment Disease in Single-Level Cervical Corpectomy for Spondylosis

Murray Echt MD; Michael Longo BA; Rafael De la Garza Ramos MD; Yaroslav Jacob Gelfand MD; Jonathan P Nakhla MD; Merritt Drew Kinon MD; Reza Yassari MD

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Introduction

The impact of anterior plating vs. stand-alone grafts in anterior cervical discectomy and fusion has been extensively studied, however the use of a plate in anterior cervical corpectomy and fusion has not been well described.

Methods

A chart review was performed for the dates of July, 2008 until June, 2018. Inclusion criteria was single-level corpectomy performed for spondylosis without posterior instrumentation. Subsidence was calculated by comparing the postoperative lateral x-ray films to those obtained during follow-up visits, an considered present if there was at least 3mm of settling into the end-plates. Rate of fusion, subsidence, and adjacent segment disease was compared using Pearson's Chi2 test (p-value <0.05 was considered significant).

Results

A total of 65 patients were identified with 38 constructs including anterior plating and 27 as stand-alone cages. Average age was 61.1 years-old, 55% were male, and average follow-up was 12.7 years. Patient demographics including medical comorbidities and type of graft used were similar. Overall fusion rate was 89.2% with no difference in fusion between plate and stand-alone, 88.9% vs. 89.5% respectively (p=0.94). The overall subsidence rate was 38.5% with a non-significant increase in subsidence for stand-alone cages, 40.7% vs. 36.8% (p=0.75). Adjacent segment disease had a non-significant increase with the use of anterior plating, 13.2% vs. 3.7% (p=0.19). Despite relatively high rate of subsidence there was only need for one revision surgery due to the development of osteomyelitis and epidural abscess in setting of endocarditis. There were only two complications including one C5 palsy that improved on follow-up and one return to the OR for evacuation of a neck hematoma.

Conclusions

In this study, we affirmed the null hypothesis that there is no significant radiographic or clinical difference in using an anterior plate vs. a stand-alone cage. A stand-

Learning Objectives

The aim of this study is to report the rate of fusion, subsidence, and adjacent segment disease in single level cervical corpectomy with or without the use of anterior plating using a single-institution retrospective review.

References