Anterior Multilevel Cervical Disc Fusion: Is it Safe to Perform Instrumentation with “Stand Alone” Cages for Cervical Spondylosis?

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Introduction

Anterior cervical disc fusion (ACDF) surgery is one of the most frequent procedures done in spine surgery; when a one level procedure is done fusion rates achieve 92 to 100%; nonetheless, when more than one level are approached, fusion rates decrease to 60 to 70%. Instrumentation with cervical plate seeks to increase cervical fusion rates in multilevel anterior cervical spine surgery. New intersomatic devices with supplemental fixation to vertebral bodies have been developed to increase fusion rates without the need of additional instrumentation, so called “stand alone” cages, with reduction of additional surgical risks of esophageal complications and decreasing surgical time. The aim of this study is to determinate the effectiveness and safety of “stand alone” cages in up to 3 levels.

Methods

We analyzed the surgical results of 35 patients surgically treated with “stand alone” ACDF technique for 1 to 3 levels, in a two years period by one neurosurgeon at ABC Medical Center in Mexico City. Preoperative visual analogue scale was evaluated in all patients with statistically significant improvement in cervical or radicular pain. Fusion rates were analyzed with cervical x rays and tomographic postoperative controls.

Results

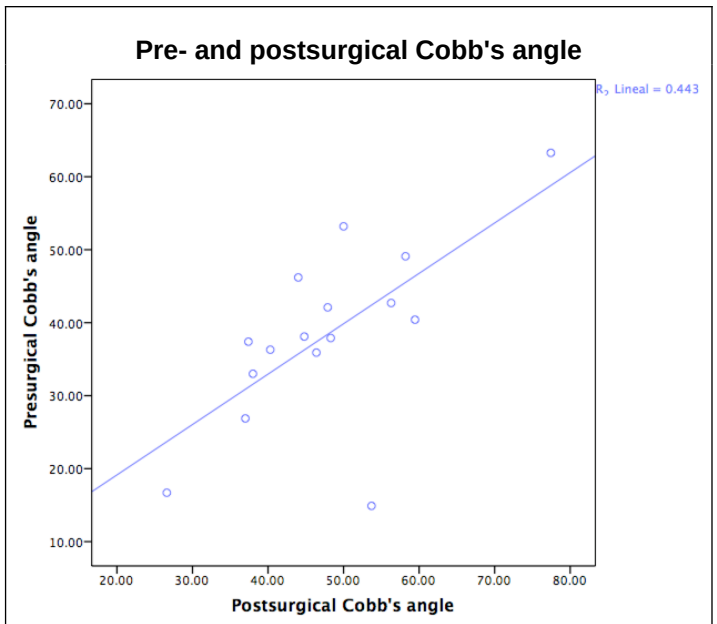
Mean age was 58 years old, with female predominance (2:1), and mean follow-up time of 4.4 months. 71% of patients had central stenosis, and 80% also had foraminal stenosis. 68% of patients had clinical myelopathy Nurick Grade 2 or more, 80% of patients achieved fusion on follow-up. 17 patients were operated at one level, 18 patients were operated at 2 or more. Change in Postsurgical Cobb's angle was significant in all patients($p<0.01$). 4 patients(11%) had complications.

Conclusions

No statistical difference was found if one, two or three levels were treated. We concluded that “stand alone” cervical cage for uni- or multilevel ACDF surgery is an effective and secure procedure for cervical multilevel spondylosis.

Learning Objectives

By the conclusion of this session, participants should be able to: 1)identify the effectiveness and safety of "stand alone" cage in up to 3 level cervical instrumentation, 2)describe the importance of reducing operative time and invasiveness of cervical spine procedures.



Presurgical Cobb's angle correlates with the positive change in postsurgical Cobb's angle, which is present in all "stand alone" instrumentations, including one, two and three level. ($p<0.01$)