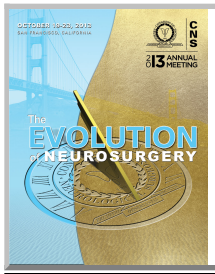

Retrospective Review of a Spinous Process Fixation Device as an Adjunct in Spinal Surgery: Radiographic and Clinical Results

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Introduction

Spinous process fixation devices have gained increasing popularity fixation of the lumbar spine. Some of the advantages to using spineous process fixation devises over pedicle screws are the fact that their placement is much less technically demanding, and therefore their placement invovles less risk of nerve root injury, less radiation to the surgeon and patient, faster operative time, less blood loss, and less tissue dissection. Interspinous fusion devises such as the Aspen fixate to adjacent level spinous processes, immobilizing the lumbar spine in the saggital plane most effectively and supplement fusion when interspinous, facet, or transverse processes are fused. Patient outcomes have not been extensively reported with long term clinical follow-up when such devices are used alone or in combination with other interbody techniques.

Methods

We reviewed a single surgeon's experience using the Aspen spinous process fixation device in combination with anterior lumbar interbody fusion, posterior lumbar interbody fusion, extreme lateral interbody fusion, and transforaminal lateral interbody fusion. Patient outcomes were reviewed using pre- and post-operative scores from the Oswestry Disability Index (ODI) and the Short Form -36 Questionnaire (SF-36).

Results

Eighty-nine patients underwent placement of a spinous process fixation device. The mean age was 61.04. The population consisted of 28 males and 61 females. The mean follow-up for patients with pre and postoperative scores for SF-36 was 21.24 months, and the mean follow-up for the ODI scores was 25.72 months. Sixteen percent of the population had an Aspen spinous process fixation device alone placed, 27% had an ALIF (Anterior Lumbar Interbody Fusion) in addition to the Aspen, 30% underwnet XLIF's (extreme lateral interbody fusion), 15% PLIF (posterior lumbar interbody fusions), and 11% TLIF (transforaminal lumbar interbody fusions). Forty-seven patients had pre- and post ODI scores. There was a statistically significant improvement between pre- and post-ODI scores ($p>0.0001$) and SF-36 physical component scores ($p>0.0001$). There was a significant improvement in ODI for females vs. males ($p=0.019$). No difference was noted between males and females in initial ODI ($p=0.236$), post-ODI ($p=0.232$), SF-36 Physical Component Score ($p=0.202$), or SF-36 Mental Health Component Score ($p=0.847$).

Conclusions

Spinous process fixation devices can be used to stabilize and supplement fusion of the lumbar spine. Surgical outcomes are excellent with significant clincal improvements expected. The role of spinous process fixation devices for use in fusion of the lumbar spine continues to evolve.

Learning Objectives

By the conclusion of this session participants should be able to 1) identify the indications for the use of spinous process fixation devices, 2) become familiar with expected clinical outcomes after spinous process fixation devices, and 3) identify patients who have undergone other procedures that may benefit from supplemental fixation using a spinous process fixation device.

References

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