

A RETROSPECTIVE COMPARISON OF CAGE-ALONE VERSUS CAGE-PLATE CONSTRUCTS USED IN ANTERIOR CERVICAL DISCECTOMY AND FUSION

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OBJECTIVE

To assess outcomes of anterior cervical discectomy and fusion (ACDF) for management of myelopathy, specifically comparing cage-alone (CA) and cage plate (CP) groups through recorded data and published literature.

INTRODUCTION

Anterior cervical discectomy and fusion (ACDF) is a well-established spinal operation for cervical disc degeneration disease with neurological compromise. The procedure involves an anterior approach to the cervical spine with discectomy to relieve the pressure on the impinged spinal cord to slow disease progression. The prosthetic cage replaces the disc hence occupying the space and aiding in the fusion of the intervertebral level. The cage can be inserted stand-alone or along with an anterior plate that provides additional stability[1]. The literature demonstrates that the cage-alone (CA) is given preference over the cage-plate (CP) technique due to better clinical outcomes, reduced operation time and resultant morbidity [2]. This retrospective case-controlled study compared CA versus CP fixation used in single and multilevel anterior cervical discectomy and fusion for myelopathy in a tertiary centre in Wales.

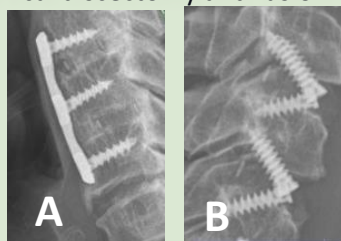


Figure 1:
A- Cage-plate construct
B- Cage-alone construct.

METHOD

A retrospective clinico-radiological analysis was undertaken, following adults (>18 yrs) with myelopathy who underwent ACDF over seven years. All those with radiological follow up less than six months were excluded. Eighty-six patients formed the study cohort; 28 [33%] underwent ACDF with CA and 58 [67%] with CP.

The use of X-rays helped to determine fusion, implant failure, adjacent level disease and improvement in the cervical sagittal vertical axis (cSVA) and cervical lordosis angle (cLA).

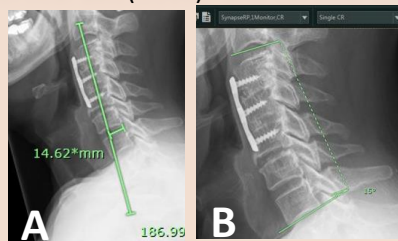


Figure 2:
A- Demonstrates cSVA calculation.
B- Demonstrates cLA calculation.

The clinic letters provided information regarding follow up times, patient demographics (age, smoking status, and comorbidities), the number of levels operated on, complications and details about subsequent operations. Once collected, all data were analysed in SPSS using the appropriate tests to determine any statistically significant difference between the two groups.

Results

The patient demographics were similar in both groups, and fusion was observed in all individuals. There was no statistical difference between the two constructs when assessing subsidence, clinical complication (dysphagia, dysphonia, infection), radiological parameters and reoperations. However, a greater percentage [43% v 61%] of patients improved their cervical lordosis angle with CP treatment. Furthermore, the study yielded that surgery to upper cervical levels results in a higher incidence of dysphagia [65% v 35%]. Finally, bony growth across the cage was observed on X-ray in 12[43%] patients, a unique finding not mentioned in the literature previously.

CONCLUSION

Our study demonstrates **no overall difference** between the two groups in the measured outcomes or complications. Therefore, it suggests that it is vital to carefully consider individual patient factors and pathology when deciding what implant construct to select.

RESULTS

Demographics	NOT SIGNIFICANT
Fusion	100%
Subsidence	NOT SIGNIFICANT
Implant Failure	0%
Adjacent level disease (ALD)	NOT SIGNIFICANT
Dysphagia, Dysphonia, Infection	NOT SIGNIFICANT
cLA	NOT SIGNIFICANT
cSVA	NOT SIGNIFICANT
Reoperation:	ALD- NOT SIGNIFICANT Revision- NOT SIGNIFICANT

It's a spine

References:

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- Fountas K, Kapsalaki E, Nikolakakos L, Smisson H, Johnston K, Grigorian A et al. Anterior Cervical Discectomy and Fusion Associated Complications. Spine. 2007;32(21):2310-2317. doi: 10.1097/brs.0b013e318154c57e

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