

Adjacent Level Ossification Development In Single Level Standalone Anterior Cervical Discectomy And Fusion Versus Anterior Cervical Discectomy And Fusion With Cage

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Purpose

Adjacent level ossification development (ALOD) is a distinct form of adjacent segmental degeneration and disease that has been recognized to occur after anterior cervical discectomy and fusion (ACDF), resulting in various clinical outcomes.

The aim of this study is to compare the rates of ALOD in patient with and without the use of an anterior plate in patients with ACDF.

Methods

All available data collected to date for 260 patients that have undergone ACDF with and without the use of an anterior plate have been collected and reviewed. This includes review of the radiological imaging for ALOD at time of surgery and upon serial follow up imaging. Additional variables also studies include age, gender, single or multiple levels performed.

Results

ALOD was observed thus far in 14.1% of patients. Uni-variate analysis of ALOD outcomes observed in plate versus no plate was 27.4% compared to 1.9% with $P < 0.001$. Multivariate analysis adjusting for age, gender and single or multiple levels observed significant decreased in ALOD without the use of anterior plate (OR 18; 95% CI, 3.95-81.9; $P < 0.001$)

Conclusion

This study aims to determine whether the use of anterior plate in ACDF has an associated with ALOD. From the available data collated thus far, the findings to suggest a strong associated of the use of plate in ALOD compared to standalone cage. Further data collection and review is required to determine other factors that may be involved and also clinical outcomes of ALOD.