# AB090. SOH24AB_047. The efficacy of anchored stand-alone spacers in comparison to conventional cage and plate in anterior cervical discectomy and fusion surgery: a meta-analysis of randomised controlled trials for clinical and radiological outcomes

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**Background:** An anterior cervical discectomy and fusion (ACDF) is commonly performed with cage and plate constructs to provide stability to the diseased or injured cervical segment. Anchored stand-alone spacers represent a novel form of instrumentation to conventional cage and plate constructs. However, little is known regarding their collective comparative evidence versus cages and plates. The objective of this study is to elucidate if anchored spacers have improved operative characteristics and postoperative outcomes in ACDF cohorts when compared to conventional instrumentation.

**Methods:** A systematic review and meta-analysis was conducted of PubMed/Medline, Embase, and Google Scholar databases per the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines. Studies of interest included conventional (cage and plate) instrumentation versus anchored stand-alone spacers for patients undergoing ACDF. Pre- and post-operative clinical and radiological outcomes were collated and compared for significance.

**Results:** In total, 10 randomised controlled trials were included with 779 patients. Mean age of the entire cohort was 50.1 years (range: 30–78 years); 62% (483/779) of the cohort were male, while 38% (296/779) were female. Overall, 384 patients underwent ACDF with stand-alone cage, while 395 had ACDF with conventional cage and plate. Stand-alone spacers significantly outperformed conventional instrumentation in terms of estimated blood loss (P<0.01), total postoperative complications (P<0.01), dysphagia rates (P=0.04), and adjacent segment disease (P=0.04). Non-inferiority was evident in both patient-reported outcome measures and radiological outcomes.

**Conclusions:** The results of this meta-analysis highlight the efficacy of stand-alone spacers for the management of primarily cervical spondylitic disease for both single-level and multi-level pathology when compared to conventional instrumentation in ACDF surgery.

**Keywords:** Anterior cervical discectomy and fusion (ACDF); complications; meta-analysis; spine surgery

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## Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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