

A systematic review and meta-analysis investigating the safety and efficacy of expandable cages after anterior cervical corpectomy for treatment of cervical myelopathy with a focus on stand-alone cages

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Background: Cervical myelopathy is a progressive degenerative disorder usually caused by cervical spondylosis and requires surgical intervention. Expandable cages can be adjusted to the corpectomy size and provide maintained cervical lordosis that's why they have gained acceptance for reconstruction after anterior cervical corpectomy.

Research question: What are the efficacy, postoperative outcomes, and potential complications of expandable cages after anterior cervical corpectomy?

Study Design: Systematic review and Meta-analysis.

Methods: Medline, Scopus, Web of Science, Cochrane, and Embase were explicitly searched using a predefined search term up to May 22, 2023. We used "OpenMetaAnalyst" and R software to perform the meta-analysis and subgrouping of the efficacy outcomes and complications.

Results: We included thirty studies in this manuscript of which 22 were eligible for meta-analysis. Cobb angle, Nurick's score, and modified Japanese Orthopedic Association (mJOA) score showed improvement after pooling of data. Across seven studies expandable cages achieved a 0.94 stability rate while stand-alone cages achieved only a 0.83 stability rate. 16% of the patients have suffered postoperative dysphagia and 9% had hardware-related issues.

Discussion: Expandable cages offer significant improvement of quality of life and good clinical outcomes in the name of high fusion, stability rates, and neurological recovery, but in particular stand-alone cages have more complication rate as for dysphagia, subsidence, and hardware failure compared to cages with anterior plating.