In recent years, increasing numbers of cervical disease cases have been treated with zero-profile devices in anterior cervical discectomy and fusion (ACDF). Its short-term efficacy has been widely recognized; however, the evidence for long-term efficacy remains insufficient. The present study assessed the mid-term and long-term efficacy of zero-profile compared with cage and plate structures in ACDF by analyzing the clinical and radiological outcomes after treatment of cervical diseases with a minimum 2 years of follow-up.

Methods: We conducted a comprehensive database or platform search in PubMed, ISI Web of Science, Embase, and Cochrane Central Register of Controlled Trials using the PRISMA guidelines and identified 10 reports, with 772 patients (375 in the zero-profile group and 397 in the cage and plate group) that met our inclusion criteria. All patients had been followed up for ≥2 years. Two of us used a standardized data collection form to extract relevant data and check its accuracy independently.

Results: The zero-profile group had statistically significant ($P < 0.05$) less intraoperative blood loss, improved postoperative C2-C7 Cobb angle, and decreased incidence of postoperative dysphagia and adjacent segment degeneration compared with the cage and plate group. The operative time, postoperative Japanese Orthopaedic Association score, Neck Disability Index score, and bone fusion rate showed no statistically significant differences between the 2 groups.

Conclusions: The zero-profile and cage and plate structures achieved comparable mid-term and long-term clinical and radiological outcomes in ACDF. In addition, the zero-profile group showed reduced intraoperative blood loss, improved postoperative C2-C7 Cobb angle, and decreased incidence of dysphagia and adjacent segment degeneration complications [1].

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