Cervical arthroplasty (CDA) with Discover prosthesis or anterior cervical discectomy and fusion (ACDF) with Zero P cervical cage has been widely used in the treatment of cervical spondylotic myelopathy (CSM). However, little is known about the comparison of the 2 zero-profile implants in the treatment of single-level CSM. The aim was to compare the clinical outcomes and radiographic parameters of CDA with Discover prosthesis and ACDF with Zero-P cage for the treatment of single-level CSM.

A total of 128 consecutive patients who underwent 1-level CDA with Discover prosthesis or ACDF with Zero-P cage for single-level CSM between September 2009 and December 2012 were included in this study. Clinical outcomes were evaluated using the Japanese Orthopaedic Association (JOA) score and Neck Disability Index (NDI). For radiographic assessment, the overall sagittal alignment (OSA), functional spinal unit (FSU) angle, and range of motion (ROM) at the index and adjacent levels were measured before and after surgery. Additionally, the complications were also recorded.

Both treatments significantly improved all clinical parameters ($P < 0.05$), without statistically relevant differences between the 2 groups. The OSA and FSU angle increased significantly in both groups ($P <0.05$). Compared with Zero-P group, ROMs at the index levels were well maintained in the Discover group ($P < 0.05$). However, there were no statistical differences in the ROMs of adjacent levels between the 2 groups ($P > 0.05$). Besides, no significant differences existed in dysphagia, subsidence, or adjacent disc degeneration between the 2 groups ($P > 0.05$). However, significant differences occurred in prosthesis migration in CDA group.

The results of this study showed that clinical outcomes and radiographic parameters were satisfactory and comparable with the 2 techniques. However, more attention to prosthesis migration of artificial cervical disc should be paid in the postoperative early-term follow-up [1)].

1)
Shi S, Zheng S, Li XF, Yang LL, Liu ZD, Yuan W. Comparison of 2 Zero-Profile Implants in the Treatment of Single-Level Cervical Spondylotic Myelopathy: A Preliminary Clinical Study of Cervical Disc Arthroplasty versus Fusion. PLoS One. 2016 Jul 21;11(7):e0159761. doi: 10.1371/journal.pone.0159761. PubMed PMID: 27441736; PubMed Central PMCID: PMC4956276.