

# **Comparison of patient-reported postoperative dysphagia in patients undergoing one-level versus two-level anterior cervical discectomy and fusion with the Zero-P Implant System**

## **Objective**

The purpose of this study was to (1) investigate whether the incidence of postoperative dysphagia differs between one-level and two-level ACDF with the Zero-P and (2) examine patient characteristics that may be associated with the occurrence of dysphagia after ACDF with the Zero-P.

## **Methods**

A retrospective analysis of 208 patients who underwent ACDF with the Zero-P Implant System was performed from January 2013 to December 2018. The patients were divided into two groups based on the number of operated levels (one-level group, N=86; two-level group, N=122). Dysphagia was assessed based on the Bazaz grading system. The incidence of dysphagia and the severity of dysphagia at each follow-up were compared between the two groups. The patients were divided into two groups (nondysphagia group, N=160; dysphagia group, N=48), and covariates were obtained for multivariate analysis, including demographic parameters, surgical parameters, and radiographic parameters.

## **Results**

The results showed that the incidence and severity of postoperative dysphagia in the two-level group were significantly greater at 1 week, 1 month and 3 months postoperatively. The results of ordinal logistic regression showed that older age, two-level surgery, greater prevertebral soft tissue swelling (PSTS) and the difference between the postoperative and preoperative C2-7 angle (dC2-7A) were significantly associated with a higher incidence of dysphagia after ACDF with the Zero-P.

## **Conclusion**

Two-level ACDF with the Zero-P can result in a significantly greater incidence and severity of transient postoperative dysphagia. Older age, greater PSTS and the dC2-7A were also associated with postoperative dysphagia after ACDF with the Zero-P.

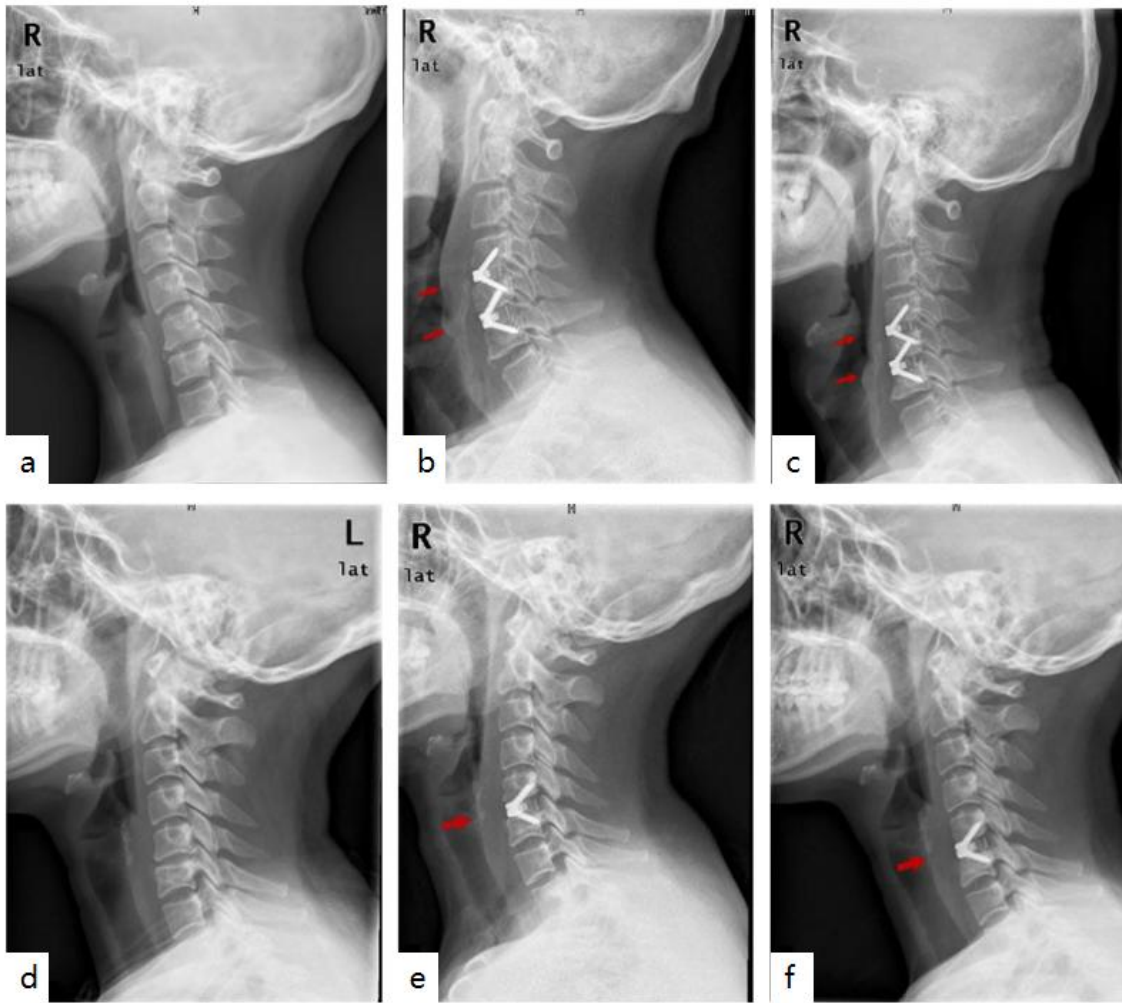


Fig. 1 The preoperative (a), 1-week postoperative (b), and 3-month postoperative (c) lateral X-rays of a 58-year-old male patient diagnosed with cervical spondylotic myelopathy who underwent C4/5 and 5/6 ACDF with Zero-P. The  $dC2-7A$  and PSTS were  $4.35^\circ$  and 6.4 mm, respectively. After surgery, the patient experienced severe dysphagia at 1 week and 1 month after surgery. The patient reported no dysphagia at 3 months. The X-rays showed obvious differences in the PSTT and C2–7A among the follow-ups (red arrows). The preoperative (d), 1-week postoperative (e), and 1-month postoperative (f) lateral X-rays of a 40-year-old female patient diagnosed with cervical spondylotic myelopathy who underwent C5/6 ACDF with Zero-P. The  $dO-C2A$  and PSTS were  $8.62^\circ$  and 0.6 mm, respectively. The Bazaz grading system showed mild dysphagia at 1 week and no dysphagia at 1 month after surgery. The X-rays showed obvious differences in the C2–7A among the follow-ups (red arrows)