

Abstract #1163.docx

Is K-line useful to predict prognosis of laminoplasty for cervical spondylotic myelopathy?

Introduction

K-line is well distributed as a useful tool to predict the outcome of laminoplasty (LP) for the ossification of the posterior longitudinal ligament (OPLL) in the cervical spine, however, usefulness of K-line for CSM is uncertain. The purpose of this study was to investigate whether K-line is useful to predict prognosis of LP for CSM by comparing between K-line (+) and K-line(-).

Materials and Methods

In this study, K-line was defined as the line passing through the midpoints of the canal at C2 and C7 on T2-weighted sagittal MRI as the disc bulging might contribute to the pathology of CSM. Forty-four CSM patients who underwent LP were enrolled. The cases classified as K-line (-) were 12, and those with K-line (+) 42. Follow-up period was a mean of 5 years. The recovery rate of the JOA score at follow-up, C2-7 angle were compared between K-line (-) and K-line (+).

Results

Recovery rate of the JOA score of K-line (-) was significantly lower (24.3%) compared to that of K-line (+) (52%). C2-7 angle of K-line (+) was 19° at preoperation, and was maintained (20.3°) at final follow-up. On the other hand, C2-7 angle of K-line (-) deteriorated from -10.7° at preoperation to -17.2° at the follow-up. In K-line (-) group, 5 cases exhibited resorption of the protruded disc around the beak of kyphosis at the follow-up, with relatively good recovery rate of the JOA score (33.6%).

Discussion

This study indicated that K-line is useful to predict the prognosis of LP for CSM. That is, outcome of LP for CSM with K-line (-) is worse than that with K-line (+) because of insufficient posterior shift of the spinal cord and progression of cervical kyphosis during the follow-up in K-line (-) group. We encountered several cases in whom the resorption of the protruded disc at the beak of kyphosis occurred during follow-up. Although these cases showed somewhat good outcome, it was not sufficient. Therefore, anterior decompression and fusion or posterior correction surgery combined with LP should be considered as the treatment for CSM with K-line (-).