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Axial Neck Pain after Cervical Laminoplasty

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Background: It has been demonstrate that cervical laminoplasty is effective and safe for multiple cervical spondylotic myelopathy and ossification of posterior longitudinal ligament. However recent reporters suggest that axial neck pain after cervical laminoplasty is frequent. The aim of the present study is to determine clinical significance of C7 spinous process on axial neck pain after cervical laminoplasty.

Method: A total of 31 consecutive patients who underwent cervical laminoplasty between March 2002 and December 2008 were reviewed. We evaluated axial neck pain and lordotic angle between the C7 spinous process preserving (group 1) and sacrificing group (group 2).

Result: Early axial pain graded severe and moderate was observed in 56.2% in the group 1 and 86.6% in the group 2. Late axial pain graded severe and moderate was observed in 12.5% in the group 1 and 73.3% in the group 2. Early axial pain was not significantly rarer, but had the rarer tendency in the group 1 than in the group 2 ($P=0.073$). Late axial pain was significantly rarer in the group 1 than in the group 2 ($P=0.002$).

Discussion: The most main problem of cervical laminoplasty is axial neck pain. The possible causes of axial neck pain after cervical laminoplasty were ischemia of the shoulder muscles, atrophy of the nuchal muscles, and delayed union in the facet joints. However there were no definitive evidences about the importance of C7 anatomically. We should consider the axial neck pain aggravated especially after C7 non-preserving laminoplasty as important. Accoding to our clinical assessment, early axial pain was not significantly rarer, but had the rarer tendency in the group 1 than in the group 2. Late axial pain was significantly rarer in the group 1 than in the group 2. According to our radiologic result, postoperative lordotic angle of cervical spine is closely related with preoperative lordotic angle of cervical spine and there is not significant statistically of the difference of preoperative and postoperative lordotic angle between C7 preserving and non preserving group. This result suggests that C7 preserving laminoplasty to reduce the incidence of axial neck pain can't give the benefit to the preservation of lordotic angle postoperatively.

Conclusion: In summary, the present study demonstrates that C7 spinous process preserving laminoplasty decreases the incidence of axial neck pain after cervical laminoplasty.