

# **Clinical outcome of spinal cord injury in cervical spinal stenosis by minor trauma**

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## **Introduction:**

Degenerative diseases of the cervical spine including cervical OPLL (Ossification of Posterior Longitudinal Ligament) and CSM (Cervical Spondylotic Myelopathy) are the most common causes of the cervical spinal stenosis.

The size of the spinal canal is a factor that contributes to the neurologic deficits associated with cervical OPLL and CSM. We investigate the development of neurologic deterioration after minor trauma and the clinical results of decompressive surgery in cervical spinal stenosis retrospectively.

## **Method:**

We treated 272 cases (135 cervical OPLLs and 137 CSMs) of cervical spinal stenosis for 13 years. There were 96 (35.3%) minor trauma cases to the cervical spine in 272 patients. Of these 96 patients, 27 developed myelopathy, 20 showed deterioration of preexisting myelopathy, and no neurologic change was observed in 49 patients. The neurologic status was assessed by the JOA score. The patients were divided into 2 groups according to the residual cervical spinal canal diameter: group I (<10 mm cervical spinal canal) and group II ( $\geq$ 10 mm cervical spinal canal).

## **Results:**

Neurologic outcome depended on the diameter of the residual spinal canal; 33 of the 38 patients in group I developed neurologic deterioration, whereas that occurred in 12 of the 58 patients in group II ( $P < 0.05$ ). After surgical decompression, 12 patients in group I and 45 patients in group II came out with an improved JOA score of more than 50% ( $P < 0.05$ ).

Conclusion:

Even indirect minor trauma to the neck can cause irreversible changes in the spinal cord if there is marked stenosis of the cervical spinal canal. It may be beneficial to check lateral radiograph of the cervical spine as a screening tool for early detection of cervical spinal stenosis especially in Asian people older than 40 years.