Spinal Cord Injury in Cervical Spinal Stenosis by Minor Trauma
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INTRODUCTION: The most common cause of cervical spinal stenosis were the degenerative diseases of the cervical spine including cervical OPLL and cervical spondylotic myelopathy. The influence of minor trauma to the neck on the neurological outcome in patients with cervical spinal stenosis was evaluated retrospectively.

METHODS: We treated 200 cases (98 cervical OPLLs and 102 cervical spondylotic myelopathies) of cervical spinal stenosis for 5 years. There were 63 (33.5%) minor trauma cases of the cervical spine in 200 patients. Of these 63 patients, 18 developed myelopathy, 13 showed deterioration of pre-existing myelopathy, and no neurological change was observed in 32 patients. Minor trauma included motor vehicle accidents, falling, slipping, being struck by objects and sports injuries. The neurological status was assessed by the Japanese Orthopaedic Association (JOA) score. The patients were divided into two groups according to the residual cervical spinal canal diameter; Group I (less than 10 mm cervical spinal canal) and Group II (equal or more than 10 mm cervical spinal canal).

RESULTS: Neurological outcome depended on the diameter of the residual spinal canal; in the 63 patients mentioned above, 22 out of the 25 patients in Group I experienced neurological deterioration, whereas 14 out of the 38 patients in Group II (P<0.05). After surgical treatment, 8 patients in Group I and 30 patients in Group II came out with an improved JOA score of more than 50% (P<0.05). The recovery rate was 33.7% in patients with trauma, and 65.7% in those without trauma (P<0.05).

CONCLUSION: These results indicate that 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; such patients who are at risk, must be educated. From our experience, it may be beneficial to check lateral X-ray of the cervical spine as a screening tool for early detection of cervical spinal stenosis especially in oriental peoples over age forty.

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