

Based on contemporary theoretical knowledge in this prospective study we outline the relationship between a chosen surgical approach (anterior or posterior approach) as it relates to the localization of spinal cord lesion (anterior or posterior spinal pathways) assessed by the use of evoked potentials (SEP, MEP) and the effect of this approach on the postoperative state of patients with cervical spondylotic myelopathy. Furthermore we evaluate clinical outcome of these patients according to several aspects of their MRI and X-ray findings. The study, from 2006 to 2010, comprised 65 patients with clinical signs of cervical myelopathy. These patients had been indicated for surgery, which subsequently was performed by using either the front (anterior - a) or back (posterior - p) approach. The patients were assessed using Nurick and mJOA scores before surgery, then at 12 months, and finally 24 months after surgery. In addition, they were preoperatively examined with a battery of evoked potentials (EP) - somatosensory evoked potential (SEP) and motor evoked potential (MEP) tests. Based on EP, principal spinal cord disability was determined: A - anterior (maximum changes in MEP), P - posterior - maximum change in SEP). The entire group was, on the basis of EP partitioning and the surgical approach used, divided into four groups: Aa, Ap, Pa, Pp. The results of individual examinations were compared within groups. Objective postoperative improvement mJOA score was found in all four groups. Statistically significant improvement was, however, detected only in the groups of anterior approaches. Overall mJOA improvement was revealed in 65% patients in this study. Influence of preoperative spinal cord transversal area and T2w signal change to clinical outcome were confirmed. As a result of this study, there seems to be no benefit to choosing a surgical approach based on the localization of dominant spinal cord pathology assessed by EP.