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Dynamic compression of cervical spinal cord in symptomatic patients: A study with the help of kinetic MRI**Truc Tam Vu and Si Vo**

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Discrepancies between clinical symptoms and signs of spinal cord compression on static MRI are not uncommon when evaluating cervical spine myelopathy (CSM) patients. However, with the application of kinetic MRI (kMRI), dynamic compression of the cord becomes a new concept to be widely accepted. Symptomatic CSM patients were selected to have static and dynamic MRI of the cervical spine. Space available for cord (SAC) were measured in T2 weighted sagittal plane at each disc level of the lower cervical (from C2-3 to C7-T1), in three different positions: full flexion, neutral and full extension. The difference of the mean SAC in different positions is analyzed by Mann Whitney U test. There were 32 selected patients (20 male and 12 female). The mean age of the group is 42. The most affected levels were C5-6 (100%), C4-5 (75%) and C6-7 (63%). The mean SAC in full flexion, neutral and full extension position were 10.54, 9.38 and 8.28 mm respectively, and they differ to each other with statistical significance ($p < 0.05$). In all cases, the bulging of the disc and the ligamentum flavum was most pronounced in extension position and became attenuated in flexion position. Interestingly, new compression sites revealed in full extension MRI (hidden hypertrophic ligamentum flavum) were noted in 7 cases (21%). Kinetic MRI is useful for evaluating dynamic compression of the spinal cord. Decision making of treatment as well as preventing adjacent segment syndrome should be based on the status of the disc and yellow ligament, not only in static image but also in the permanent dynamic process of the cervical spine.

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