

Role Of Kinematic Magnetic Resonance Imaging For Evaluation Of Cervical Spondylotic Myeloradiculopathy – Diagnostic Accuracy And Surgical Planning

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Purpose:

The dynamic component of disc-associated cervical spondylotic myeloradiculopathy currently is evaluated using Static MRI, which does not assess dynamic changes in flexion and extension of the cervical vertebral column. The objective of the study is to evaluate the feasibility and utility of Kinematic MRI imaging in diagnostic accuracy and surgical planning of evaluation of cervical spondylotic myeloradiculopathy

Methods:

In Prospective study, 30 patients with cervical spondylotic Myeloradiculopathy were evaluated with conventional standard MR cervical spine and kinematic MRI cervical spine with flexion and extension. Morphologic and morphometric assessments were compared between neutral, flexion, and extension images. Muhle classification was used to assess cervical canal stenosis.

Results:

Age ; 42-82 (mean 65), 25 male and 5 female.

The cervical cord length was significantly longer in flexion and significantly shorter in extension in all cervical cord sagittal lines. The cervical canal length pattern was also the same as the cervical cord. Flexion was associated with improvement or resolution of spinal cord compression in 90% patients, whereas extension caused worsening of compressions in all patients. Extension identified new compressive Lesions (Identification of new T2 hypersensitivities).

Conclusions:

Our results suggest that Kinematic MRI is feasible and provides additional information in diagnostic accuracy and surgical planning beyond what is observed with neutral imaging, primarily when using extension and flexion views.