Cervical foraminal stenosis

- Determination of the Most Suitable Cut-Off Point of the Cervical Foraminal Cross-Sectional Area at the C5/6 Level to Predict Cervical Foraminal Bony Stenosis
- Positioning and clinical application of the inflection point of the uncinate process in anterior cervical discectomy and fusion (ACDF): a retrospective study
- C5 Nerve Palsy After Posterior Instrumentation and Decompression in Cervical Spine Surgery: A Review of the Literature
- Added value of 3D fast-field-echo (FRACTURE) sequences for cervical spondylosis diagnosis: a prospective multi-reader non-inferiority study
- Radiographical changes and clinical prognosis after cervical laminectomy with posterior instrumented fusion for degenerative cervical myelopathy
- The resisted levator scapulae test: a clinical test for C4 radiculopathy
- Targeted anterior expansion of the cervical facet joints achieves indirect foraminal decompression and reduces spondylolisthesis via a posterior approach: a cadaveric study
- Factfinders for patient safety: Epidural steroid injections in the setting of severe cervical central and neuroforaminal stenosis

Cervical neural foraminal stenosis is a common and debilitating condition affecting people 40-60 years old. Although it is established that MRI is the best method of scanning the neural foramen, the question remains whether there is a role for three-dimensional MRIs and subsequently if it is possible to develop a computer aided automated grading system to establish the degree of clinically relevant cervical foraminal stenosis.

Laulloo et al. reviewed the literature for current or emerging automated grading systems of the cervical neural foramen, also including volumetric assessments of the neural foramen using MRI.

A systematic search of Cochrane Library, Cochrane Clinical Trials, Ovid MEDLINE, EMBASE, CINAHL, ACM Digital Library and Institute of Electrical and Electronics Engineers (IEEE) and Web of Science was performed for reports examining automated systems and volumetric scanning foraminal stenosis published before 31.07.2021. Results 3971 articles were identified with 8 included. The automated grading systems of the neural foramen focus largely of the lumbar spine with elements that may be applicable to the cervical spine. Although there are established studies for the automated grading of the lumbar spine, it is uncertain whether any of these are reproducible in the cervical spine. Visual grading systems for the cervical spine demonstrate good inter-reader reliability between radiologists and clinicians.

The Park visual grading system although has limited data on the correlation with neurological symptoms or surgical outcome does demonstrate good inter-reader reliability between radiologists and clinicians. There is scope for further development of an automated grading system for cervical foraminal stenosis to improve the speed and consistency of image interpretation [1)]

Cervical radiculopathy caused by spondylotic foraminal stenosis may require surgical treatment. Surgical options include anterior cervical foraminotomy and fusion or posterior cervical foraminotomy. Controversy remains regarding the preferable surgical approach. Pertinent clinical evidence is limited to low-quality observational reports. Therefore, treatment decisions are predominantly based on the individual surgeon's preference and skill.

Posterior cervical foraminotomy

see Posterior cervical foraminotomy.

Posterior full-endoscopic cervical foraminotomy

Posterior full-endoscopic cervical foraminotomy

1)
Laulloo A, Meacock J, Currie S, Leng J, Thomson S. Literature Review of Automated Grading Systems utilising MRI for Neuroforaminal Stenosis. Curr Med Imaging. 2022 Jun 28. doi: 10.2174/1573405618666220628100928. Epub ahead of print. PMID: 35762545.