Degenerative cervical myelopathy diagnosis

- Effect of diamagnetic therapy to manage a patient with degenerative cervical myelopathy and drug's intolerance
- Presentation and management of a patient with rapid progression of degenerative cervical myelopathy during pregnancy: a case report
- What is the role of non-surgical clinicians in the assessment and management of degenerative cervical myelopathy? - Insights from the RECODE-DCM peri-operative rehabilitation incubator
- Agreement Between Radiologist Grading of Cervical Spinal Stenosis on Contemporaneous MRI Versus CT Myelogram and Correlations With Quantitative Measurements of Canal Stenosis and Cord Compression
- The impact of elective spine surgery in Canada for degenerative conditions on patient reported health-related quality of life outcomes
- Exploratory Cluster-Based Radiographic Phenotyping of Degenerative Cervical Disorder: A Retrospective Study
- Prevalence of idiopathic normal pressure hydrocephalus in patients with degenerative cervical myelopathy
- The impact of nuchal ligament ossification resection on cervical stability after modified laminoplasty: a long-term follow-up study

Symptom checkers are widely used by patients before medical consultation and can be useful for preliminary triage and diagnosis. Lack of recognition of Degenerative Cervical Myelopathy (DCM) by symptom checkers may contribute to the delay in diagnosis.

Despite Degenerative Cervical Myelopathy (DCM) being the most common form of spinal cord injury, effective methods to evaluate patients for its presence and severity are only starting to appear. Evaluation of patient images, while fast, is often unreliable; the pathology of DCM is complex, and clinicians often have difficulty predicting patient Degenerative cervical myelopathy outcome. Automated tools, such as the Spinal Cord Toolbox (SCT), show promise, but remain in the early stages of development. To evaluate the current state of an SCT automated process, Ost et al. applied it to MR imaging records from 328 DCM patients, using the modified Japanese Orthopedic Associate scale as a measure of DCM severity. They found that the metrics extracted from these automated methods are insufficient to reliably predict disease severity. Such automated processes showed potential, however, by highlighting trends and barriers which future analyses could, with time, overcome. This, paired with findings from other studies with similar processes, suggests that additional non-imaging metrics could be added to achieve diagnostically relevant predictions. Although modeling techniques such as these are still in their infancy, future models of DCM severity could greatly improve automated clinical diagnosis, communications with patients, and patient outcomes [1)]

A study sought to investigate whether online symptom checkers are able to recognise relevant symptoms of DCM, to characterise the DCM differential returned, and to evaluate the diagnostic performance of its recognised symptoms.

Classical DCM symptoms were pooled from leading review articles. These symptoms were entered into the algorithms used by the top 20 symptom checker websites (N=4) (Google Search). The most widely cited symptom checker, WebMD, was used to characterise the differential diagnosis for DCM

symptoms.

31 classical DCM symptoms were identified, of which 14 (45%) listed DCM as a differential and 3 (10%) placed DCM in the top third of the differential. The mean differential rank for motor symptoms was significantly better than for arthritic symptoms (P = .0093) and the average differential rank for all symptoms (P = .048). The symptom checker WebMD performed best at recognising DCM, placing it nearer the top of the differential list (average rank of 5.6) than both Healthline (rank of 12.9, P = .015) and Healthtools.AARP (rank of 15.5, P = .0014). On WebMD, only one combination of symptoms resulted in DCM as the primary differential: neck, shoulder and arm pain with hand weakness. 151 differential diagnoses for DCM symptoms were recorded on WebMD. Multiple sclerosis and peripheral neuropathy were the most common differentials, shortlisted for 52% and 32% of DCM symptoms respectively.

DCM symptoms perform poorly in online symptom checkers and lead to a large differential of many other common conditions. Whilst a diagnosis becomes more likely as the number of symptoms increases, this will not support much needed earlier diagnosis. Symptom checkers remain an attractive concept with potential. Further research is required to support their optimisation [2)].

The timeline of neurological decline and loss of function can be gleaned from the history, whereas important physical examination findings include hyperreflexia, presence of pathological reflexes, weakness, difficulty with gait, or dysdiadochokinesia.

A major shortcoming in the management of CSM is the lack of an effective diagnostic approach to stratify treatments and to predict outcomes. No current clinical diagnostic imaging approach is capable of accurately reflecting underlying spinal cord pathologies.

Radiographs

Plain radiographs can reveal degenerative changes with osteophyte formation and disc height loss.

Magnetic resonance imaging

Degenerative cervical myelopathy magnetic resonance imaging.

Computed tomography myelography

see Computed tomography myelography for degenerative cervical myelopathy.

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Ost K, Jacobs WB, Evaniew N, Cohen-Adad J, Anderson D, Cadotte DW. Spinal Cord Morphology in Degenerative Cervical Myelopathy Patients; Assessing Key Morphological Characteristics Using Machine Vision Tools. J Clin Med. 2021 Feb 23;10(4):892. doi: 10.3390/jcm10040892. PMID: 33672259; PMCID: PMC7926672.

2)

Davies BM, Munro CF, Kotter M. A Novel Insight into the Challenges of Diagnosing Degenerative Cervical Myelopathy using Online Symptom Checkers. J Med Internet Res. 2018 Jul 30. doi: 10.2196/10868. [Epub ahead of print] PubMed PMID: 30300137.