

Cervical spondylotic myelopathy surgery outcome

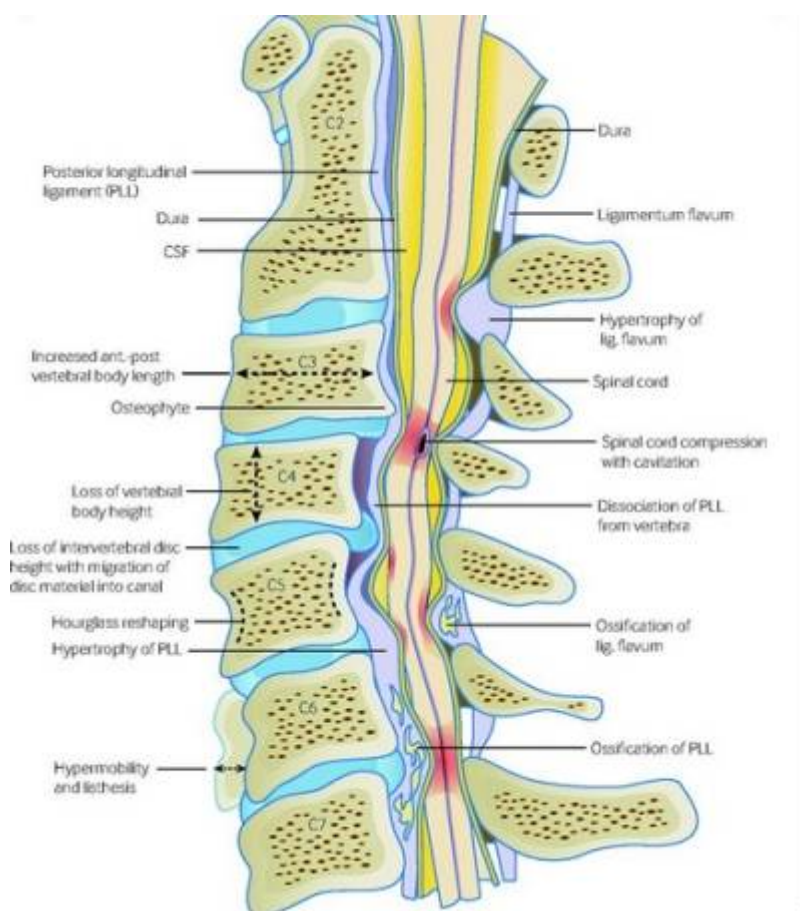
Indications and optimal timing for surgical treatment of [degenerative cervical myelopathy](#) (DCM) remain unclear, and data from daily clinical practice are warranted.

Gulati et al. investigated clinical outcomes following decompressive surgery for DCM.

Data were obtained from the [Norwegian Registry for Spine Surgery](#). The primary [outcome](#) was change in the [neck disability index](#) (NDI) 1 yr after surgery. Secondary endpoints were the [European myelopathy score](#) (EMS), [quality of life](#) ([EuroQoL 5D \[EQ-5D\]](#)), [numeric rating scales](#) (NRS) for headache, neck pain, and arm pain, complications, and perceived benefit of surgery assessed by the [Global Perceived Effect scale](#).

They included 905 patients operated between January 2012 and June 2018. There were significant improvements in all [Patient-reported outcome measures](#) (PROMs) including NDI (mean -10.0, 95% CI -11.5 to -8.4, $P < .001$), EMS (mean 1.0, 95% CI 0.8-1.1, $P < .001$), EQ-5D index score (mean 0.16, 95% CI 0.13-0.19, $P < .001$), EQ-5D visual analogue scale (mean 13.8, 95% CI 11.7-15.9, $P < .001$), headache NRS (mean -1.1, 95% CI -1.4 to -0.8, $P < .001$), neck pain NRS (mean -1.8, 95% CI -2.0 to -1.5, $P < .001$), and arm pain NRS (mean -1.7, 95% CI -1.9 to -1.4, $P < .001$). According to GPE scale assessments, 229/513 patients (44.6%) experienced “complete recovery” or felt “much better” at 1 yr. There were significant improvements in all PROMs for both mild and moderate-to-severe DCM. A total of 251 patients (27.7%) experienced adverse effects within 3 mo.

Surgery for DCM is associated with significant and clinically meaningful improvement across a wide range of PROMs ¹⁾.



Objective scoring of the post-operative neurological function did not correlate with patient-perceived outcomes in [Degenerative cervical myelopathy outcome](#) (DCM). Traditional testing of motor and sensory function as part of the neurological assessment may not be sensitive enough to assess the scope of neurological changes experienced by [Degenerative cervical myelopathy](#) patients ²⁾.

Hamdan assessed the relation between [MRI T2 Weighted images](#) (T2 weighted image) hyperintense cord signal and clinical outcome after [anterior cervical discectomy](#) in patients with degenerative [cervical disc herniation](#).

This retrospective observational study was conducted on twenty-five patients with degenerative cervical disc prolapse associated with MRI T2 weighted image hyperintense cord signal, at the Department of Neurosurgery, Qena University Hospital, South Valley University from August 2014 to December 2016. A complete clinical and radiological evaluation of the patients was done. [Anterior cervical discectomy and fusion](#) was done for all patients. Patients were clinically assessed preoperatively and postoperatively at 3, 6, and 12 months using [Modified Japanese Orthopaedic Association scale](#) (MJOA). Radiographic assessment was done by preoperative and postoperative T2 weighted image MRI. The statistical analysis was done using Statistical Package for the Social Sciences (SPSS) software (version 22.0).

There were 25 patients included in the study; 16 (64%) females and 9 (36%) males. The mean age was 46.89 ± 7.52 standard deviation (SD) years with range from 26 to 64 years, 3 (12%) patients had worsened in the form of postoperative motor power deterioration, and 14 (56%) patients has no improvement and remain as preoperative condition. The remaining 8 (32%) patients had a reported

postoperative improvement of symptoms and signs according to MJOA score. The mean follow-up period (in months) was 11 ± 2.34 (SD). Conclusion:

The presence of T2W hyperintense signal on preoperative MRI predicts a poor surgical outcome in patients with cervical disc prolapse. The regression of T2W ISI postoperatively correlates with better functional outcomes ³⁾.

Whilst decompressive surgery can halt disease progression, existing spinal cord damage is often permanent, leaving patients with lifelong disability.

Early surgery improves the likelihood of [recovery](#), yet the average time from onset of symptoms to correct diagnosis is over 2 years. The majority of delays occur initially, before and within primary care, mainly due to a lack of recognition. 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](#).

The impact of the changes in myelopathic signs following cervical decompression surgery and their relationship to functional outcome measures remains unclear.

Surgery is associated with a significant quality of life improvement. The intervention is cost effective and, from the perspective of the hospital payer, should be supported ⁴⁾.

Surgical decompression for CSM is safe and results in improved functional status and quality of life in patients around the world, irrespective of differences in medical systems and socio-cultural determinants of health ⁵⁾.

The successful management of CSM depends upon an early and accurate diagnosis, an objective assessment of impairment and disability, and an ability to predict outcome. In this field, quantitative measures are increasingly used by clinicians to grade functional and neurological status and to provide decision-making support ⁶⁾.

In addition, objective assessment tools allow clinicians to quantify myelopathy severity, predict outcome, and evaluate surgical benefits by tracking improvements throughout follow-up ^{7) 8) 9)}.

Several outcome measures assess functional impairment and quality of life in patients with cervical myelopathy ^{10) 11) 12) 13) 14)}.

A validated “gold standard,” however, has not been established, preventing the development of quantitative guidelines for CSM management ¹⁵⁾.

In this field, one of the most widely accepted tool for assessing functional status is the [modified Japanese Orthopaedic Association scale](#) (mJOA).

Some studies have found that resolution of T2 hyperintensity in subjects with CSM who undergo ventral decompressive surgery correlates with improved functional outcomes. Other studies have found little correlation with postoperative outcome ^{16) 17)}.

Machine learning for degenerative cervical myelopathy

see [Machine learning for degenerative cervical myelopathy](#).

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