

Background/

Introduction:

The incidence of degenerative cervical myelopathy (DCM) is expected to increase as the elderly population is growing. Indications for and results after surgical treatment of DCM in the elderly remain unclear, and data from daily clinical practice are needed to advise elderly patients with regards to treatment options. Purpose of the study: To investigate whether clinical outcomes in patients aged ≥ 70 undergoing decompressive surgery for DCM differ from those of younger patients (50 - 70 years) at one year. Materials and

Methods:

Prospectively obtained data from the comprehensive Norwegian Registry for Spine Surgery (NORspine) were used. NORspine comprises $> 80\%$ of all degenerative cervical spine surgeries performed in Norway. Patients included in this study had a primary diagnosis of DCM, were ≥ 50 years, and had undergone decompressive surgery (either anterior, posterior or combined) between 2012 and 2018. The patients were dichotomized into 50 - 70 years, and ≥ 70 years. Primary outcome was change in Neck Disability Index (NDI). Secondary outcomes were changes in European Myelopathy Score (EMS), quality of life (EQ-5D), numeric rating scales (NRS) for headache, neck pain, and arm pain, Global Perceived Effect (GPE) and complications.

Results:

We analyzed data from 474 patients aged 50 -70 years, and 177 patients aged ≥ 70 years treated surgically for DCM between 2012 and 2018. For both age cohorts combined, NDI changed from 33.8 to 25.2 (mean change 9.2, 95% CI 7.7 to 10.6, $P < 0.001$). Cervical spine degeneration and comorbidity increase with age, and as expected, the two cohorts were not balanced for baseline factors. Still, the older age cohort experienced similar and significant improvement of NDI, EQ-5D, GPE and pain scores, and even larger improvement of the EMS score. This was due to a higher proportion of moderate-to-severe DCM in the older age cohort, and the moderate-to severe DCM patients had larger improvement of EMS scores in both groups. 128 patients (27.0%) 50 – 70 years and 64 patients (36.2%) ≥ 70 years experienced complications or adverse effects within three months of surgery, mostly superficial wound infections, urinary and respiratory tract infections.

Conclusions: Surgery for DCM was associated with significant improvement across a wide range of PROMs for both younger and elderly patients at one year. Surgical treatment not only arrested further progression of myelopathy, but also improved functional status, neurological outcomes and quality of life with reasonable complication rates in both age cohorts. Thus, surgery for DCM should not be denied based on age alone. There is still uncertainty with regards to timing, surgical approach and the need for instrumentation in both age cohorts.

