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The Impact of Neck Pain on Functional and Quality of Life Outcomes in Cervical Myelopathy

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Background: Neck pain imposes a substantial economic burden, including healthcare costs and lost productivity. In degenerative cervical myelopathy (DCM), neck pain affects up to 80% of patients undergoing surgery. Despite, evidence linking neck pain with poorer health-related quality of life (HRQoL), predictors of HRQoL remain inconsistent, and direct comparison between patients with neck pain (NP) and those without neck pain (NNP) are lacking.

Research Question: Are functional and HRQoL outcomes different in DCM patients with and without neck pain?

Design: Ambispective analysis of 3 large multicenter DCM studies

Methods: Patients with moderate and severe mJOA requiring surgery were included. Baseline and one-year neurological status and HRQoL, assessed using SF-36 Physical and Mental Health Component Summary (PCS and MCS), were compared between NP and NNP groups using mean differences (MD). One-year HRQoL scores were modeled using multivariable regression adjusted for confounders.

Results: A total of 1047 patients (mean age: 56.80 ±11.39, 39% females) were included. Baseline demographic, smoking status, comorbidities, and mJOA scores (12.39±2.56) were comparable between NP (n=853) and NNP (n=194) groups. NNP patients had significantly higher baseline SF36 PCS (MD:4.84; 95% CI: 3.28-6.41) and MCS (MD: 5.05, 95% CI 3.07-7.03). Both groups showed clinically significant MCS improvement by 6 months (p=0.03). At one year, HRQoL differences persisted, favoring NNP (PCS MD:3.05, 95% CI: 1.50-4.59; MCS MD: 5.08, 95% CI: 3.34-6.82). One-year neck pain scores predicted PCS, while both baseline and one-year scores predicted MCS in regression analysis.

Discussion: This is the first multicenter study to show consistently better HRQoL outcomes in DCM patients without neck pain at baseline and at one year after surgery. Focused neck pain assessment is crucial for optimizing DCM outcomes.

Figure 1: Multivariable Linear Regression Model for 1 year SF-36 PCS stratified by sex

Fig. 1

Figure 2. Multivariable Linear Regression Model for 1 year SF-36 PCS stratified by sex

