

Deep Neck Extensors

Deep Neck Extensors: The deep cervical extensors (semispinalis cervicis, multifidus, and rotators) along with the cranio-cervical extensors (rectus capitis posterior major/minor and obliquus capitis superior/inferior) are KEY MUSCLES for cervical spine segmental support due to their relatively small moment arms.

The objective of a study by Liu et al. was to investigate the association between the [cross-sectional area](#) (CSA) of the deep extensor [muscles](#) (DEM) and post[laminoplasty](#) alignment.

The preoperative CSA of the [Semispinalis cervicis muscle](#) (SC) has been reported to correlate with [loss of lordosis](#) (LL) after [laminoplasty](#), with a CSA <154.5 mm² associated with a 10 degrees LL.

Laminoplasty patients at the University of [California San Francisco](#) between 2009 and 2018 by 2 [spine surgeons](#) were retrospectively studied. Patients with previous [cervical spine surgery](#) or nondegenerative diagnoses were excluded. Measurements included the [C2-C7 angle](#), [T1 slope](#), and [cervical sagittal vertical axis](#). Preoperative DEM CSA was measured on [magnetic resonance imaging](#). Variables associated with lordosis were analyzed with [univariate](#) analysis and multivariate [logistic regression](#), and association between postoperative [Cervical spine alignment](#) and the musculature was evaluated.

Seventy-six patients with a mean age of 64 years were included. The average follow-up was 22.53 months. The overall average CSA of the DEM was 2274.55 mm² and that of the SC was 275.64 mm². Means of both CSAs were higher in men (P<0.001). Linear regression showed no correlation between LL with CSA of the DEM or the SC (r=0.005, P=0.119; r=0.001, P=0.095). Univariate and multivariate regression showed no differences in the CSA of the DEM and SC between groups with and without LL (P=0.092, 0.117 and 0.163, 0.292). There was no correlation in LL with sex or body mass index (P>0.05).

Preoperative CSA of the [deep neck extensors](#) may not predict [lordosis](#) after [cervical laminoplasty](#). The correlation between the preoperative SC CSA and postoperative [Cervical spine alignment](#) may not be as strong as previously reported ¹⁾.

¹⁾

Liu J, Xie R, Ruan H, Rivera J, Li B, Mahmood B, Lee J, Guizar R 3rd, Mahmoudieh Y, Mummaneni PV, Chou D. The [Preoperative Cross-sectional Area](#) of the Deep Cervical Extensor Muscles Does Not Predict Loss of [Lordosis](#) After Cervical Laminoplasty. Clin Spine Surg. 2021 May 24. doi: 10.1097/BSD.0000000000001199. Epub ahead of print. PMID: 34029263.

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