

Introduction

Cervical Spondylolisthesis (CS) presents in ~12% of patients with Degenerative Cervical Myelopathy (DCM). However, its impact on clinical presentation and surgical outcome have not been well-described. Using a prospective and multicenter cohort, we compared patients with and without CS on MRI undergoing surgical treatment for DCM.

Methods

458 MRIs from the AOSpine North America and International Studies were reviewed. Patient demographics and baseline neurological and functional status were also obtained. CS was identified using T2 MRI. Patients with DCM were divided into two cohorts, those with CS and those without. Patient demographics, neurological and functional status at baseline and outcome at 2-year follow-up were compared using independent t-tests, chi square tests, Fischer exact tests, and multivariate analysis.

Results

In comparison to the non-spondylolisthesis cohort (n=404), CS patients (n=54) were on average 8.8 years older (p<0.0001), presented with worse baseline neurological and function status (mJOA, p=0.008; Nurick, p=0.008; SF-36-PCS, p=0.01), more commonly presented with ligamentum flavum enlargement (81.5%vs53.5%, p<0.0001), were less commonly from Asia (p=0.0002), and tended to have more levels of compression (p=0.052) and lower prevalence rates of OPLL (p=0.098). There was no difference in sagittal alignment between the groups (p=0.94). The surgical approach varied between cohorts (p=0.0002), with posterior approaches more commonly performed with CS (61.1%vs37.4%). CS patients also had more operated levels (4.28+/-1.43vs3.61+/-1.19, p=0.0002), and tended to undergo longer operations (196.58+/-89.20vs177.20+/-75.57min, p=0.087). The mean improvement of neurological function was lower with CS [mJOA (1.51+/-3.56vs2.77+/-2.72, p=0.003); Nurick (-0.78+/-1.42vs-1.45+/-1.45, p=0.002)], and CS was an independent predictor of worse mJOA recovery ratio at 2-years (B=-0.190, p<0.0001).

Conclusions

CS patients are older and present with worse neurological and functional impairment. Furthermore, they receive surgery on more levels and more commonly from the posterior. CS may indicate a more advanced state of DCM pathology and is more likely to result in a suboptimal surgical outcome.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the importance of the presents of cervical spondylolisthesis in patients with DCM with regards to clinical presentation and surgical outcome. 2) Discuss, in small groups how the presentation of cervical spondylolisthesis will impact their clinical management. 3) Identify an effective treatment strategy for dealing with cervical spondylolisthesis in the setting of DCM.

References

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