Does Age Affect Surgical Outcomes in Patients with Degenerative Cervical Myelopathy? : Results from the Prospective, Multicenter AOSpine International Study on 479 Patients

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Introduction

Older patients have lower recovery potential following degenerative cervical myelopathy (DCM) surgery due to co- morbidities, reduced physiological reserves and age-related changes to the spinal cord. This study aims to determine whether age is an independent predictor of surgical outcome.

Methods

479 patients with symptomatic DCM undergoing surgery were prospectively enrolled at 16 sites. Our sample was divided into a younger group (< 65 years) and an elderly group (= 65 years). Patient demographics, baseline status and surgical summaries were compared between these groups. A mixed model analytic approach was used to evaluate between group differences in mJOA, Nurick, SF-36v2 and NDI scores. We first created an unadjusted model using age and surgical outcome and then developed two adjusted models accounting for variations in 1) baseline characteristics and 2) both baseline and surgical factors.

Results

360 patients were <65 years and 119 were =65 years. The elderly patients had significantly higher co-morbidity scores (p<0.0001) and were functionally more severely affected based on mJOA (p<0.0001) and Nurick (p<0.0001) scales. The majority of younger patients (64.96%) underwent anterior surgery, whereas the posterior approach was more common for elderly patients (58.62%) (p<0.0001). Elderly patients had a greater number of decompressed levels (4.14±1.30) (3.50±1.23) (p<0.0001). Younger patients achieved a higher post-operative mJOA and a lower Nurick score than the elderly, even after adjustments for patient and surgical characteristics.

Conclusions

Age is a significant predictor of surgical outcomes in patients with DCM even after controlling for myelopathy severity, co-morbidities and number of operated levels.

Learning Objectives

This study aims to determine whether age is an independent predictor of surgical outcome.

References