

Surgical Outcomes of Cervical Spondylotic Myelopathy (CSM) in Elderly Patients: A Meta-analysis of 2868 Patients

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Introduction

Cervical spondylotic myelopathy(CSM) usually presents in fifth decade or later in life. As life expectancy continues to increase in United States, the incidence of CSM is expected to be increased. Currently, evidence is lacking in characterizing the role of spine surgery in elderly patients.

Methods

In accordance with PRISMA guidelines, we utilized PubMed database to identify relevant articles. A random-effects model was applied to assess pooled data due to high heterogeneity between studies. Mean difference and odds ratio were calculated for continuous and dichromatous parameters respectively.

Results

Eighteen studies comprising elderly(n=1169) and nonelderly(n=1699) patients who received surgical treatment for CSM were included in our meta-analysis. Of these studies, 5 were prospective and 13 were retrospective studies. Intraoperatively, both groups required similar amount of operation time (p=0.35). The elderly group had lower JOA(Japanese Orthopedic Association) score(MD -1.36, 95% CI -1.62- -1.09, p<0.00001) to begin with as compared to the non-elderly group. The non-elderly group also had a higher post-op JOA score (MD -1.11, 95% CI -1.44- -0.79, p<0.00001) and therefore demonstrating higher recovery rate from surgeries (MD -11.98, 95% CI -16.16- -7.79, p<0.00001). The length of stay (MD 4.14, 95% CI 3.54- 4.73, p<0.00001) is slightly longer in the elderly group. In term of radiological outcomes, the elderly group had lesser degree of postop Cobb angle but greater increase in spinal canal diameter as compared to the nonelderly group. The complication rates were not significant.

Conclusions

There is higher potential risk while operating on the elderly population but no significant difference in the incidence of postoperative complications were noted. Withholding surgery from elderly population can be morbid due to rapid progression of symptoms in addition to deconditioning from lack of mobility and independence. Potential benefit should be weighed against the risks in each patient before withholding surgery based on age alone.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the role of surgery in the elderly patients 2) To identify the associated complications