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Evaluating the Impact of Multiple Sclerosis on Two-year Postoperative Outcomes Following Anterior Cervical Discectomy and Fusion for Cervical Degenerative Pathology:A Propensity Score-Matched Analysis

Introduction: While adverse postoperative outcomes have been delineated and well-reported in relation to anterior cervical discectomy and fusion (ACDF) in the setting of degenerative cervical pathologies, the impact of neuromuscular disorders like multiple sclerosis (MS) on these outcomes is under-reported. We aimed at identifying the impact of MS on two-year postoperative complications and revisions following 2-3-level ACDF in the setting of degenerative cervical pathologies, such as cervical radiculopathy (CR) or myelopathy (CM).
Methods: Utilizing the SPARCS database, patients who underwent 2-3-level ACDF for CR or CM were identified. MS patients were 1:1 propensity score-matched to non-MS patients for age, sex, race, Charlson/Deyo index, before comparing both cohorts for demographics, hospital-related parameters, and rates of two-year postoperative complications and reoperations. Multivariate binary stepwise logistic regression models were utilized to determine independent predictors of these outcomes.
Results: 302 patients were identified (MS, n=151; non-MS, n=151). MS patients were more frequently female (72.8% vs. 67.5%) and had higher rates of private insurance (58.9% vs. 35.8%) (both, p<0.001). Compared to non-MS subjects, they experienced greater rates of deep vein thromboses (DVT, 3.3% vs. 0%, p=0.024), but had comparable revision (6.6% vs. 5.3%), as well as implant-related (3.3% vs. 3.3%), overall medical (19.2% vs. 21.2%), surgical (7.9% vs. 10.6%), and total complication (21.9% vs. 25.8%) rates (all, p>0.05).
Discussion: Despite differences in demographics and rates of postoperative DVT, MS patients experienced comparable postoperative courses with respect to other individual and overall complications and revisions following 2-3-level CF for degenerative spinal pathologies. This data supports the findings of previously published case series that ACDF for CR or CM may be performed relatively safely in patients with MS.