

Session/Poster#

Presenter

C12

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**Impact of Congestive Heart Failure on Postoperative Outcomes of Spinal Fusion (4+ levels) in Adults with Spinal Deformity**

Introduction: Limited research has studied the effect of CHF on spinal fusion surgery outcomes in patients with spinal deformity. This study compared outcomes in patients with and without CHF who underwent spinal fusion surgery (4+ levels).

Methods: Patients with spinal deformity and CHF who underwent spinal fusion surgery (4+ levels) between 2009-2011 were identified using New York State's Statewide Planning and Research Cooperation System. Propensity score matching was used to compare demographics, complications, and subsequent revision. Multivariate logistic regression analyses were performed to evaluate the association between CHF and postoperative outcomes while controlling for sex, age, and obesity status.

Results: 768 patients with spinal deformity were identified (CHF: n=384; non-CHF: n=384). Both cohorts were similar in age (mean age 68.7 years for CHF group and 68.8 years for non-CHF group, p=0.967), sex (52.3% female in CHF group and 52.3% female in non-CHF group, p=1.000), and obesity status (22.4% in CHF group and 22.1% in non-CHF group, p=0.931). The CHF cohort had higher surgical charges (\$107,660 vs. \$64,685, p<0.001), longer hospital stays (9.0 days vs. 4.3 days, p<0.001), and higher Deyo scores (2.6 vs. 1.0, p<0.001) compared to the non-CHF cohort. Surgical and medical complications were more frequent in the CHF cohort (all, p<0.05). After propensity score matching, patients with CHF had a higher risk of surgical complications (OR:1.8 [1.3 - 2.6], p=0.001), wound complications (OR:3.2 [1.1 - 8.9], p=0.030), medical complications (OR:3.4 [2.1 - 5.5], p<0.001), acute myocardial infarction (OR: 10.4 [3.9 - 27.8], p<0.001), and acute renal failure (OR: 2.9 [1.4 - 6.0], p=0.003).

Conclusion: Patients with spinal deformity and CHF who underwent spinal fusion surgery (4+ levels) experienced higher costs, longer stays, and increased rates of complications. Preoperative medical optimization and patient counseling should be improved to mitigate these risks.