

**The Impact of Ventricular Septal Defect on Outcomes and Complications Following Adult Spinal Fusion: A Propensity Scored-Match Analysis**

**Introduction:** This study seeks to compare outcomes and complication rates between patients with and without ventricular septal defects (VSD) undergoing surgery for spinal fusion. Within the literature, there are limited findings evaluating the impact of VSD on long-term outcomes after spinal fusion.

**Methods:** Using the National Inpatient Sample (NIS), patients above the age of 18 admitted from 2005 to 2012 who underwent spinal fusion were retrospectively reviewed. A 1:1 propensity score-match (PSM) by age, gender, and obesity status was performed before analyzing data. Univariate analyses evaluated demographics, complications, and mortality. Multivariate binary logistic regression models were also conducted to identify correlations between VSD and postoperative spinal fusion outcomes, controlling for multiple demographic factors.

**Results:** A total of 104 propensity score-matched patients were identified. The VSD cohort, compared to the non-VSD cohort, had a comparable length of stay, Deyo score, and total hospital charge. The average incidence rate between 2005 and 2012 for patients with VSD undergoing spinal fusion is 0.2 [0.2– 0.3] per 1,000,000 person-years. With a 1:1 PSM, patients with VSD, compared to non-VSD patients, had comparable rates for all postoperative complications. VSD was not an independent risk factor of any postoperative complications.

**Conclusion:** In the general adult population undergoing spinal fusion, patients with VSD, compared to non-VSD patients, had a comparable length of stay, Deyo scores, and total surgical charge. Patients with VSD had a comparable risk for all postoperative complications compared to non-VSD patients. These results can support the management of postoperative expectations and concerns in this patient cohort.