

The Impact of Atrial Septal Defect on Outcomes and Complications Following Total Hip Arthroplasty

Introduction: This retrospective study focuses on comparing outcomes and complication rates between patients with and without atrial septal defect (ASD) undergoing surgery for total hip arthroplasty (THA).

Methods: Using the National Inpatient Sample (NIS), patients admitted from 2005 to 2012 with a diagnosis of ASD who underwent THA were retrospectively reviewed. A 1:1 propensity score-match (PSM) by age, sex, and obesity status was performed before analyzing data. Univariate analyses evaluated demographics, complications, and subsequent revision. Multivariate binary logistic regression models were also conducted to identify correlations between ASD and postoperative THA outcomes, controlling for age, sex, and obesity status.

Results: A total of 264 propensity score-matched patients were identified (ASD n=264; non-ASD n=264). Both cohorts were nearly identical in age (ASD: 67.61 years, non-ASD: 67.92 years p=0.771), sex (ASD: 64.8% female, non-ASD: 62.5% female p=0.587), and obesity status (both 12.9%, p=1.000). The ASD cohort, compared to the non-ASD cohort, had a higher Deyo score (0.89 vs. 0.61, p=0.003) and length of stay (4.58 days vs. 3.73 days, p<0.001). With a 1:1 PSM, patients with ASD, compared to non-ASD patients, had higher rates of medical complications, renal failure, and cerebrovascular events (all, p<0.05), but comparable surgical complication rates (p=0.736). ASD was found to be an independent predictor of medical complications (OR: 3.413 [1.900 – 6.132], p<0.001).

Conclusion: In the general population undergoing total hip arthroplasty, patients with ASD, compared to non-ASD patients, had higher Deyo scores and length of stay. ASD patients had higher risk for medical complications compared to non-ASD patients. These results can support management of postoperative expectations and concerns in this patient cohort.