

<u>Session/Poster#</u>	<u>Presenter</u>
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Atrial Septal Defects Increase Risk of Post-Operative Complications for Total Knee Arthroplasty

Introduction: Atrial septal defect (ASD) is a congenital heart defect defined by a hole between the atria that increases the risk of life-threatening complications after surgery. ASD patients undergoing total knee arthroplasty (TKA) are understudied therefore prompting an analysis of incidence rates and postoperative outcomes in ASD patients versus controls.

Methods: The 2005-2012 National Inpatient Sample was queried for patient demographics and incidence rates to identify patients who underwent TKA. Multivariate logistic regression analysis was used to control for age, sex and obesity status, and to compare the differences and rates of postoperative complications between cohorts.

Results: 559 ASD patients and 559 non-ASD patients were matched for sex (66.4% vs 66.2% female), age (67.70 vs 67.67 years) and obesity (18.2% vs 19.5%). TKA ASD patients had higher rates of surgical and medical complications, transfusions, acute myocardial infarctions (MI), acute renal failure (ARF), pulmonary embolisms (PE), deep vein thrombosis (DVT), and cerebrovascular events (all, $p < 0.05$). Moreover, ASD was an independent predictor of increased risk of surgical complications (OR=1.516, 95%CI=1.084 - 2.119, $p=0.015$), medical complications (OR=1.656, 95%CI=1.299 - 2.111, $p < 0.001$), gastrointestinal complications (OR=4.890, 95%CI=3.196 - 7.483, $p < 0.001$), transfusions (OR=1.524, 95%CI=1.081 - 2.147, $p=0.016$), acute MI (OR=17.502, 95%CI=2.321 - 131.967, $p < 0.001$), ARF (OR=3.090, 95%CI=1.376 - 6.938, $p=0.006$), PE (OR=9.799, 95%CI=2.272 - 42.271, $p=0.002$), DVT (OR=4.066, 95%CI=1.141 - 14.487, $p=0.031$) and cerebrovascular events (OR=18.895, 95%CI=6.840 - 52.194, $p < 0.001$).

Discussion and Conclusion: ASD patients undergoing TKA have significantly higher risk of postoperative surgical and medical complications, transfusions, acute MI, ARF, PE, DVT and cerebrovascular events. Our findings beg for precautionary considerations for patients with ASD prior to TKA to improve patient care.