

Effect of Sickle Cell Disease on Post-Operative Outcomes of Total Shoulder Arthroplasty

Introduction: Sickle cell disease (SCD) is an inherited blood disorder caused by abnormal hemoglobin. This decreases the lifespan of red blood cells and can lead to a multitude of complications. The impact of SCA on patients undergoing TSA is poorly characterized.

This study sought to determine the impact of sickle cell disease on patients undergoing primary total shoulder arthroplasty (TSA)

Methods: The National Inpatient Sample was queried to identify patients who underwent TSA surgery (ICD9: 8180, 8181, 8188) from 2005 to 2012. Patient demographics were recorded. Patients with and without an SCD diagnosis were 1:1 propensity score match based on age, sex, race, and diagnosis of obesity. Univariate analysis was used to compare differences in postoperative complications, revision of shoulder arthroplasty (ICD9: 8197) and in-hospital mortality in patients with and without SCA. Multivariate binary logistic regression was used to identify independent risk factors for adverse outcomes after TSA.

Results: 141 patients with SCA and 141 without SCA were identified. Both cohorts had similar sex (61.0% vs 63.1% female) and rates of obesity (10.6% vs 10.6%). SCA patients who underwent TSA experienced higher rates of surgical complications and transfusions (all, $p < 0.05$). Moreover, patients undergoing TSA with a diagnosis of SCA were at increased risk for surgical complications [OR=2.9, 95%CI=1.5 – 5.5, $p=0.002$] and transfusions (OR=3.6, 95%CI=1.8 – 7.2, $p < 0.001$) (Table).

Conclusions: Patients undergoing TSA with a diagnosis of SCA experienced higher rates of post-operative surgical complications and transfusions. This helps surgeons better risk-stratify and optimize patients prior to TSA.