

Effect of Sickle Cell Anemia on Postoperative Outcomes of Adult Laminectomy Patients

Objective: To elucidate incidence rates of sick cell anemia (SCA) in adult laminectomy patients and compare postoperative outcomes between adult patients with and without SCA undergoing laminectomy.

Summary of background data: SCA is an inherited blood disorder leading to the deformation of red blood cells resulting in microvascular occlusion and tissue infarction. The impact of SCA on postoperative outcomes of adult patients undergoing laminectomy has not been well studied.

Methods: The National Inpatient Sample was queried to identify patients who underwent laminectomy (ICD9: 0309, 0302) from the years 2005 – 2012. Patient demographics and incidence rates of SCA were reported from the years 2005 – 2012. 1:1 propensity score match controlling for age, sex, race, and obesity status was performed. Univariate analysis was used to compare differences in postoperative complications and in-hospital mortality between the SCA cohort and controls. Multivariate logistic regression analysis controlling for age, sex, race, and obesity status was performed to determine SCA status as an independent risk factor for postoperative outcomes between the two cohorts.

Results: Cohorts of 157 SCA patients and 157 non-SCA patients were identified. The average incidence rate of SCA in patients who underwent laminectomy from 2005 – 2012 was 0.7 (95%CI: 0.6 – 0.8) per 1,000,000 person years. Incidence rates of SCA increased by 4.0% from the years 2005 – 2012. SCA patients who underwent laminectomy did not experience higher rates of overall surgical and medical complications (all, $p > 0.05$). Patients with prior SCA who underwent laminectomy were not at increased risk for postoperative surgical or medical complications (all, $p > 0.05$).

Conclusions: Adult patients with SCA who undergo laminectomy did not experience higher rates of post-operative surgical complications or medical complications. These findings should be utilized for risk assessment in SCA patients undergoing laminectomy.