

Introduction

The aim of this study was to use the multicenter American College of Surgeons National Surgical Quality Improvement Program - Pediatric (NSQIP -P) to evaluate and identify risk factors for 30-day adverse events in children undergoing epilepsy surgery.

Methods

Using the 2015 NSQIP-P database, we identified children (age 0-18 years) undergoing pediatric epilepsy surgery and analyzed NSQIP-defined complications, unplanned reoperations and unplanned readmissions. Multivariate regression analysis was performed using perioperative data to identify risk factors for adverse events within 30 days of the index procedure.

Results

Two hundred and eight pediatric patients undergoing epilepsy surgery were identified for the year 2015 in the NSQIP-P database. The majority of patients were male (51.8%) and white (72.9%). The median age was 10 years. Neurological and neuromuscular comorbidities were seen in 62.5% of patients. Surgical blood loss and transfusion was the most common overall NSQIP-defined event (15.7%) and was reported in 40% of with hemispherectomy. Nineteen patients (6.8%) had an unplanned reoperation and twenty patients (7.1%) had an unplanned readmission. Multivariate regression analysis showed that African-American patients (OR 3.26, 95% CI 1.29 – 8.21, p=0.01) and hemispherectomy (OR 3.05 (1.4-6.65, 95% CI 1.4-6.65, p=0.01) were independently associated with NSQIP-defined complications. Patients undergoing hemispherectomy (OR 4.11, 95% CI 1.48-11.42, p=0.01) were also at significantly higher risk of unplanned readmission after pediatric epilepsy surgery.

Conclusions

Data from the 2015 NSQIP-P database showed that hemispherectomy was significantly associated with higher perioperative events in children undergoing epilepsy surgery. Quality-improvement initiatives for hemispherectomy should target surgical blood loss and wound-related complications. Racial disparities in access to epilepsy surgery and perioperative complications were also highlighted in the present study.

Learning Objectives

By the conclusion of the session, participants should be able to (1) describe 30 day outcomes in pediatric epilepsy surgery (2) identify variables associated with higher perioperative events

References

Kraemer K, Cohen ME, Liu Y, Barnhart DC, Rangel SJ, Saito JM, Bilimoria KY, Ko CY, Hall BL. Development and Evaluation of the American College of Surgeons NSQIP Pediatric Surgical Risk Calculator. 2016 Nov; 223, 5: 685-693.

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