An Assessment of 30-Day Complications in Primary Cleft Palate Repair - A Review of the 2012 ACS NSQIP Pediatric

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Background: The American College of Surgeons National Surgical Quality Improvement Program Pediatric is a 30-day quality improvement database that was recently made available in November 2013. The literature is replete with studies on cleft palate using single-institution data; this study utilizes the ACS NSQIP Pediatric database (ACS NSQIP Peds) to identify risk factors across institutions to better understand national readmission and complication rates for cleft palate.

Methods: Patients undergoing CPT codes 42200 and 42205 were extracted from the 2012 Pediatric Participant Use Data File (2012 PUF) from ACS NSQIP Peds. Patients older than 36 months or with an additional surgery that altered the risk were excluded. Additional surgeries were categorized by similar CPT codes. Outcome variables were combined to create a complication variable. Fisher's exact and Wilcoxon rank-sum tests were used for analysis.

Results: Of the 1004 patients identified with CPT codes, 751 met eligibility criteria. There were 192 (25.6%) unilateral clefts, 146 (19.4%) bilateral, and 413 (55.0%) unspecified. The average age of surgery for those without and with complications was 421.1±184.8 and 433.6±168.0 days, respectively (p=0.76). Of the 21 (2.8%) patients with complications, respiratory complications were the most common, including seven mechanical ventilations for >12 hours following surgery, four unplanned re-intubations, and one pneumonia. Other complications consisted of four wound disruptions, three re-operations, and two graft/prothesis/flap failures with one patient having an additional superficial surgical site infection. Risk factors associated with complications included ASA score of 3 (p=0.003), nutritional support (p=0.013), esophageal/gastric/intestinal disease (p=0.016), oxygen support (p=0.003), structural pulmonary/airway abnormality (p=0.011), and impaired cognitive status (p=0.009). Patients undergoing additional surgeries like laryngoscopy (p=0.048) or other (p=0.047) were also found to be associated with increased complications. The readmission rate was 1.9%.

Conclusion: According to the ACS NSQIP Peds database, complication and readmission rates are low for cleft palate repair. Of note, ASA score of 3, nutritional support, esophageal/gastric/intestinal disease, oxygen support, structural airway abnormality, impaired cognitive status, laryngoscopy, and other additional surgeries were related to an increase in complications.

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