Anesthesia Complications of NPO Violations in Pediatric Orthopaedic Emergencies

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INTRODUCTION: The findings in this study support the practice of timely operative intervention for pediatric orthopaedic emergency cases regardless of preoperative fasting. There are many factors that are associated with anesthesia-related aspiration. The timing of the most recent oral intake is just one of them; and, its risk contribution remains hotly debated. Our study focuses on perioperative anesthesia-related aspiration risk in pediatric orthopaedic trauma patients; and demonstrates no differences in pulmonary complications regardless of NPO status.
METHODS:
Three-hundred-twenty-one pediatric patients who underwent emergency orthopaedic procedures were identified through operative booking records at a high-volume_pediatric trauma center over a 10-year period (2010-2020). Patients were divided into those meeting American Society of Anesthesiologists (ASA) fasting criteria at the time of the procedure, 8 hours fasting from solid food and 2 hours from liquid, and those who did not[1](Practice Guidelines for Preoperative ...). All were then reviewed for potential complications of gastric content aspiration surrounding anesthesia including intraoperative emesis, postoperative emesis, postoperative cough, prolonged supplemental oxygen requirements, unplanned ICU stay, and death.
RESULTS: Out of the 321 patients who met the inclusion criteria, 264 (82%) met fasting guidelines, and 57 (18%) did not. Of the 264 cases meeting preoperative fasting guidelines there was 1 patient with an anesthesia-related complication who required prolonged oxygen supplementation postoperatively. Of the 57 patients not meeting fasting guidelines there were no anesthesia or procedural related complications. Utilizing the rate of anesthetic complications found in this study (0.3%), a patient cohort of 2,067 patients would be needed to achieve adequate power to show significant risk in not meeting fasting criteria.
DISCUSSION AND CONCLUSION: Our findings did not show increased risk of anesthetic complications in pediatric orthopaedic patients not meeting standard fasting criteria in the setting of emergency surgery. We believe this serves as a valuable starting point for further research and potential meta-analysis into the effectiveness of the widespread fasting protocol in pediatric patients, and the role it should play in perioperative decision making.