Objective: To determine surgical outcomes of pediatric patients undergoing surgery with perioperative severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) diagnosis. Methods: Data were collected from all patients 18 years old and younger who underwent surgery at Primary Children’s Hospital (PCH) and tested positive for SARS-CoV-2 within 1 week prior to their procedure between March 1 to December 31, 2020. Results: A total of 43 procedures were performed on 39 patients who tested positive for SARS-CoV-2. No 7- or 30-day mortality events were observed. Pulmonary complications were observed in 3 out of 43 (7%) surgeries performed on patients with perioperative SARS-CoV-2 diagnosis, and none were observed in 124 surgeries performed on patients without SARS-CoV-2 diagnosis (p=.003). Conclusion: Pediatric patients undergoing surgery with perioperative SARS-CoV-2 diagnosis may be at increased risk for pulmonary complications.

The rapid spread of SARS-CoV-2 has become a global emergency since the beginning of 2020. There has been wide-scale cancellation of elective surgeries due to risk of transmission, concerns for adverse post-operative outcomes and resource limitations. In adults, postoperative pulmonary complications occurred in half of patients with perioperative SARS-CoV-2 and are associated with higher mortality. However, the impact of SARS-CoV-2 on postoperative recovery of pediatric patients is not well studied. This study aims to examine surgical outcomes of pediatric patients diagnosed with SARS-CoV-2 to help better inform clinical decision making in this population.

A retrospective analysis was performed. All pediatric patients who underwent surgery at PCH and tested positive for SARS-CoV-2 within 1 week prior to their procedure were included. Age-matched control patients who underwent similar procedures over the past ten years were also included in a 3:1 ratio. The primary outcome examined was 7- and 30-day mortality rates. Secondary outcomes were post-operative pulmonary complications, specifically unexpected ventilation, pneumonia, or acute respiratory distress syndrome. Fisher exact test was used for data analysis.

Similar to the lower morbidity of SARS-CoV-2 infection seen in pediatric patients, our study suggests that the surgical risks in pediatric patients diagnosed with SARS-CoV-2 are also lower than in adult patients. However, pulmonary complications are still seen in a small number of patients. Further study is needed to determine whether the threshold of surgery for children during COVID-19 should be lowered and if less restrictive surgical policies should be considered in preparation of a future COVID-19 outbreak.

REFERENCES