Implementation of a Fast-Track Pathway to Enhance Recovery after Non-Complicated Pediatric Appendicitis

Angela M. Kao, Trudy L. Marks, LaBron Chambers, Graham H. Cosper
Levine Children’s Hospital

Introduction

Acute appendicitis is the most common surgical indication in the pediatric population, yet there remains wide variability in initial diagnostic workup and perioperative management.1

Same-day discharge following laparoscopic appendectomy has recently been shown to be safe for children presenting with acute non-complicated appendicitis.2-5 Standardized enhanced recovery protocols have also been shown to decrease in-hospital costs and reduce recovery time.

A multidisciplinary, standardized fast-track pathway was developed at Levine Children’s Hospital for patients acute non-perforated appendicitis beginning in June 2017.

Implementation

What were key steps for implementation?

- A multidisciplinary team of stakeholders involving physicians/nurses from pediatric surgery, anesthesiology and ED identified areas for targeted improvement.
- Preoperative counseling of patients on expectations for recovery and discharge.
- Education of perioperative providers/staff including nursing, ED, patient transfer, guest relations received a 1-hour session on the fast-track pathway.
- EMR-compatible powerplan created to standardize provider orders and reduce variability in medications.
- Designated OR-adjacent unit for preop/postop recovery staffed by ERAS-trained nurses. Clearly stated postoperative recovery expectations including patient mobilization out of bed within 1 hour after surgery and PO diet within 2 hours after surgery.
- Nursing-initiated assessment of discharge readiness and initiation of conditional discharge orders once pre-set criteria met.
- Quarterly meetings were held regularly to evaluate protocol implementation and troubleshoot areas.
- Available resources (question and answer board, education folders) for staff members to reach out with questions.

Results

Comparing to pre-pathway patients, significant improvements after fast-track pathway implementation have included:

- 90.2% of patients discharged either within 8 hours after surgery (87.2%) or immediately after morning rounds (23%).
- Duplicate/excess antibiotic dosing decreased from 48.7% to 6.6%.
- Urinary catheter utilization decreased from 43.1% to 11.5%.
- After surgery, all patients were mobilized out of bed within 1 hour and starting diet within 2 hours.
- Significant decrease in post-op IV opioid use from 86.2% to 54.1%.
- Improvement in nursing staff satisfaction, reporting “increased autonomy”.
- Decrease in total hospital LOS by 43% and post-op LOS by 60%.

Discussion

In this multidisciplinary quality improvement (QI) effort, a standardized perioperative pathway for a common pediatric surgical diagnosis was developed and implemented.

Early results demonstrate significant improvements in patient quality and safety, including reductions in hospital length of stay, better antibiotic stewardship, and more efficient resource utilization.

Use of visual guides for patient education improved patients’ understanding and expectations for recovery. This QI effort also resulted in increases in nursing staff satisfaction and feelings of autonomy.

Over time, the “enhanced recovery culture” has become a cornerstone of the perioperative infrastructure at Levine Children’s Hospital, with increasing recognition of the potential benefits of the fast-track protocol.

Pre and Post-Pathway Components

Survey of Staff Satisfaction: Pre vs. Post-Pathway

Contact Info

angela.kao@atriumhealth.org

References