Appendicitis Management Pathway

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Introduction

This pathway is for use with children aged 2-18 years old with no underlying disease or co-morbidity who have a confirmed diagnosis of appendicitis (either non-perforated or perforated) by the General Surgery Team who require a surgical appendectomy or medical management. Patients are to be removed from this pathway if there are significant postoperative complications (eg. bowel obstruction or prolonged TPN) or a change in diagnosis.

Target Users

- General Surgery Surgeons, Residents, Fellow, Nurse Practitioners, and nurses on the inpatient units

Definitions

- Non-perforated appendicitis- Appendix is normal, injected, inflamed or suppurative. Presence of cloudy fluid +/- local fibrinous exudate, or gangrenous appendicitis but with no visible hole in appendix, abscess or free fecalith
- Perforated appendicitis- Visible hole in appendix, free fecalith, diffuse peritonitis with fibrinous exudate or abscess
- Appendectomy- surgical removal of the appendix
- Fever- a fever is defined as any temperature reading greater than 38ºC
Appendicitis Algorithm

Recommendations - Printable Version

- Child in ED with confirmed diagnosis of Appendicitis on ultrasound
  - ED consult General Surgery team and initiate ED Appendicitis protocol

  - Are there signs of perforation on ultrasound?
    - NO - Refer to 4-FLUIDS
    - YES - Are there drainable collections on ultrasound?

  - YES - ICT to insert percutaneous drain for collection, and determine length of time until drain removal

  - Child will receive IV Ceftriaxone/Metronidazole until drain is removed

  - Continue IV ceftriaxone/metronidazole (Refer to 4-FLUIDS)

  - Post-op:
    - Convert to oral antibiotics when child is able to tolerate oral diet
    - 7 days of oral antibiotics (days include day patient was on oral antibiotics) (Refer to 4-FLUIDS)

  - Switch to Oral Cefixime (pediatric) (refer to 4-FLUIDS)**

- Child Mejor on OR Priority 2 list
- Start Ceftriaxone/Metronidazole via IV or oral order set
- Refer to 4-FLUIDS

- Admit patient to General Surgery for further management

  - Are there drainable collections on ultrasound?
    - YES - ICT to insert percutaneous drain for collection, and determine length of time until drain removal

  - Child will receive IV Ceftriaxone/Metronidazole until drain is removed

  - Continue IV Ceftriaxone/Metronidazole (Refer to 4-FLUIDS)

- Discharge child home if following diet with no further antibiotics

*The patient clinically worsens, consider upgrade to IV antibiotic/day 1. If no ultrasound within the past 2-3 days, repeat in order to rule out drainable collection.

**Alternative oral antibiotic therapy with Cefixime and Metronidazole may be considered in settings of confirmed bowel perforation.

***Antibiotic therapy should be assessed based on any available microbiological data (e.g. if cultures are obtained from an abdominal abscess aspiration).

****A fever is defined as any temperature reading greater than 38°C (Refer to Sepsis Clinical Pathway)
# Inpatient Non-Perforated Appendicitis Care Pathway

## Pre-operative
1. Hydration maintained
2. Adequate pain control
3. Patient prepared for OR
4. Children are advised of pre-op bath. Wipes to be used upon arrival. Refer to procedure assessment

## Post-operatively
1. Allopurinol
2. Adequate pain control
3. Antibiotics
4. Able to tolerate diet (clear fluids to regular diet)
5. Incision intact, no drainage, dry and intact

## Discharge: Within 24 hours post-op
1. Allopurinol
2. Adequate pain control
3. Antibiotics
4. Able to tolerate diet
5. Incision dry and intact
6. Child caregiver teaching

### Goals
- Obtain history
- Complete physical exam
- Assess vital signs
- Complete pain assessment (refer to Pain Assessment Guidelines)
- Obtain accurate in and out

### Physical Exam
- Ensure that patient is NPO
- Administer O2SO and 0.9% NaCl with 20mm Hg O2 at maintenance
- Blood as indicated
- Refer to Fluid and Electrolyte Guidelines

### New RVU
- Colitisacme/Monatilazida IV, if allergy then Clarithromycin or Ciprofloxacin & Metronidazole. Refer to the e-formulary
- Pain medication as needed, morphine acetaamlphen NDAIDs. Refer to the e-formulary

### Medication
- Activity as tolerated
- Consent for surgery
- Pre-approvals for child and caregiver
- Review parental involvement in care (pre and post-operatively)

### Diet
- Advance diet as tolerated

### Pain
- Acetaminophen and ibuprofen (if not contraindicated) for 48 hours then as needed
- Review need for pain management

### Inclusion criteria:
- Leaves stent/strip until fall off or re-occlusion after 10 days
- Once stent/strip removed, may wash incision gently with soap and water

### Signs and symptoms of wound infection:
- Fever
- Redness around incision
- Drainage from incision
- Increasing pain around incision

### Follow-up:
- May shower or bath, 48 hours after surgery
- Activity:
  - Ambulate in hallways
  - May return to normal daily activities as patient feels able

- Confirm need for follow-up with Primary Surgeon
- Family doctor/physician in 1-2 weeks

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Inpatient Perforated Appendicitis Care Pathway

DAY OF ADMISSION
1. Hydration maintenance
2. Adequate pain control
3. Patient prepared for OR if surgical management required

DAY # 1
1. Analgesia
2. Adequate pain control
3. Ambulating
4. Able to tolerate clear liquids (immediately post-op)
5. Increase intake, no drainage, dry and intact
6. If Nasogastric Tube present, advance from intermittent suction to straight drainage

DAY # 2 - # 3
1. Analgesia
2. Adequate pain control
3. Ambulating
4. Able to tolerate regular diet
5. Incision dry and intact
6. Child and family understand discharge teaching
7. Able to tolerate oral antibiotics

DAY # 4
1. Analgesia
2. Adequate pain control
3. Ambulating
4. Able to tolerate regular diet
5. Incision dry and intact
6. Child and family understand discharge teaching
7. Able to tolerate oral antibiotics

DAY # 5
1. Analgesia
2. Adequate pain control
3. Ambulating
4. Able to tolerate regular diet
5. Incision dry and intact
6. Child and family understand discharge teaching
7. Able to tolerate oral antibiotics

Related Documents
- E-formulary
- Sepsis Pathway
- Pain Management Guidelines
- Pain Assessment Guidelines
- Fluid & Electrolyte Guidelines

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References


6. Children’s Hospital of Philadelphia: Appendicitis without Known GI Disease Clinical Pathway - Emergency

7. Children’s Hospital of Philadelphia: Appendicitis Clinical Pathway - Inpatients

8. Cincinnati Children’s Hospital: Emergency Appendectomy Clinical Pathway


28. University Hospitals of Cleveland: Pediatric Appendicitis/Simple Laparoscopic/Open Technique Care Path


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Attachments:
appendicitis algorithm.docx
appendicitis algorithm.pdf
Non perforated appy pathway.pdf
Non perforated appy pathway.rtf
Perforated appy pathway.pdf
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