

Suspected Appendicitis Care Guideline

Postoperative Management – p. 2
Non-operative Management – p. 3

Inclusion Criteria: patients ≥ 2 years old with acute abdominal pain
Exclusion Criteria: history of trauma, previous abdominal surgery

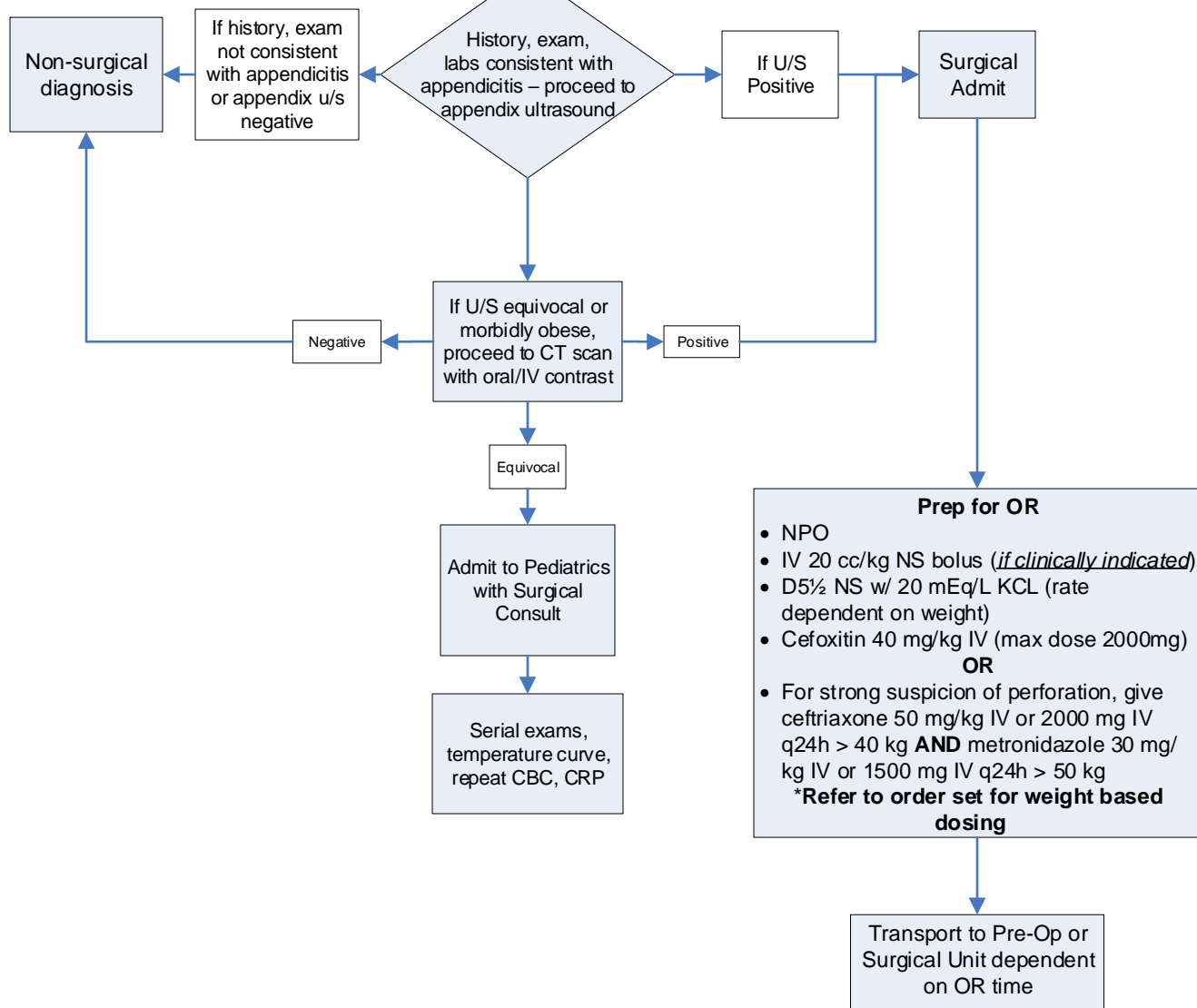
Assessment
History: Inquire specifically about onset & intensity of symptoms, anorexia, nausea/vomiting, diarrhea, migration of pain
Clinical examination: Guarding/rigidity, localized tenderness, presence of rebound, observe walking, note fever

Interventions

- CBC with differential, CRP, UA, HCG if > 10yrs and female
- NPO
- IV fluids/bolus for evidence of hypovolemia
- Morphine IV PRN pain – refer to order set for **weight based dosing**

Recommendations/ Considerations

- Appendicitis is the most common atraumatic surgical condition in children who present with abdominal pain
- Most common signs/symptoms in young children are periumbilical pain with migration to RLQ, anorexia, nausea/ emesis, guarding, cough/ percussion tenderness
- Laboratory findings commonly include, leukocytosis, bandemia, and elevated CRP.
- Evidence supports the use of narcotic analgesics in children with abdominal pain
- Consult ID if patient has beta lactam allergy.



Prep for OR

- NPO
- IV 20 cc/kg NS bolus (*if clinically indicated*)
- D5½ NS w/ 20 mEq/L KCL (rate dependent on weight)
- Cefoxitin 40 mg/kg IV (max dose 2000mg)

OR

- For strong suspicion of perforation, give ceftriaxone 50 mg/kg IV or 2000 mg IV q24h > 40 kg **AND** metronidazole 30 mg/kg IV or 1500 mg IV q24h > 50 kg
- *Refer to order set for weight based dosing

Appendectomy (Post-operative) Care Guideline

Inclusion Criteria: Postoperative laparoscopic or open appendectomy patients, Interval/delayed appendectomy for perforated appendicitis
Exclusion criteria: Incidental appendectomy

Postoperative – All Patients

- Vital signs q 1 hr x 2, then q 4 hrs, strict I/O
- OOB/ambulate QID; begin today
- IVFs-D5NS + KCL 20 mEq/L
- Incentive spirometry q 1 hr x 24 hrs, then q 6 hrs while awake
- Medications – Refer to order set(s) for weight based dosing:
 - Morphine IV PRN pain
 - Ketorolac IV PRN pain/fever
 - Acetaminophen PO/IV PRN pain/fever
 - Ondansetron PRN nausea/vomiting

Recommendations/Considerations

- Central line care should be performed per CHOC Policy Manager (see Patient Care Policy F832)
- Pain Assessment and Management (see Patient Care Policy F918)
- Consider ID consult for complicated cultures and beta lactam allergy

Uncomplicated Appendicitis (acute inflammatory or suppurative) or Normal Appendix

Complicated Appendicitis (perforated or gangrenous)

Patient/Family Education

- CVAD and/or drain care, if going home with PICC and drain – HELPS Class
- Appendicitis/Appendectomy Handout
- Over-the-counter Pain Medication for Home Handout
- Over-the-counter Constipation Medication for Home Handout

Discharge Criteria

- Afebrile x 48 hours
- Ambulating/baseline activity
- Pain controlled with oral medications
- Tolerating regular diet
- Abdominal exam reassuring
- Stooling or passing gas
- Family comfortable with DC
- If postoperative intra abdominal abscess:
 - CBC and CRP improving
 - Home health arranged for PICC and drain if indicated.

- Clear liquid diet when awake, then regular diet as tolerated
- May not require postoperative antibiotics, however, if ordered, administer x 2 doses
- Saline lock IV when taking adequate fluids

- Ceftriaxone 50 mg/kg IV q24h or 2000 mg IV q24 hr >40 kg
- Metronidazole 30 mg/kg IV q24h or 1500 mg IV q24h > 50 kg
- Consider Zosyn for severe infection
- *Refer to order set(s) for weight based dosing.
- If NGT - to low intermittent suction: document amount & color of output
- If JP drain - to bulb suction: document amount & color of output

- With return of bowel function (and removal of NG tube), ok to start clears and advance as tolerated/ ordered to goal of regular diet

Same Day Discharge Criteria met

POD 1 Discharge Criteria met

POD 2-5

- Discharge if criteria met
- Home with oral antibiotics for total IV+PO = 7 days antibiotics
- Augmentin 45mg/kg divided BID or
- Cipro/Flagyl based on cultures PO 30mg/kg per day divided BID; PO 30mg/kg per day divided TID

POD 5-7

- If hasn't met DC criteria/not improving obtain CBC, CRP.
- Consider CT scan abdomen/pelvis w/oral and IV contrast to assess for postoperative intra-abdominal abscess on POD 7

Discharge home without oral antibiotics

+ intra-abdominal abscess

- If drainable abscess → percutaneous drainage & culture of abscess by interventional radiologist and consider concomitant PICC placement in IR.
- ID Consult
- If no drainable abscess consider PICC placement with PICC team

Tailor antibiotic coverage per culture results/clinically for home administration

DC with antibiotics for total = 14 days from drainage or based on ID recommendation

Non-Operative Management of Perforated Appendicitis Care Guideline

Inclusion Criteria: patients ≥ 2 years old with:

- Symptoms ≥ 5 days
- CT confirmed appendicitis with significant inflammation +/- abscess

Interventions

- If drainable abscess on CT scan - percutaneous drainage and culture of abscess by Interventional Radiology
- Consider PICC line placement if no drainable abscess
- IV D5½ NS + KCL 20 mEq/L
- After intervention (IR drainage +/- PICC), assess readiness for diet
- ***Refer to order set(s) for weight based dosing:**
 - Morphine IV PRN pain
 - Ketorolac IV PRN pain/fever – hold until after IR drainage
 - Acetaminophen PO/IV PRN pain/fever
 - Zofran IV PRN nausea

Antibiotics

- Ceftriaxone 50 mg/kg IV q24h or 2000 mg IV q24h > 40 kg
AND
- Metronidazole 30 mg/kg IV q24h or 1500 mg IV q24h > 50 kg
- Consider Zosyn for severe infection or abscess that is not drainable.
- ***Refer to order set for weight based dosing**
- Adjust antibiotics based on cultures. See continued considerations below.

Continued Considerations

- CBC and CRP on hospital day 5 and/or prior to discharge
- Consider follow up imaging hospital day 7 if not meeting d/c criteria
- If uncontrolled sepsis or bowel obstruction develops, consider proceeding to appendectomy
- If a drain was placed, assess for removal prior to discharge
- If d/c home with IV abx with PICC, change antibiotics to single agent home regimen before discharge, if cultures allow. Give a minimum of one dose inpatient.
- Consider transition to oral antibiotics, based on culture if patient had drainable abscess. If not drainable abscess, consider ID consult.

Recommendations/ Considerations

- There are no randomized trials comparing different antibiotic regimens for the nonoperative treatment of perforated appendicitis in children. The Surgical Infection Society recommends either multi-drug therapy or monotherapy as long as adequate Gram-negative and anaerobic coverage is provided.
- Consult ID if patient has beta lactam allergy.
- Central line care should be performed per CHOC Policy Manager (see Patient Care Policy F832)
- Pain Assessment and Management (see Patient Care Policy F918)

Parent/Patient Education

- CVAD care – HELPS Class
- Drain Care Handout
- Return Precautions Handout
- Non-Operative Appendicitis Handout

Discharge Criteria

- Afebrile x 48 hours
- Tolerating regular diet
- CRP and WBC trending down
- Ambulating – baseline activity
- Pain well controlled with oral meds
- Stooling or passing gas
- Arrange Home Care for PICC with: RN visits, meds, supplies, labs and/or drain care, if needed

References

Appendicitis Care Guideline

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