Pediatric Intussusception Clinical Pathway

September 2021

Outcomes/Goals	1. Create an efficient team-oriented approach for patients with intussusception 2. Define roles for ED and surgery services and streamline disposition of these patients
Inclusion Criteria	1. Patients aged < 20 years with ***confirmed*** intussusception
Exclusion Criteria	1. Patients with abdominal pain from an alternative etiology 2. Hemodynamically Unstable
NURSE Documentation	Chief Complaint. Onset of Symptoms. Mental status—fussiness or lethargy? Hydration and Nutrition Status, as well as last PO, number of wet diapers. Bloody stools? Capillary Refill. Vital Signs. Pain level. Recent illness. Medications, allergies, height and weight per Peds ED NPEOC.
INTERVENTIONS	ESI II Place on continuous cardiac and pulse ox monitor and obtain a full set of vital signs, including a blood pressure to evaluate for hypovolemic shock Insert and maintain peripheral IV Give NS fluid bolus if signs or symptoms of dehydration or hypovolemia and/or confirmed diagnosis of intussusception on ultrasound Consider Zofran 0.15mg/kg for nausea/vomiting Consider IN Midazolam prior to air contrast enema Peds ED RN to transport patient to Radiology with patient on cardiac monitor and to bring: blood pressure cuff, pulse ox, fluid bolus, oxygen delivery apparatus
DIAGNOSTICS	CMP; if concerned for blood loss, CBC, Type and Screen Plain radiograph if any concern for perforation and evaluate for alternative diagnoses Ultrasound (abdomen complete) to establish diagnosis of intussusception; **if OUTSIDE US demonstrates intussusception, *repeat should be obtained to confirm***
PHYSICIAN (LIP)	
Documentation	Assess, document pain Evaluate for signs of peritonitis/perforation Last oral intake Maintain NPO Allergies to any medication
Fluids **Bolus**	Give NS 20 mL/kg bolus if signs or symptoms of dehydration, hypovolemia, and/or confirmed diagnosis of intussusception on ultrasound
Medication **Pain and Anxiolysis**	IN/IV Fentanyl 1 mcg/kg if painful while in the emergency department IN Versed 0.3-0.4 mg/kg, prior to leaving emergency department for air contrast enema **OR** IV Versed 0.05-0.1 mg/kg, prior to leaving emergency department for air contrast enema
THERAPEUTIC INTERVENTION	**Air Contrast Enema**—*RN to accompany patient on cardiac monitor** *RN to monitor patient for: distress, vital sign and mental status changes, call for emergency help, be family support*
DISPOSITION	

	4-HOUR ED OBSERVATION:
	• Intussusception easily reduced by air contrast enema
	• Well appearing with stable vital signs
	ADMIT TO PEDS SURGERY:
	• Presence of:
	  ○ Fever
	  ○ Bloody stool
	  ○ Lethargy
	• Unreliable access to care or family lives remotely
	• Due to ED volume, cannot accommodate observation patient

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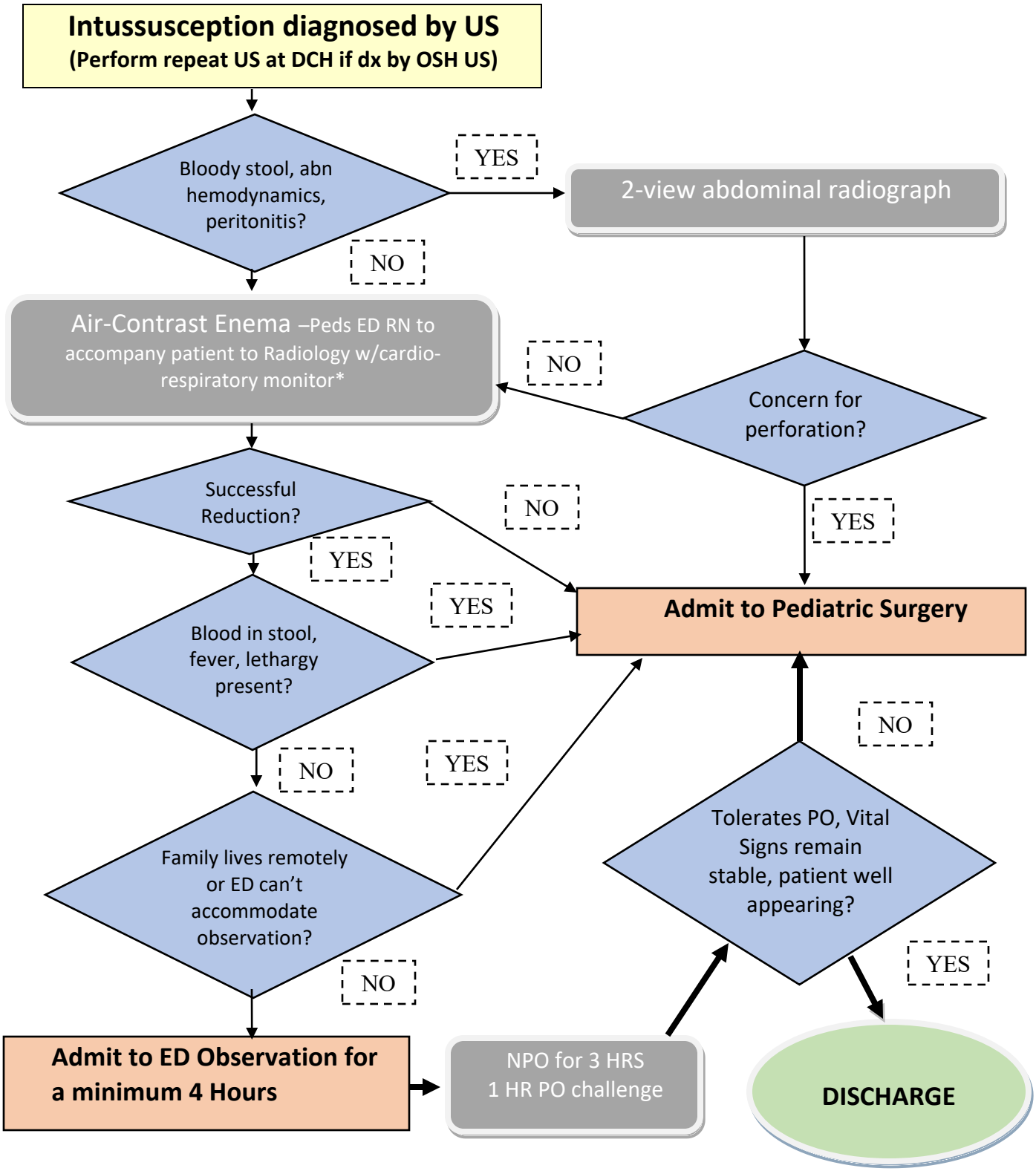


**The Peds ED RN will accompany the patient, if able (as determined by the Peds ED Charge RN). The Peds ED Charge RN will resource additional staff pools to assist: (possible order of escalation)*

1. *Call adult ED charge and request assistance in department to cover Peds ED RN's patients while at procedure*
2. *Call Comm Center and see if PANDA is available to help with departmental tasks*
3. *Call Peds RRT RN to see if available to help with departmental tasks*
4. *No available staffing and not scheduled for admit, call AOD to help problem solve and assist with additional resources.*

Intussusception Rationale and Data

Goals of Clinical Pathway

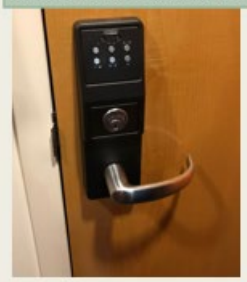
1. Create an efficient team-oriented approach for patients with intussusception
2. Define roles for ED and surgery services and streamline disposition of these patients

Data Considerations	Interventions	Rationale
Diagnostic Imaging	Abdominal ultrasound, 2 view abdominal radiograph	Ultrasound is the test of choice to diagnose intussusception, with sensitivity and specificity approximating 100% with experienced sonographers and a NPV of close to 100%. Intussusception identified outside of the RLQ or lesion size < or = to 3 cm suggest ileoileal intussusception. While plain radiography is clearly inferior to US for the diagnosis of intussusception, abdominal X-rays should be obtained if there is any concern for perforation (e.g. patient persistently tachycardic, blood in stool, peritoneal signs, etc.).
Therapy	Air contrast enema vs Surgical reduction	Air-contrast enema is the most widely used method for non-operative reduction of ileocolic intussusception. The procedure has an excellent safety profile and a low-complication rate. It should NOT be attempted in patients who have evidence of perforation or who are acutely ill with unstable hemodynamics. <u>*Exclusion Criteria*</u>: **-Absolute:** peritonitis and/or instability during 1st attempt OR -**2 of the following 3**: elevated WBC, high fever, length of symptoms >72 hours
Patient disposition	ED Observation vs Inpatient Admission	After successful enema reduction, intussusception recurs in only about 10% of patients. Of these, the minority recur within 48 hours. Thus, the practice of standardly admitting for 24 hours of observation may not optimally utilize resources. Multiple institutions have adopted clinical pathways wherein a subset of patients are observed in the ED for several hours and discharged if they tolerate PO and remain hemodynamically normal. These protocols have reduced overall length of stay and health care costs in this cohort without significant safety events. **Patients should be observed for a minimum of 4 hours in the PED and discharge if:** -Live close to the hospital -Parental Reliability -VSS, afebrile -Normal Physical exam and tolerating po diet -No pain -Idiopathic **Patients should be admitted to the hospital when:** -Ill-appearing and/or persistent symptoms of pain and vomiting -High WBC and/or Fever -Live remotely or without access to care -Ongoing rectal bleeding -Lead point found -Incomplete reduction or unable to reduce -Peds ED without capacity to observe patients

Intussusception: DCH 7th Floor Radiology

- It takes about 7-10 minutes to get from the department to DCH 7th floor radiology...let them know when you plan to arrive so they can be ready!
- BRING WITH YOU: Monitor, BP Cuff, IV fluids, BVM

If the door to radiology is locked the code is 1379



Airway supplies in the Sub Room are under the suction equipment

Code cart with AED is in the hallway between the elevator and Radiology

Intussusception emergency kit is in the cupboard in the space room.

Airway supplies in the Space Room are in the cupboard on the left

References:
*Stein-Wexler R, O'Connor R, Daldrup-Link H, Wootton-Gorges SL. Current methods for reducing intussusception: survey results. Pediatr Radiol. 2015;45(5):667. Epub 2014 Nov 29.
*Sujka J. Emergency department discharge following successful radiologic reduction of ileocolic intussusception in children: A protocol based prospective observational study. Journal of Pediatric Surgery, In press (Accepted August 2018)
*Mallicote M, et al. Hospital admission unnecessary for successful uncomplicated radiographic reduction of pediatric intussusception. Am Jour of Surg, December 2017
*Raval MV, et al. Improving Quality and Efficiency for Intussusception Management After Successful Enema Reduction. Pediatrics, November 2015, Volume 136 / Issue 5
*Burns R. Improving high-value care of ileocolic intussusception in a pediatric ED. ACS quality and safety case studies, March 2018