Transient Jejunojejunal Intussusception in an Adolescent Patient

Chickajajur S. Vijay, MD
Charles B. Chen, MD
Department of Pediatrics, West Virginia University School of Medicine

Corresponding Author: Chickajajur Vijay, MD, PO Box 9214, Department of Pediatrics, Section of General Pediatrics, WVU, Morgantown, WV 26506-9214. Email: VICHICKAJAJUR@hsc.wvu.edu.

Abstract

Transient intussusception is a rare condition and often presents a unique diagnostic challenge to healthcare providers. Although intussusception is generally a disease of infancy, it has been described in older individuals as well, where it may often present with an array of non-specific gastrointestinal symptoms. Diagnosis may often require imaging and laparoscopy. We present an unusual case of an adolescent male who was admitted to our facility with symptoms of an acute abdomen and was eventually diagnosed with transient small bowel intussusception.

Introduction

Intussusception is a gastrointestinal condition that is most frequently seen in infants, and is rarely described in adolescents and adults. The peak age for this condition is between 5 to 10 months of age, and most cases present before the first year of life. The incidence is less than 100 cases out of every 100,000 births.1,2 On the other hand, the incidence of intussusception in adults is much lower. While the exact incidence is unknown, estimates are that it represents only about 5% of intussusions.3

The presentation of intussusception in adolescents and adults is often far less consistent than in infants.4 Although infants may have the more classic symptoms of colicky abdominal pain and bloody stools, older individuals may present with more non-specific symptoms including episodic abdominal pain, nausea, and vomiting.5,6 In some cases, patients may also present with signs of an acute abdomen. This variability may present a significant diagnostic challenge for healthcare providers and may lead to delays in treatment. Therefore, the diagnostic approach may require a more extensive workup in older individuals, including additional imaging or even surgical exploration. Although there is a broad differential for abdominal pain in older pediatric patients, it is still important to consider intussusception.

Case Presentation

A 16-year-old male with a history of gastroesophageal reflux disease, appendectomy, and Type I diabetes was transferred to our facility with a one-day history of crampy, left upper quadrant abdominal pain, and non-bloody vomiting. He reported that he had an episode of emesis one week prior to hospital presentation, but otherwise had been asymptomatic until the previous day. He initially noticed the abdominal pain while attending gym class in the morning, but did not experience any nausea or vomiting until later that evening. He had one episode of diarrhea, but he denied any fever, bloody stools, or any other symptoms. At the outside facility, laboratory evaluation showed an initial lactate of 2.3 (reference range 0.5-2.2 mmol/L). Computed tomography (CT) scan of the abdomen and pelvis was performed and showed jejuno-jejunal intussusception in the left upper quadrant. He was transferred to our facility for higher level of care.

Figure 1. Abdominal ultrasound showing intussusception in the left upper quadrant.
On admission to our facility, he was alert and appeared to be in no acute distress. His vitals were within normal limits. On physical examination, his abdomen was soft, and he had audible bowel sounds in all quadrants and no palpable masses. However, he did have diffuse abdominal tenderness that was most severe in the left upper quadrant. The rest of his examination was unremarkable. Complete blood count, electrolytes, liver function tests, amylase, lipase, and urine studies were all unremarkable. An abdominal ultrasound was performed which showed a persistent left upper quadrant small bowel intussusception. He was evaluated by Pediatric Surgery and subsequently underwent a diagnostic laparoscopy, which showed hyperemic bowel with mild fluid-filled distension of the small bowel and mesenteric adenopathy. There were no signs of intussusception. No adhesions or hernias were found, and his stomach, liver, gallbladder, and spleen all appeared normal. He did well after his surgery, and his abdominal pain, vomiting, and diarrhea all improved and eventually resolved during his hospital stay. He had no recurrences of these symptoms following hospital discharge.

**Discussion**

Intussusception occurs when one segment of the bowel telescopes into an adjoining section of bowel. It is thought that any lesion or phenomenon that disrupts normal peristaltic activity may increase the risk of invagination that leads to intussusception. This may lead to bowel ischemia and obstruction, among other complications.

Although it is classically a disease of infancy, it can present in many age groups. Intussusception generally is named based on their locations: entero-enteric, colo-colic, ileo-colic, and ileo-cecal. Our case is unique for three main reasons: the age of the patient, the location of the intussusception, and the finding of a transient intussusception. Only about 10% of cases of intussusception occur in children over five years of age, and as few as 3 to 4% occur in children over the age of ten years. Additionally, while ileocolic intussusception is the most common type overall, small bowel intussusceptions occur much less frequently. Nevertheless, small bowel intussusceptions represent a large percentage of intussusceptions in older children as well as adults. Finally, the presentation of a transient intussusception is a rare entity that has only been reported a few times in the literature.

One major difference is that while most cases of intussusception in young children are idiopathic, intussusception in older children and adults usually have an identifiable lead point. This can be due to numerous causes and may be benign or malignant. Lead points occur in a small percentage of children with intussusception, however their occurrence increases with age. Common causes of lead points in children include Meckel’s diverticulum and polyps. Lead points in adults are frequently secondary to pathologic causes, with up to 65% of cases being due to neoplasm. In older adults, it is rare to have an idiopathic intussusception, however their occurrence increases with age. Common causes of lead points in children include Meckel’s diverticulum and polyps. Lead points in adults are frequently secondary to pathologic causes, with up to 65% of cases being due to neoplasm.

Although our patient did have a history of appendectomy, no adhesions were found on laparoscopy and he did not have any other known identifiable cause of his intussusception. In comparison to pediatric patients, adults required surgical management of intussusception much more frequently. In pediatric patients, up to 80% of cases of intussusception were reduced non-operatively, using pneumatic or hydrostatic reduction. However, radiologic decompression is generally not performed in adults, and surgery is preferred due to the high incidence of associated malignancy. Some studies advocate for manual reduction of the intussusception, followed by surgical resection, while

![Figure 2. CT scan showing intussusception.](image)
others recommend primary resection without attempting reduction. Transient intussusception represents a condition where there is telescoping of adjacent sections of bowel followed by a spontaneous reduction. The diagnosis may be difficult, as patients may have a wide range of symptoms and the condition may be diagnosed incidentally. Both the mechanism as well as the etiology of transient intussusception is largely unknown. However, it is thought that risk factors for the development of transient intussusception include abnormal motility and adhesions. In addition, there have been reports of transient intussusception being associated with celiac disease and Crohn’s disease in adults.

While contrast enema is the gold standard for the diagnosis of intussusception, it is not frequently used as the initial study. Instead, ultrasound and abdominal CT scans are generally performed first. The classic finding is a “target” sign on ultrasound and a target mass with surrounding eccentric fat density (due to invaginated mesentry) on CT. Ultrasound is particularly effective, with a sensitivity of 98-100% and a specificity of 88-100%. A number of radiographic differences have been noted between transient and persistent (or surgically corrected) intussusception. One study showed that the diameter of the intussuscepted bowel segment was smaller in transient small bowel intussusceptions compared to surgically reduced small bowel intussusceptions. Additionally, transient intussusceptions tended to have less free fluid and absence of a lead point compared to surgically reduced intussusceptions. Findings on CT may also be used to distinguish transient from persistent intussusception. One study noted that proximal small-bowel intussusceptions that were less than 3.5 cm in length without any signs of obstruction or a lead point in an otherwise asymptomatic patient were likely to be transient in nature. On the other hand, intussusceptions that were greater than 3.5 cm in length were more concerning for persistent intussusception and warranted radiological follow-up. There is also evidence to suggest that serial CT examinations may be performed to monitor for resolution of transient intussusception. These radiographic findings may help the clinician decide whether to move forward with surgical exploration. Deciding whether to pursue surgical exploration or to monitor for spontaneous reduction may often present a dilemma. Clinical deterioration, signs of bowel obstruction, or gastrointestinal bleeding will often necessitate surgical exploration. However, asymptomatic or clinically stable patients may often be monitored clinically and have serial imaging performed to assess for spontaneous reduction. Nevertheless, many patients may still undergo diagnostic laparoscopy to assess whether they have a transient or a persistent intussusception, as well as to look for associated lead points.

**Conclusion**

Transient intussusception is often difficult to diagnose, and having a strong clinical suspicion may lead to early diagnosis and intervention. This condition should be kept in the differential diagnosis for patients presenting with nonspecific gastroenterological symptoms regardless of age. Transient intussusception is likely under-recognized and under-diagnosed, which may
change with the increased use of radiological imaging. Both ultrasound and abdominal CT are sensitive modalities for detection. As many cases of intussusception in adolescents and adults are associated with other conditions, a full diagnostic workup and possible surgical exploration may be needed. Although surgical exploration is often warranted in symptomatic patients, it remains controversial in the management of transient intussusception in asymptomatic or minimally symptomatic patients.18

References