Acute Abdominal Pain In Children: Is It Intussusception?

Jarrod Wall, 5th Year Medicine

INTRODUCTION

The challenge of childhood abdominal pain is to treat the majority of children with self-limiting, less serious conditions, as well as identify the child with the rare, life-threatening cause of pain. Abdominal pain is extremely common and almost all children under 15 years experience it at some time. Primary care physicians manage the vast majority of cases, however some children are sufficiently ill to require hospital admission.

Common causes of abdominal pain

Abdominal pain in childhood presents a narrower range of diagnostic possibilities than the same presenting complaint in adults. Causes other than acute non-specific abdominal pain (ANSAP) and acute appendicitis are rare.

ANSAP 51%
Appendicitis 31%
Normal appendix removed 6%
(it is suggested that this group should be added to ANSAP figures)
Others 12-18%

While it must be conceded that intussusception is a rare cause of abdominal pain, the high morbidity and significant mortality associated means it is a diagnosis that cannot be missed. The aim of this discussion is to examine the clinical predictors of, and the diagnosis of intussusception.

Is it intussusception?

Intussusception is defined as the invagination of a segment of bowel (the intussusceptum) into the adjacent distal segment of bowel (the intussiciens) (Figure 1). The movement of bowel is via peristalsis.

Physicians of great standing have been associated with both the diagnosis and management of intussusception. The first person to accurately describe the pathogenesis of intussusception was John Hunter in 1793. But long before him, Hippocrates (490 BC) advocated the treatment of ‘ileus’ to consist of “connecting a bellows to the anus and inflating the bowel with air”. Hirschsprung in 1876 was the first to use hydrostatic reduction of intussusception, and he later published an article in which he described 107 patients successfully treated in such a manner.

Pathogenesis

As a consequence of the invagination, there is compression of the mesenteric veins and if this is allowed to progress, arterial obstruction, bowel necrosis, perforation and rarely death due to shock may ensue.

More than 80% of intussusceptions are ileocecal. The alternative sites, ileoileal, colocolic and jejunojejunal are progressively less common.

Epidemiology

Intussusception commonly occurs within the first 12 months of life, with a peak incidence at 8 months of age. Males are more likely to suffer intussusception than females with a ratio of 2.2:1.

Aetiology

In the vast majority of cases (approximately 90%), there is no obvious cause of intussusception. However, in many there may be associated hypertrophy of mesenteric lymphoid tissue (Peyer’s Patches) that can be dragged through the ileo-caecal valve into the caecum. Of the 10% of cases with an identifiable lead point, a Meckel’s diverticulum, polyps or tumours (eg. lymphoma) are the most commonly associated. Post-operative intussusception accounts for only 1-2% of cases.

PRESENTATION

It may be difficult to distinguish intussusception from other less serious causes of abdominal pain. The typical presentation involves an originally healthy child less than 12 months old, with acute onset colicky abdominal pain. Screaming, drawing their knees up and flexing at the waist accompany the pain. The pain typically lasts several minutes and episodes occur 3 to 4 times every hour. Between the attacks, the infant is calm or lethargic, and often flushed.

Vomiting is a common feature of intussusception, consisting initially of undigested food but later becoming bilious. The child’s bowel habit initially is normal but becomes dark red and mucoid; this is the classical ‘red currant jelly’ appearance described in intussusception. The blood in the stool may be gross or microscopic (occult) but it is uncommon for haemorrhage to be ongoing. Interestingly, the classical triad of abdominal pain, vomiting and red currant jelly stool is only present in approximately 10-20% of cases. The absence of a history or examination evidence of rectal bleeding does not exclude the diagnosis, as one study found that 26% of cases of intussusception do not have rec-
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Clinical Feature | PPV % | P value
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Blood on rectal examination | 78 | 0.01
Gross blood in the stool | 80 | 0.014
Right upper quadrant mass | 94 | 0.0001
Triad of colicky abdominal pain+vomiting+RUQ mass | 93 | <0.0001
Abdominal pain+vomiting+RUQ mass+blood in stool | 100 | Not significant

(PPV is positive predictive value)

Figure 2: Ultrasound findings indicative of intussusception: the pseudokidney sign (left) and target sign (right)
CONCLUSION

The diagnosis of intussusception is very important since it may mimic many less serious causes of acute abdominal pain. However, the rapidity with which intussusception can become life threatening in children means it must always be considered and excluded. Improvements in non-invasive imaging techniques and greater experience in image interpretation will lead to more efficient diagnosis. However, it must be emphasised that presently, a high index of suspicion and good clinical skills are required to efficiently detect and thereby reduce intussusception associated morbidity and mortality.

REFERENCES