



# Multiple Ileo-ileal Intussusceptions in a 3-Year-Old Child

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## ABSTRACT

Intussusception is the most common intestinal obstruction among infants and young children. Most of the pediatric cases are ileocecal. Isolated small bowel intussusception accounts for fewer than 10% of all pediatric cases. We reported a previously healthy 3-year-old child who presented with multiple ileo-ileal intussusceptions. Preoperatively, diagnosis made by ultrasonography. During surgery, edematous and dilated small bowel loops with four intussusceptions were found. Ileocecal junction was normal. Our experience shows that the rare entity of multiple intussusceptions with no obviously causative agent may present in pediatric patients.

**Key words:** Intussusception, children, multipl intussusception.

## INTRODUCTION

Intussusception is the invagination of one segment of the intestine within a more distal segment. It is the most common intestinal obstruction among infants and young children (1). In most infants, the intussusception involves the ileum invaginating through the ileocecal valve into the cecum (2). Most of the pediatric cases are ileocolic intussusceptions (3). Isolated small bowel intussusception accounts for fewer than 10% of all pediatric intussusceptions (4).

## CASE

A 3-year-old girl was presented with abdominal pain and malaise for three days. Based on her parent's statement, there was no vomiting or fever before or during this illness. Upon admission, the child was well looking.

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## Üç yaşındaki bir çocukta multipl ileo-ileal invaginasyon

## ÖZET

İnvaginasyon infant ve küçük çocuklar arasında en sık intestinal obstrüksiyon nedenidir. Olguların çoğunda ileo-çekal olarak görülür. İzole ince barsak tutulumu ise tüm pediatrik olguların %10'undan daha azını teşkil eder. Bu çalışmada multipl ileo-ileal invaginasyonu olan ve daha önce tamamen sağlıklı olan 3 yaşındaki bir hastayı sunuyoruz. Preoperatif tanı ultrasonografi ile konuldu. Cerrahi sırasında, ödemli ve dilate ince barsak segmentleri ile birlikte dört invaginasyon segmenti saptandı. İleo-çekal bileşke normaldi. Bulgularımız, çocuk hastalarda belirlenmiş bir etyolojik faktör olmadan multipl invaginasyonların nadir de olsa görülebileceğini ortaya koymaktadır.

**Anahtar kelimeler:** Intussusception, children, multipl intussusception.

The vital signs and conscious status were normal. Throat examination revealed pharyngeal hyperemia. There was mild tenderness in right abdomen. Rectal examination revealed typical red currant jelly stool. On laboratory investigation hemoglobin was 11.2 g/dl, leukocyte count was 12200/mm<sup>3</sup> and thrombocyte count was 157000/mm<sup>3</sup>. Biochemical analysis was normal. An abdominal radiograph showed little air in the abdomen. Abdominal ultrasonography (US) revealed an invaginated bowel segment for 2-3 cm with typical target sign in paraumbilical area. The US showed only one intussusception site and lacked to show the other sites. During surgery, edematous and dilated small bowel loops were found. Ileocecal junction was normal. There was minimally ascites on the pelvic floor. At laparotomy, a total of five intussusception sites noted. The most distally located invaginated segment was 20 cm proximally to the ileocecal junction. The affected segments were not gangrenous. The first two segments

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which located proximally, have been reduced spontaneously. The former two ileoileal intussusceptions were reduced manually (Figure 1). No associated pathologic leading point, such as a foreign body, Meckel's diverticulum or polyp was found. Appendix and a few regional lymphadenopathies were resected, and pathological examination revealed acute inflammatory reaction in both specimens. Postoperatively, the patient was stable with no hematochezia or bloody stool. He began to eat 2 days after the operation, and no intestinal obstruction or hemorrhage was observed. One month after surgery esophagogastroduodenoscopy and colonoscopy revealed no pathology. Patient preferred to an pediatric gastroenterologist for regular examination for possible polyps.

## DISCUSSION

Intussusception is the leading cause of intestinal obstruction in childhood and patients may present with non-specific symptoms, only one-fourth presenting with the classic triad of vomiting, abdominal pain and bloody stools (5). In our case clinical course was not typical but early US examination revealed intussusceptions. It has been also reported that US is the most important imaging modality to evaluate children with abdominal pain and intussusceptions are commonly diagnosed sonographically in the pediatric population (6).

There are several types of isolated small bowel intussusceptions like ileo-ileal, jejunojejunal, jejuno-ileal and duodeno-jejunal types (5). We observed four ileo-ileal invaginated segments during laparotomy. However small bowel intussusception is not so common there have been previous reports describing multiple intussusceptions (3,5). The majority of intussusceptions in pediatric patients have a demonstrable causative lesion such as polyps, lipomas, Meckel diverticulum, intestinal duplication, Henoch-Schonlein purpura, lymphomas, hypertrophied Peyer patches secondary to infection, adenovirus infection, foreign bodies, parasitic infestations, celiac disease, and cystic fibrosis (7,8). To our knowledge multiple multiple small bowel intussusceptions in childhood reported with only these following conditions; Celiac disease, Peutz-Jeghers syndrome, segmentary lipomatosis, and Rapunzel syndrome (4,6,7,8). Etiological evaluation of our patient revealed no underlying cause. Namely, esophagogastroduodenoscopy and colonoscopy were both normal and screening tests for celiac disease were negative. The patient has also referred to pediatric gastro-

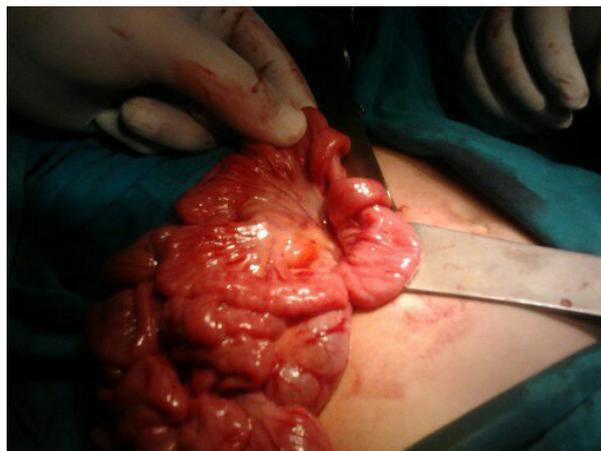


Figure 1. The former two ileoileal intussusceptions were reduced manually

enterology department for regular follow up. Because it has been speculated that there would be an association between intussusception and later celiac disease (9,10). However Ludvigsson et al. (10) could not find an association between intussusception and celiac disease before the time of diagnosis (undiagnosed CD), it has been postulated that the gluten enteropathy might be kept in mind during management period of intussusceptions in childhood. In addition they reported a two fold increased risk of intussusception after CD diagnosis but finally did not support CD screening in patients with intussusception (10).

In conclusion, our experience shows that the rare entity of multiple intussusceptions with no obviously causative agent may present in pediatric patients. We also want to emphasize the importance of ultrasonography in diagnosis of such conditions.

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