

# Post-surgical intestinal occlusion ileum-ileum double intussusception in eleven-month girl

*Oclusión intestinal por doble invaginación ileo-ileal posoperatoria en una niña de 11 meses de edad*

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## Abstract

**Background:** Post-operative intussusception is an unusual complication in children; the incidence is 0.01-0.25%.

**Clinical Case:** Female of 11 months who underwent colostomy, 48 h later presents abdominal pain, vomiting gastrobiliar, and abdominal distension. A laparotomy was performed, finding a double ileo-ileal invagination 60 cm from the ileocecal valve.

**Discussion:** The post-operative intestinal invaginations are extremely rare and most of them occur within the first 7 days. The etiology of post-operative intussusception is unknown. **Conclusions:** Post-operative children with intestinal occlusion, intussusception should be suspected, and an immediate laparotomy should be performed.

**Key words:** Post-surgical intussusception. Children. Intestinal occlusion.

## Resumen

**Antecedentes:** La invaginación posoperatoria es una complicación inusual en niños. Su incidencia es del 0.01-0.25%.

**Caso clínico:** Niña de 11 meses a quien se realizó colostomía y 48 horas después presentó dolor abdominal, vómito gastrobiliar y distensión abdominal. Se realizó laparotomía y se encontró una doble invaginación íleo-ileal a 60 cm de la válvula ileocecal. **Discusión:** Las invaginaciones intestinales posoperatorias son extremadamente raras y la mayoría se presentan dentro de los primeros 7 días. La etiología de la invaginación posoperatoria es desconocida. **Conclusiones:** En niños operados con oclusión intestinal debe sospecharse invaginación intestinal y realizar una laparotomía inmediata.

**Palabras clave:** Invaginación posoperatoria. Niños. Oclusión intestinal.

## Introduction

Post-operative intussusception is an unusual complication in children who have undergone several types of surgery. Early recognition is difficult due to its

rarity and atypical presentations<sup>1-3</sup>. The incidence of post-operative intussusception is 0.01-0.25% in children after laparotomy and it accounts for 5-10% of post-operative intestinal obstructions. In addition to its low incidence, the absence of the typical intussusception triad (colicky abdominal pain, abdominal mass, and bloody

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Date of reception: 02-08-2018

Date of acceptance: 19-08-2019

DOI: 10.24875/CIRUE.M20000099

Cir Cir (Eng). 2020;88(1):86-88

Contents available at PubMed

www.cirugiaycirujanos.com

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stools) and the presence of post-operative ileus hinder post-operative intussusception early recognition<sup>1-3</sup>.

We present the case of an 11-month-old girl who presented with intestinal occlusion due to double ileo-ileal intussusception 48 h after having undergone colostomy.

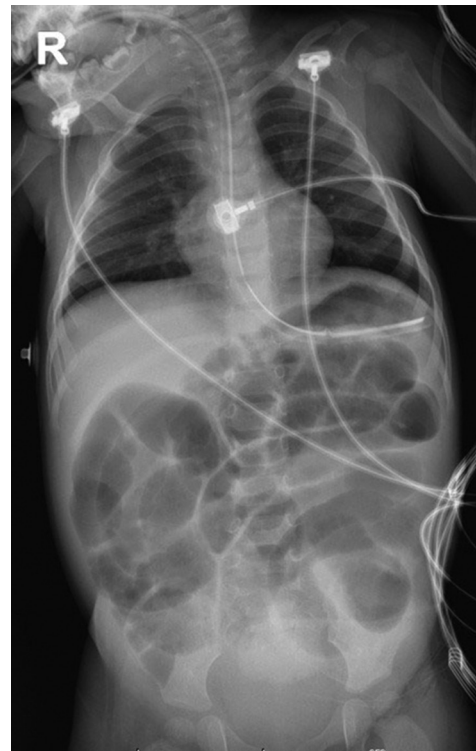
## Clinical case

Girl diagnosed with imperforate anus and rectoves-tibular fistula, initially managed with fistula dilations. At 11 months of age, she underwent double barrel colostomy at the level of the sigmoid. Due to a prolapse of the proximal colostomy stoma, she underwent surgery again the following day to correct the prolapse. At 24 h, the girl presented abdominal pain, vomiting of gastro-biliary content, and abdominal distension with a 4-cm increase in perimeter and absence of bowel movements. An abdominal plain X-ray showed significant dilation of the small bowel loops suggestive of intestinal occlusion (Fig. 1). Blood count reported leukocytes at 12,000 and C-reactive protein of 6.510 mg/dL. Exploratory laparotomy was decided, with the diagnosis of origin of intestinal occlusion to be determined. A double ileo-ileal intussusception was found as the cause, 60 cm from the ileocecal valve; thus, de-intussusception was carried out by taxis, without difficulty, with the intestine being found in good conditions, with no evidence of necrosis or perforation (Fig. 2). Post-operative evolution was satisfactory, without complications, and the patient was discharged 5 days later.

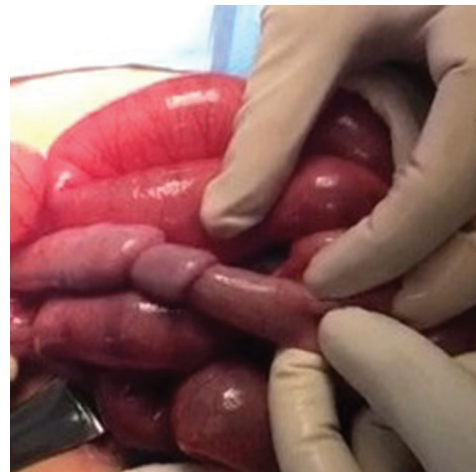
## Discussion

Post-operative intestinal intussusceptions are extremely rare and most occur within the first 7 days after the performance of a surgical procedure. The surgeries that are most commonly related to post-operative intestinal intussusception are gastrointestinal operations (51.2%), retroperitoneal tumor resection (20.5%), surgeries involving the diaphragm (9.4%), those of the urinary system (6.3%), pancreatectomy (3.9%), and other non-abdominal operations (8.7%)<sup>1-6</sup>.

Clinical manifestations of this condition are atypical, which is why it often receives insufficient attention. Once it occurs, it is rather difficult establishing a definitive preoperative diagnosis. Any delay in diagnosis and treatment can be life-threatening and have serious consequences, such as intestinal necrosis. Therefore, early diagnosis and surgical exploration are essential.



**Figure 1.** Abdominal plain X-ray showing small bowel loops significant dilation.



**Figure 2.** Double ileo-ileal intussusception at 60 cm from the ileo-cecal valve.

The main reported symptoms are bilious vomiting, abdominal distension, and abdominal pain, as well as absence of bowel movements<sup>1-6</sup>.

Unlike idiopathic intussusception, most post-operative intussusceptions can affect any age group; the age range goes from 1 week to 15 years, and average age is 5.1 years. Only three children were younger than 2 years; the rest were older than 3 years<sup>3,5</sup>. Almost always it affects the small intestine. In up to

85.6% of cases, intussusceptions are reported to be ileo-ileal, followed by jejunum-jejunal, with ileo-colic being very rare<sup>1,3,5</sup>.

Most intussusceptions are resolved by laparotomy and manual reduction. Only a small percentage (7.4%) requires resection and anastomosis<sup>1,2,4,5</sup>.

The etiology of post-operative intussusception is unknown. It is presumed to be caused by multiple factors, including surgical trauma, ileum edema, hypoxia, extensive exposure or prolonged manipulations of the intestine, neurogenic stimuli, anesthetic agents, chemotherapy or radiation, and others. Most authors refer a disparity in the resumption of intestinal peristalsis caused by surgical trauma, with possible local spasm or edema of the small intestine wall as a more plausible explanation<sup>2,4</sup>.

In any atypical postoperative ileus, an ultrasound study is recommended to rule out post-operative intussusception diagnosis, which was not carried out in our case given that the possibility of intestinal intussusception was not suspected. Once this condition is diagnosed, surgical treatment should be carried out as soon as possible<sup>2,4</sup>.

Laparotomy with manual reduction is the most commonly described treatment. Intestinal resection and anastomosis are rarely necessary<sup>2</sup>.

## Conclusions

Post-operative intussusception should be suspected in pediatric surgical patients showing signs of intestinal obstruction in the early post-operative period. In any atypical post-operative ileus or in the presence of clinical data consistent with intestinal occlusion, an ultrasound study is recommended to rule out postoperative intussusception. Immediate laparotomy is recommended to minimize morbidity and mortality of this surgical complication.

## Conflicts of interest

The authors declare that there are no conflicts of interest.

## Funding

The authors declare that no funding was obtained from any organization or institution to carry out this article.

## Ethical disclosure

**Protection of people and animals.** The authors declare that no experiments were performed on humans or animals for this research.

**Confidentiality of data.** The authors declare that they have followed the protocols of their work center on the publication of patient data.

**Right to privacy and informed consent.** The authors have obtained informed consent from the patients and/or subjects referred to in the article. This document is in the possession of the corresponding author.

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