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(CASE REPORT)

Intestinal intussusception in an Adult: Case report

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Abstract

Intestinal intussusception is a rare entity in which a segment of intestine (intussusceptum), contracted by a peristaltic wave, enters the immediately distal segment (intussuscipiens). Once trapped, the invaginated segment is propelled distally by peristalsis, dragging its mesentery behind it. Next, we present the case of a 41-year-old female patient who presented an intestinal intussusception, with clinical manifestations of an intestinal obstruction and underwent an exploratory laparotomy, where the diagnosis was made and a moderately adenocarcinoma-type colon lesion was resected. Differentiated, in the city of Barranquilla in 2016.

Keywords: Intestinal Intussusception; Intestinal Obstruction; Adults; Laparotomy

1. Introduction

The introduction of one segment of the intestine inside another due to the action of peristalsis, constitutes a very infrequent cause of intestinal obstruction in adults, it represents less than 5% of all intussusceptions, which are a typical pathology of the child, so it is a pathology of difficult diagnosis, which is important to consider despite its low frequency [1].

2. Clinical case

A 41-year-old female patient who presented with a clinical picture of 3 days of evolution characterized by crampy pain in the mesogastrium of intensity 8/10 on the analogous scale of pain radiating to the flanks, associated with countless emetic episodes, abdominal distension, abundant stools, apparent hematochezia, of variable consistency, which in the last 24 hours became null and negative flatus, for which consultation.

History, personal denied, pharmacological injectable contraceptives, and antispasmodics; gynecological: G4P1A3V1, 3 spontaneous abortions, all before 12 weeks; Surgical: 3 curettages, the last one in May 2016 and a laparoscopic cholecystectomy in May 2016; relatives: Maternal aunt died of colon cancer, maternal grandfather died of intestinal obstruction, paternal grandfather died of AMI. Within the systems review, he reported abdominal pain secondary to dairy intake that improved after bowel movements and episodes of constipation.

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2.1. Physical examination

BP: 110/70 millimeters of mercury, HR: 80 beats per minute, RR: 19 breaths per minute, T°: 37°C, SatO2: 99%, Fio2: 21%, Glasgow: 15/15. Semi-moist oral mucosa, on abdominal physical examination a distended abdomen was observed, painful on generalized palpation with predominance in the mesogastrium without signs of peritoneal irritation, no masses or megalies.

2.2. Paraclinical

Hemogram showed leukocytosis and neutrophilia, ionogram with moderate hypokalemia, in the series of acute abdomen (images 1, 2 and 3) great distention of intestinal loops, air-fluid levels, and a target image in the right hemiabdomen were observed; Ultrasound of the total abdomen showed a small amount of free fluid at the level of the hepatorenal space, the lesser pelvis, and at the perisplenic level, distention of the intestinal loops.

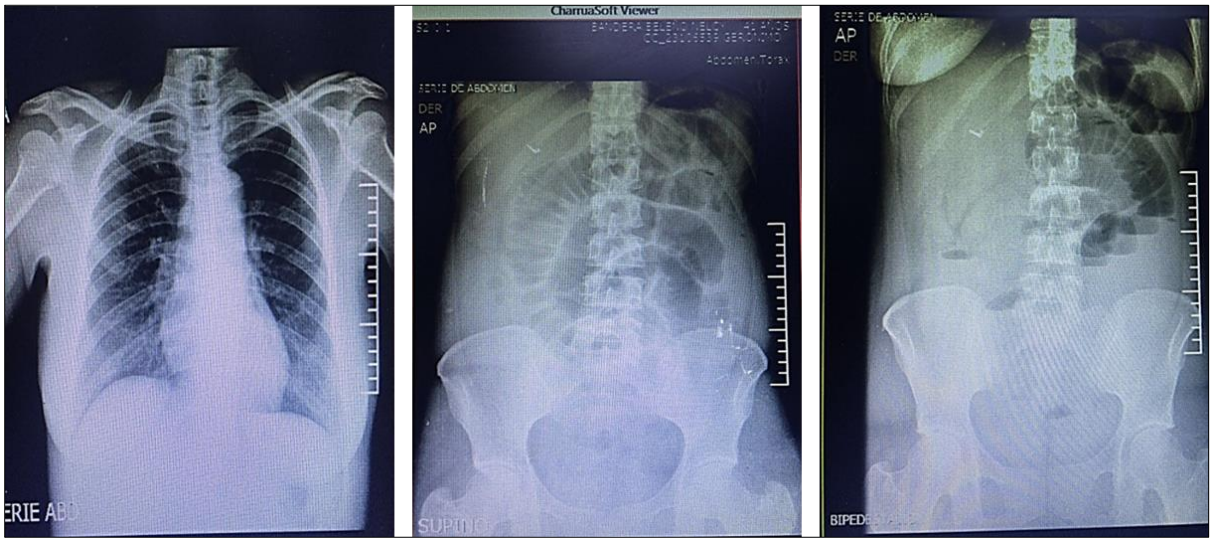

Figure 1, 2 and 3 Large distention of intestinal loops, air-fluid levels, and a target image in the right hemiabdomen are observed

It was decided to take the patient to the operating room to perform an exploratory laparotomy, finding the terminal ileum completely inserted up to approximately 2/4 of the right colon, edema and partial loss of vasculature of the right colon + edema of the meso-colon in the same area, Therefore, a right colectomy was performed with resection of up to 15 cm of the ileocecal valve, an ileotransverse anastomosis was performed with mechanical suture and a witness drain was left and the abdominal cavity was closed. She was transferred to the intensive care unit for 3 days for post-surgical care, under antibiotic therapy with Metronidazole and Ciprofloxacin, parenteral nutrition was started on the second day of stay in the ICU.

On the fourth day of stay in the intensive care unit, she was transferred to the hospitalization ward. On the ninth day, the oral route was started, which was tolerated by the patient, without leaking from the anastomosis evidenced by the witness drain, so she was withdrawn. With good clinical evolution, he was discharged on the 10th day of hospital stay.

The pathology report shows that it is a moderately differentiated ulcerated adenocarcinoma of the right colon with deep infiltration of all layers up to the muscle, proximal lymph nodes free of tumor involvement, proximal and distal surgical limits of resection free of neoplastic involvement [2].

3. Discussion

Intussusception is a rare entity in which a segment of intestine (intussusceptum), contracted by a peristaltic wave, enters the immediately distal segment (intussuscipiens). Once trapped, the invaginated segment is propelled distally by peristalsis, dragging its mesentery behind it. Occasionally, this leads to intestinal obstruction and, as a result of entrapment of the vessels, to infarction of the segment [3].

In children, it represents the main cause of intestinal obstruction, and the second cause of acute abdomen after acute appendicitis.

Intussusception is a rare cause of intestinal obstruction, accounting for 1% of all cases of obstruction and only 0.003% to 0.02% of all hospital admissions. Adult patients constitute only 5% of all cases of intussusception, with the remaining 95% occurring in pediatric patients [4].

There are no retrospective meta-analyses or multicenter prospective studies reported in the medical literature that evaluate the pathogenesis, diagnosis, or treatment of intussusception in adults, probably due to its low incidence in this population [5].

A few retrospective studies have been published, based on case series from isolated tertiary centers compiled over a period (58 cases occurring in 19 years at Massachusetts General Hospital: 27 cases in 9 years at Mount Sinai Medical Center and 9 cases in 5 years at the Changüí General Hospital in Singapore]. In contrast to the pediatric population, where intussusception is usually idiopathic or due to viral diseases, an organic lesion is generally identified as the cause of intussusception in adults in about 90% of cases [6]. These include malignant lesions, such as primary adenocarcinoma, metastatic melanoma, or lymphoma, or benign lesions, such as hamartoma, lipoma, Meckel's diverticulum, and postoperative adhesions, among others. Rare causes of intussusception in adults include endometriosis, drug-related lymphocytic enter colic phlebitis, and in patients with mesenteric lymphadenopathy due to systemic lupus erythematosus. (Table 1) There are reports of idiopathic intussusception without any identifiable pathological finding, which are responsible for very few cases (7.7%).

Table 1 Causes of intestinal intussusception in adults

Etiology
Benign pathologies
Peritoneal adhesions
Leiomyomas
Meckel's diverticulum
Mesenteric adenitis
Fibroids
Lipomas
Hamartomatous polyps
Adenomatous polyps
HIV
Crohn's disease
Trauma
Schonlein-Henoch purpura
Celiac Disease
Chronic diarrhea
Villous adenoma
Appendicular Pathology
Malignant pathologies
Metastasis (Melanoma, breast, lung)
Primary adenocarcinoma
Liposarcoma
Lymphomas
Leiomyosarcomas
Idiopathic

Intussusception can be classified on the basis of its location as enteric, ileocolic, ileocecal, or colonic. However, the majority (60%-81%) of intussusceptions in adults involve the small intestine [7].

Unlike pediatric patients with intussusception, who commonly present with a classic triad of abdominal pain, passage of marmalade-like stools, and a palpable sausage-like abdominal mass, the clinical presentation of adult intussusception is generally nonspecific, which makes it very difficult to differentiate from other causes of intestinal obstruction. Most patients will present with abdominal pain, nausea, vomiting, positive fecal occult blood, or even bloody diarrhea; a few will have a palpable abdominal mass (Table 2). However, only 32% of cases were correctly diagnosed based on clinical findings before surgery [8].

Table 2 Clinical manifestations

Clinic	**Percentage**
Intermittent abdominal pain	71
Nausea and vomiting	68
Abdominal distension	45
Hematochezia	25
Palpable mass	11-42
Diarrhoea	
Constipation Tenesmus	

In a single-center retrospective study, 46% of intussusception heads contained malignant lesions. Therefore, a routine reduction trial is not recommended due to the risk of dissemination/seeding of malignant cells, potential perforation of the intussuscepted intestine, and venous embolization through the ulcerated mucosal area [9].

Various diagnostic imaging methods have been described as useful.

Table 3 Diagnostic imaging methods

Ultrasound **98 - 100% sensitivity**	**Computed Tomography** **78-100% sensitivity**
Bullseye or rosette injury Hypoechoic ring (receptor loop) Hyperechoic ring (entering loop and compressed mesenteric fat)	Target sign Hyperdense outer layer (receptor loop) Hypodense layer (mesenteric fat) hyperdense center (entrant loop and head of invagination)
Image in pseudokidney	sausage shaped dough Alternating hypo- and hyperdense layers due to edema of the compromised intestine
When the direction of invagination is curved and the mesenteric fat mimics a kidney hilum crescent image It is the distinctive sonographic sign. Crescent of fatty tissue arranged between the incoming loop and the receiving loop.	Shapeless mass Mass effect observed in case of vascular compromise and severe edema.

Plain abdominal radiography may show signs of intestinal obstruction. Barium studies achieve preoperative diagnostic success in 21% to 77% in the upper intestine and 54% to 95% in the colon. The sonographic signs are the "doughnut", the "crescent moon" and the "pseudokidney". On CT, intussusception appears with three different patterns that reflect its severity and duration: "target shooting sign", "sausage-shaped mass" and "reniform mass" (Table 3). The presence of peritoneal fluid means ischemia and irreducibility in most patients. The presence of Doppler flow suggests that intussusception could be reduced, although reduction is not recommended in the literature [10].

4. Conclusion

Today it is known that definitive surgical resection is the recommended treatment in most cases. When it involves the small intestine, resection is recommended in the vast majority of cases, since one third of enteric intussusceptions are associated with malignant pathologies. When a malignant etiology is suspected, en bloc resection without prior reduction is indicated. In cases where the colon is affected, en bloc resection together with the lymphatic drainage territory without manipulation or reduction is indicated. This is due to the high association with malignant pathologies (40% to 77%), thus reducing the possibility of neoplastic dissemination.

In short, it is a very rare entity in adults. It can be located throughout the entire gastrointestinal tract. Signs and symptoms are nonspecific. The most frequent form of presentation is with a chronic picture of intestinal sub-occlusion. The most useful imaging studies are CT and ultrasound of the abdomen.

Benign pathology predominates in the small intestine, and malignant pathology in the colon. Treatment in the adult population, with few exceptions, is always surgical. In cases of small bowel intussusception, except in patients with evidence of malignant neoplasms or metastases, disinvagination is performed prior to resection. On the other hand, when it is located in the colon, an en bloc resection is performed.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare no conflicts of interest

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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