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Ileocolic Intussusception Related to Cecum Adenocarcinoma: Case Report

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ABSTRACT

Intestinal obstruction due to intussusception in adults is rare. We reported a case of an elderly woman, who consulted the hospital with the clinical manifestation of an intestinal obstruction. An abdominal and pelvic computed tomography showed an intestinal intussusception. Since the main cause of intussusception in adults is malignancies, surgery with oncological criteria was performed withen bloc resection of the area concerned. This article reportson a rare case of intestinal obstruction due to ileocolic intussusception and a review of the current evidence.

Key words: Intestinal obstruction, intussusception, adenocarcinoma

INTRODUCTION

Intestinal obstruction (IO) is a partial or total blockage of the normal flow of intestinal contents (1). Clinical manifestations include abdominal pain and distension, decrease or cessation of defecation frequency, vomiting and absence of gas elimination. Only 5% of the total causes of IO, in adults, are due to intestinal intussusception (2). Intestinal intussusception happens owing to the invagination of a segment of the gastrointestinal tract into the lumen of an adjacent segment. This generally occurs as a result of an increase in volume of the intestinal tissue towards the interior tract of the intestinal lumen. It is either due to an inflammation of the mucosa or lesions with mass effect associated to a high intestinal peristaltic activity. In adults, 90% of the cases occur due to pathological processes and 60-80% of these, are neoplastic (3,4).

At present, the main examination to detect intestinal intussusception is the abdominal and pelvic computed tomography (CT), because it allows early diagnosis. However, it has a limited use when determining if either the starting point is malignant or not (5).

Since intestinal intussusception is a rare medical condition in adults, we consulted the terms ileocolic intussusception and ileocolic invagination in MEDLINE, SciELO, LILACS and Web of Knowledge in order to be able to writea case report and a review of the current evidence.

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CLINICAL CASE

A 70-year-old female smoker with a clinical history of multiple sclerosis, neurogenic bladder, constipation and a caesarean section consulted the hospital with the following symptoms: a decrease of her defecation frequency during the last month; a two-day episode of colic abdominal pain; a three-day emesis episode and a one-day episode without defecation orgas elimination.

During the physical examination, in the emergency department, vital signs showed: blood pressure of 154/78 mmHg; axillary temperature of 36ºC; oxygen saturation of 96% with inspired oxygen fraction of 21%; heart rate of 62 beats per minute and dry mucosa.

Abdominal examination showed a scar in the infraumbilical midline and abdominal distention; soft, depressible, diffusely painful associated to a palpable mass in the lower right quadrant of 7 by 7 cm, soft, mobile and not painful.

Laboratory examinations showed: hemoglobin 12.6 g/dL; white blood cell count 9920; Bacilliform 1%; Platelets 297000; C reactive protein 37 mg/L; prealbumine 12.2 mg/dl; prothrombin time 95%; INR 1; TTPK 26.8 seconds; ureic nitrogen 15.4 mg/dl; Creatininemia 0.5 mg/dl and normal plasma electrolytes, LDH 137 U/l.

Abdomen and pelvic CT scan reported: Ileocolic intussusception in the right flank witha partial obstruction of the small bowel loops (*figure 1*). Liver without lesions.

Initial treatment included nil by mouth, intravenous hydration with saline solution, intravenous analgesia and preoperative preparation. The patient underwent surgery on the same day of her admission because of a mechanical ileus due to intussusception.

Surgery was performed through midline laparotomy. It was identified as an intussusception of the distal ileum towards the right colon (*figure 2*). The transverse colon and distal ileum were both sectioned in non-inflammed areas using a linear cutter. The right colic and ileocecal artery were identified, skeletonized and tied at their bases with a surgical knot. Once this procedure was performed, the mesocolon was sectioned and the surgical specimen was removed.

Both intestinal incisions transverse colon and ileum were invaginated. An ileocolonic an isoperistaltic manual anastomosis was made. Peritoneal cavity lavage with saline solution was undergone; drainage installation and closure of abdominal planes were performed without incident.

Paralytic ileus 5 days postoperative period was resolved with medical treatment. Without further complications, she was later discharged.

Histopathological analysis of the resected segment showed a signet ring cell adenocarcinoma of 4.3 by 4 cm by 2cm and 25 non-cancerous lymph nodes were reported, which was classified as pT3, pN0. CT scan did not show metastatic lesions. After a 6-month follow-up the patient recovered, with no recurrence.

DISCUSSION

This case report shows an elderly woman witha history of active smoking and multiple sclerosis, presenting an acute IO, due to intestinal intussusception. The causes of intussusception in adults are either benign or malignant.

Among benign lesions: lipomas, polyps, Meckel's diverticula, leiomyomas, and postoperative adhesions

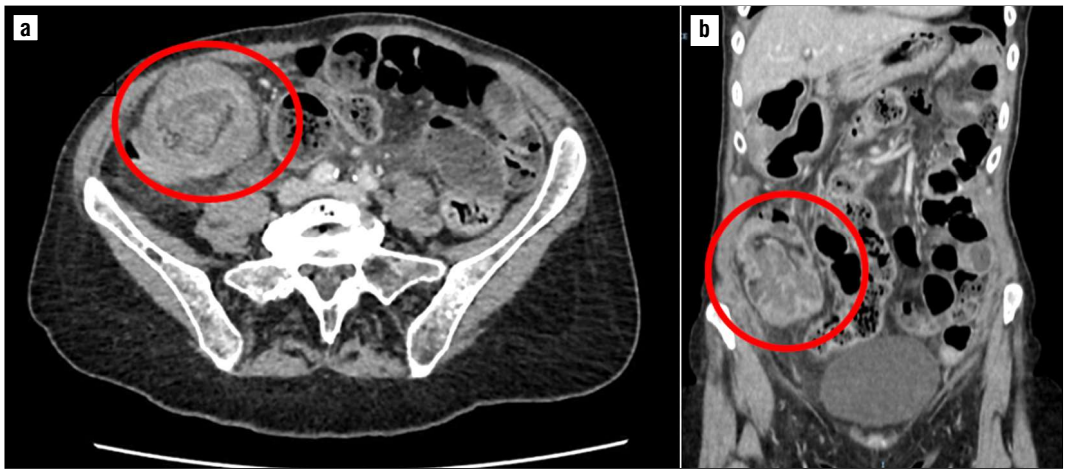

Figure 1 - Abdominal and pelvic CT scan. (a) Cross sectional image: ileocolonic intussusception imagecircled in red. (b) Longitudinal image: fusiform masscircled in red

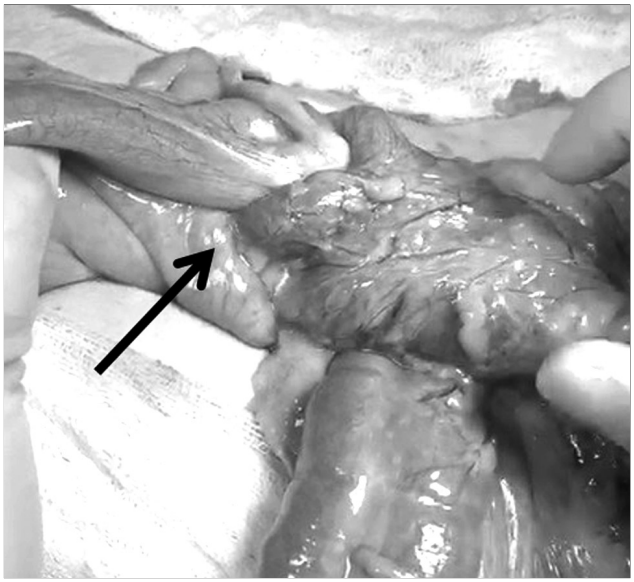

Figure 2 - Surgical piece: ileocolic intussusception identified with an arrow

are identified.Lipomas are submucosal tumors, more prevalent in women, most often located in the ascending colon or the cecum and when they are more than 4 cm can lead to obstruction or intussusception (6). Polyps are frequent amongst the adult population, although generally asymptomatic, they can manifest bybleeding and less frequently by obstruction or intussusception (7,8).

Malignant polyps, primary tumors and metastases are the main causes for intussusception. Of all the cases of adult intussusception 77% correspond to malignant tumors (9).

Among the malignant lesions in the colon, adenocarcinoma is the most frequent one, reaching between 61.7% to 95%; other malignant tumors are lymphomas (16.8%) and metastatic carcinomas (14.4%) (5). A systematic review of bowel intussusception, carried out in 2019 by Hong et al, showed that the most common symptoms are: abdominal pain (82.6%), nausea together with vomiting (49.7%) and the impossibility of eliminating gases (35.9%). Other symptoms included hematochezia (18.9%), palpable abdominal mass (21.9%), diarrhea (20.1%), and fever (13.9%). In the clinical case described above, the patient presented abdominal pain, no intestinal transit, vomiting and a palpable mass during the physical examination. Hematochezia, diarrhea, and fever were not detected.

Regarding the radiological diagnosis in the pediatric population, ultrasounds are the main form of diagnosis. Whereas the main diagnostic study in adults is the abdominal and pelvic CT scan,because the obstruction and the interposition of intestinal loops dilated by the gas makes diagnosis difficult. Moreover, abdominal CT scan determines the location, length and diameter of the intussusception indicating the presence of possible complications such as ischemia, perforation and obstruction, therefore favoring the surgical decision. In the case of malignancies, lymphatic involvement and liver metastases can also be identified, present in 20 to 70% of patients at the time of colorectal cancer diagnosis (7). Notwithstanding, the histopathology of these cannot be determined by imaging, which makes surgical resection with oncological criteria essential (8). In the abdomen and pelvic CT scan, longitudinal section may show a fusiform mass, while in the cross section a'target shooting' image could be observed. In relation to the clinical case, the initial study was performed within abdomen and pelvic CT scan, which allowed an evaluation of the ileocolonic intussusception, but not the diagnosis of cancer (9).

Regarding the treatment of intestinal intussusception in adults, it is important to highlight that the most frequent cause is malignant tumor, which is why a surgical procedure with oncological criteria is necessary. The concept of surgery with oncological criteria refers to en bloc removal of the affected part (10). Furthermore, lymph node resection must be performed, at least 12 of them, since the prognosis of colorectal cancer depends on it (11). In this type of rare cases, taking all the above into consideration, surgery following oncological criteria with en bloc resection is recommended.

There is no clear evidence regarding the benefit of the laparoscopic approach over laparotomy (4). Therefore, the choice of technique is subject to the location of the intussusception, the degree of intestinal obstruction, the degree of ischemia together with the patient's clinical condition and the doctor's experience with the technique (12).

CONCLUSION

In summary, we reported the case of an elderly woman, who consulted due to a clinical manifestation of an IO. Abdominal and pelvic CT showed intestinal intussusception. Surgery with oncological criteria was performed with en bloc resection. Anatomopathological specimen showed an ileocolic intussusception due to adenocarcinoma. Although intestinal intussusception is a rare condition in adults, surgeons must consider it as a cause of IO because its treatment requires oncological criteria surgery.

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Conflict of interest

All author declare that they have no conflict of interest.

Ethical approval

The patient signed the informed consent for publication of the article.

REFERENCES

1. Jackson PG, Raiji M. Evaluation and management of intestinal obstruction. Am Fam Physician. 2011;83(2):159–65.
2. Marinis A, Yiallourou A, Samanides L, Dafnios N, Anastasopoulos G, Vassiliou I, et al. Intussusception of the bowel in adults: A review. World J Gastroenterol. 2009;15(4):407–11.
3. Sarr MG, Nagorney DM, McIlrath DC. Postoperative Intussusception in the Adult: A Previously Unrecognized Entity? Arch Surg. 1981; 116(2):144–8.
4. Aguirre F, Silva Á, Parra P, Salcedo D, Acevedo Y. Intususcepción como causa de obstrucción intestinal en el adulto: un desafío para los cirujanos. Rev Colomb Cirugía. 2019;34(1):79–86.
5. Hong KD, Kim J, Ji W, Wexner SD. Adult intussusception: a systematic review and meta-analysis. Tech Coloproctol. 2019;23(4): 315–24.
6. Honjo H, Mike M, Kusanagi H, Kano N. Adult intussusception: a retrospective review. World J Surg. 2015;39(1):134–8.
7. Penna C, Nordlinger B. Colorectal metastasis (liver and lung). 2002;82:1075–90.
8. Gupta A, Gupta S, Tandon A, Kotru M, Kumar S. Gastrointestinal stromal tumor causing ileo-ileal intussusception in an adult patient: A rare presentation with review of literature. Pan Afr Med J. 2011; 8:1–5.
9. Valentini V, Buquicchio GL, Galluzzo M, Ianniello S, Di Grezia G, Ambrosio R, et al. Intussusception in adults: The role of MDCT in the identification of the site and cause of obstruction. Gastroenterol Res Pract. 2016;2016:1–11.
10. Balik AA, Ozturk G, Aydinli B, Alper F, Gumus H, Yildirgan MI, et al. Intussusception in adults. Acta Chir Belg. 2006;106(4): 409–12.
11. Velandia A, O AL, Barrios A, Fredy P. Evaluación de la disección ganglionar en colectomía oncológica realizada por cirujanos generales. 2019;71(5):392–7.
12. Sekihara M, Hara T, Ph D, Kori T, Kuwano H, Ph D. The Diagnosis and Treatment of Adult Intussusception. 2003;36(1):18–21.