Ileocolorectal intussusception. An unusual case

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ABSTRACT

Intestinal intussusception is the invagination of a proximal segment of the gastrointestinal tract and its mesentery (intussusceptum) into the lumen of the adjacent distal segment (intussuscepiens). Depending on its location, it can be enteroenteric, enterocolonic (the most common) or colocolonic (the least common).
In adults, they are rare and are mostly caused by neoplasias that act as the head of the invagination.
We present a very unusual case, in which the intussusception caused by adenocarcinoma of the cecum reached the anal canal.
Key words: *intestinal intussusception, colonic intussusception, cecal carcinoma, adults*

INTRODUCTION

Intestinal intussusception is defined as the invagination of a proximal segment of the gastrointestinal tract and its mesentery into the lumen of the adjacent distal segment, with consequent intestinal obstruction and ischemia.[1,2] This entity constitutes the main cause of intestinal obstruction in children but is unusual in adults.[3,4]
According to Russek et al.[5] and Alvarez Bautista et al.,[6] colonic intussusceptions represent 1-5% of cases of intestinal occlusion, with an incidence of 2 to 3 cases per year per 100,000 people. Ileocecal intussusceptions are the most common, followed by enteroenteric intussusceptions (more than 40% of cases) and colonic intussusceptions.[1-9]
In adults, conservative management performed in infants is not recommended; surgical treatment is preferred in all cases. The most commonly performed procedure is *en bloc* intestinal resection of the affected segment, without intraoperative reduction.[2]
The classic approach to intussusception is laparotomy; however, it tends to change more and more frequently towards laparoscopy, which has proven to be useful and safe for the diagnosis and exclusion of malignant lesions, with the already known benefits of the minimally invasive method.[2,3]

CASE

A 71-year-old female patient, hypertensive, diabetic and hypothyroid, with a history of laparoscopic cholecystectomy, inguinal hernioplasty and cesarean section, consulted for a 1-year history of diarrhea, colic-type abdominal pain, hyporexia and abdominal distension, associated with mucus and proctorrhagia.
At the time of the first consultation, a colonoscopy was performed, which showed an exophytic and stenosing lesion in the cecoascending colon, whose biopsy reported a tubulovillous adenoma with high-grade dysplasia.
Physical examination revealed a BMI of 18 kg/m2, a distended abdomen with no signs of peritoneal irritation and a palpable mass of 10x10 cm that occupied the right flank and iliac fossa. Anoscopy revealed a prolapse compatible with invagination that was interpreted as being of colonic origin, according to previous imaging studies (Fig. 1).

Figure 1. *Anoscopy showing colonic intussusception within the anal canal.*

Routine laboratory tests and tumor markers did not show any abnormalities. CT scan with oral and intravenous contrast of the chest, abdomen and pelvis showed a rounded mass of 110x90 mm that enhanced with contrast, due to an apparent ileo-colo-rectal invagination (target image), with mesenteric vessels and loops with thickened walls visible inside. No lesions suggestive of secondary disease were observed (Fig. 2).

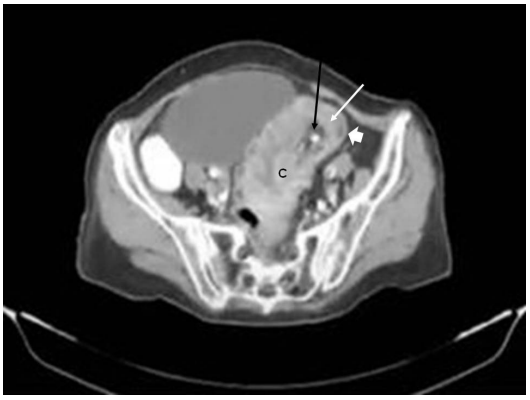

Figure 2. *Contrast-enhanced CT scan showing a mass with a central fatty component with mesenteric vessels inside (black arrow) and the thickened walls of two intestinal loops corresponding to the intussusceptum of the right colon (white arrow) and the intussuscepiens of the left colon (arrowhead). C: Lead point of invagination.*

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After a complete study, it was decided to perform surgery. Exploratory laparoscopy showed an intussuscepted right colon, compromising the rest of the colon up to the rectum, with significant adherent fibrotic involvement that prevents reduction and resection, requiring surgical conversion. Manual reduction was achieved by laparotomy, observing a 15 cm diameter tumor in the cecum. Right colectomy was performed with oncological principles and ileocolic anastomosis (Fig. 3).

Figure 3. *Surgical specimen showing the large cecal tumor, invagination lead point.*

The postoperative period was uneventful and the patient was discharged 5 days after the operation.

The histopathological study revealed a well-differentiated adenocarcinoma, without lymphovascular or perineural invasion or budding. The resection margins were free of neoplasia, as were the 15 removed lymph nodes. The final stage of the tumor was pT2pN0pMx. The genetic study of KRAS and BRAF was not mutated.

DISCUSSION

Intussusception is the result of intestinal conditions that change the normal pattern of peristalsis by a mass effect due to an intra- or extraluminal lesion, or by mucosal inflammation accompanied by hyperperistalsis.6,8

Intussusceptions are classified into three types: enteroenteric, colocolonic, and enterocolonic (either ileocecal or ileocolic).[4,7] Our case, an ileocolorectal intussusception, represents the least frequent group.

Regarding etiology, in 90% of adult intussusceptions there is a primary pathological condition, generally a benign or malignant intraluminal neoplasia. Among the lesions reported in the literature, Meckel's diverticula, inflammatory polyps, lipomas, neuroendocrine tumors, leiomyosarcomas, neurofibromas, and adenocarcinomas have been described.[8]

There is a greater causal relationship between malignant tumors and colonic invaginations (45-60%) than with enteric invaginations (15-30%).[6] In this context, Honjo et al.[9] documented that 77.3% of intestinal invaginations were related to a tumor, concluding that malignancy would be responsible for 90% of colonic invaginations and 25% of enteric invaginations.

A review summarizes the findings of eight observational studies that included 236 patients with intestinal invagination (53% enteric and 47% colonic). The cause was a malignant tumor in 39% of cases and a benign tumor in 27%. The main non-tumoral causes were idiopathic, post-surgical adhesions and Meckel's diverticulum, in 12%, 11% and 6%, respectively.[9,10]

In this line of study, the groups from the Mount Sinai Medical Center and the Mayo Clinic found that the causes of colonic invagination were mostly adenocarcinomas,[4] in coincidence with our case.

The clinical presentation of intussusception in adults is usually chronic and nonspecific, however, most patients present with abdominal pain and intermittent intestinal obstruction. The classic triad observed in pediatric patients characterized by abdominal pain, bloody mucous stools and palpable abdominal mass is rarely documented. Abdominal pain is the most common symptom (93.3%), followed by vomiting and nausea. An abdominal mass can be palpated in 24 to 42% of patients.[8]

Wang et al.[4] described nausea and abdominal pain (78%) as the most common symptoms, followed by melena and weight loss (10%). The clinical picture presented as intestinal occlusion or subocclusion in 50-80% of cases. In 70%, abdominal pain was periodic and intermittent, similar to that of our patient, who also presented weight loss, abdominal mass and a history of severe chronic abdominal pain associated with episodes of mucus discharge and constipation.

CT scan has become the study of choice for the diagnosis and evaluation of intussusception in adults, reaching a sensitivity of 58% to 100% and a specificity of 57% to 71% in the recognition of intestinal intussusception.[1,8] It provides critical information such as the length and diameter of the intussusception, a three-dimensional view of the intestine and surrounding viscera, the possible lead point, as well as the type and location, important data for the surgical strategy.[5] The typical tomographic patterns of this entity include the target image in the axial section, which results from the effect generated by the intestinal wall and the mesentery within the lumen, added to the attenuation and edema of the intestinal wall and fat, with proximal dilation and distal decompression, compatible with vascular compromise.[1,5,8]

Emergency surgical treatment is necessary in all patients who present signs of intestinal perforation.[3] The main debate lies in determining the need for *en bloc* resection or the previous reduction whenever possible. Currently, this is a controversial issue since some authors advocate reducing the invagination before resection to limit its extension, especially when it involves the small intestine. However, there is no clear evidence since reducing the invagination exposes a greater risk of dissemination of tumor cells in cases associated with neoplastic pathology. For this reason, most authors agree in recommending *en bloc* resection without reduction. [2,3,8,10]

However, in our case this strategy was ruled out due to the magnitude of the resection that would have been involved (total proctocolectomy), since the suspected neoplasia was only found in the right colon.

CONCLUSION

Intestinal intussusception in adults is rare and is usually associated with neoplasia, in most cases malignant when located in the colon.

The atypical clinical picture poses a diagnostic challenge, so abdominopelvic computed tomography is the method of choice.

Treatment is surgical and resection is individualized according to the patient's comorbidities, clinical presentation and risk of malignancy.

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