

## Case Report

# Intussusception as an unusual etiology of intestinal obstruction in adults: case report and review

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## ABSTRACT

Intussusception is a rare entity in adults, representing 1 to 5 percent of cases of intestinal obstruction. The clinical manifestations are non-specific, a structural lesion is identified by imaging, in more than 70% of the cases. Most cases require surgical treatment. We report the case of a 65-year-old female patient, with a history of intermittent colicky abdominal pain of two months of evolution, associated with nausea, vomiting, melena, and weight loss. Assessed in the emergency department due to worsening abdominal pain and lack of defecation. Her laboratory data reported anemia and leukocytosis. Abdominopelvic CT scan reported an image compatible with intussusception. We performed an emergency exploratory laparotomy, finding the terminal ileum invaginated into the colonic lumen., caused by a gastrointestinal stromal tumor. Intussusception in adults is uncommon but it should be considered as a diagnostic possibility in patients with intestinal obstruction, intestinal bleeding, and a palpable abdominal mass. Although these are non-specific manifestations, complementing the study with chemical and imaging analyzes significantly increases the diagnostic probability. The set of data obtained should be used to select the most appropriate treatment.

**Keywords:** Intussusception, Intestinal obstruction, Abdominal pain, Intestinal bleeding, Abdominal mass

## INTRODUCTION

Intussusception is a rare entity in adults, with an incidence of 2 to 3 cases per 1,000,000 people per year, only 5% of intussusception cases occur in adulthood, representing 1 to 5 percent of cases of intestinal obstruction. The clinical manifestations are non-specific, a structural lesion is identified by imaging, in more than 70% of the cases. Most cases require surgical treatment.<sup>1-11</sup>

Intussusception occurs when a segment of the gastrointestinal tract is introduced into the lumen of an adjacent segment of the digestive tract.<sup>1,5,12</sup> About 80% of

intussusceptions in adults are secondary to a structural lesion.<sup>1,3,5</sup> It can be of benign or malignant origin.<sup>4,12,16,17</sup>

The symptoms are non-specific, the most common are abdominal pain in 70-90% and data of occlusive or subocclusive syndrome. Radiological methods of diagnosis includes: simple X-rays, barium enema, ultrasound, and computed tomography, this one can identify a structural lesion in more than 70% of the cases.<sup>3,6,12</sup>

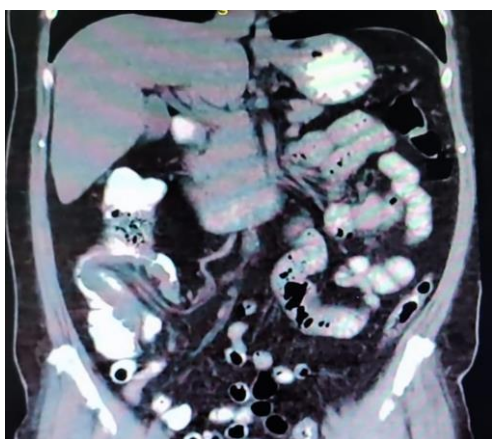
Treatment can be guided by predictors of surgical management, as well as predictors of malignancy, in which extensive resection will be required.

## CASE REPORT

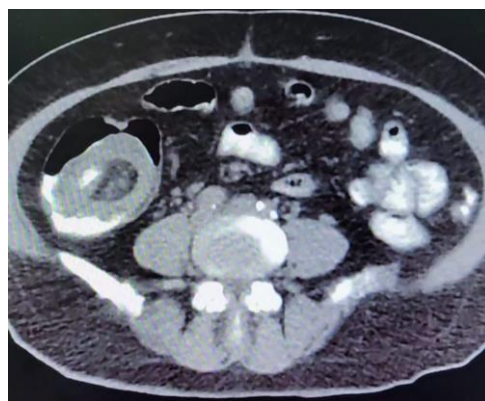
A 63-year-old woman with type 2 diabetes mellitus, systemic arterial hypertension, chronic coronary heart disease, a history of smoking, frequent use of NSAIDs due to unexamined headache, a history of surgical left oophorectomy for a cystic lesion, and hemorrhoidectomy more than 30 years ago.

In gastroenterology follow-up for episodes of intermittent colicky abdominal pain in the epigastrium with irradiation to the right flank and iliac fossa, nausea, vomiting and melena, weight loss of 5 kg, with a 2-month evolution, upper endoscopy was performed, diagnosing erosive gastropathy and management with PPI was started, without improvement. She went to the emergency department due to same clinical manifestations of 48-hour evolution with exacerbation of pain, also referring lack of defecation, asthenia and adynamia. On physical examination, pale skin, tachycardia, distended abdomen, hyperactive peristaltic sounds, with tenderness in the epigastrium and right lower quadrant. Admission tests showed leukocytosis and anemia, abdominal radiography in standing position identified coprostasis and several air-fluid levels.

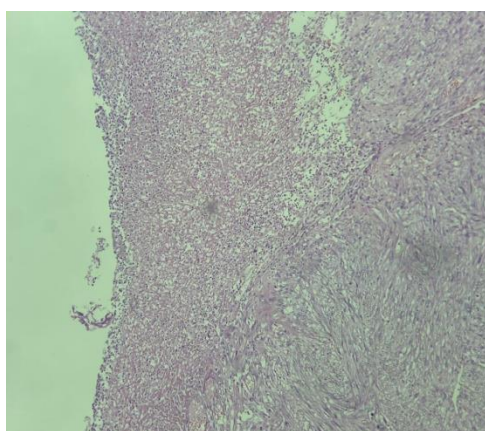
Conservative management was started and packed RBCs were transfused due to the persistence of the symptoms, a computed tomography scan was performed that revealed intussusception, an urgent exploratory laparotomy was performed, an intussusception was found involving 15 cm in length of the terminal ileum in the colonic lumen (Figure 1 and 2), without achieving manual reduction due to a mass firmly attached. A right hemicolectomy and resection of the compromised ileum was performed, with ileocoloanastomosis. The patient recovered appropriately and was discharged from hospital after 5 days. The anatomopathological study of the surgical piece reported a gastrointestinal stromal tumor (GIST) (Figure 3).



**Figure 1: Coronal section of a CT. Intussusception is observed made by (1) invaginative loop, (2) halo of mesenteric fat, (3) invaginated loop, (4) lumen of the invaginated loop.**



**Figure 2: patient's tomography showing a donut or target image.**



**Figure 3: Report of gastrointestinal stromal tumor (GIST), mixed (spindle cell and epithelioid).**

The patient is discharged in good general condition. After one year of follow-up, the patient is asymptomatic.

## DISCUSSION

Intussusception is a rare entity in adults with an incidence of 2 to 3 cases per 1,000,000 people per year it represents 5% of all intussusceptions including those of pediatric age and from 1% to 5% of cases of intestinal obstruction.<sup>1-11</sup>

Intussusception occurs when a segment of the gastrointestinal tract "intussusceptum" is introduced into the lumen of an adjacent segment of the digestive tract "intussusciens", generally follows the peristaltic direction (anterograde).<sup>1,5,12</sup> The result is partial or total obstruction and inflammatory changes ranging from thickening to ischemia and necrosis of the intestinal wall.

About 80% of intussusceptions in adults are secondary to a well-identifiable structural lesion that acts as a lead point, large case series have revealed that tumors are the most common type of lead point.<sup>1,3,5,13-15</sup> It can be of benign origin: lipomas, hematoma, Meckel's diverticulum, appendix, adhesions, intestinal ducts,

polyps, wall hematoma; or of malignant origin: adenocarcinomas, lymphomas, leiomyosarcoma, metastases, gastrointestinal stromal tumors.<sup>4,12,16,17</sup>

According to their location, intussusceptions are classified as enteric, ileo-colic or ileocecal, and colonic.<sup>4,9,12,18</sup> The incidence of malignancy is higher in colonic than in enteric intussusceptions (~70% vs ~30%).<sup>4,16,18</sup>

The symptoms are non-specific, chronic and intermittent, the patients present abdominal pain in 70-90% of the cases and data of occlusive or subocclusive syndrome, other manifestations are hematochezia, weight loss and palpable abdominal mass (24-42%), which is a sign of great value, if in the examinations it appears to be of a different location and consistency it corresponds to the intussusception coil, which should be carefully sought in the right and left lateral decubitus, dorsal decubitus and in Trendelenburg. When the intussusception is already established, the manifestations are severe, crampy abdominal pain and hyperperistalsis.<sup>3,4,12,18,19</sup>

The pre-surgical diagnosis is close to 50%, in the simple X-rays an intestinal occlusion can be seen and can help to identify the location.<sup>6,12,20</sup>

Other radiological elements are: The barium enema in which if the contrast runs between the invaginate and the invaginated portion, the image is observed in a "coiled-spring" and if the contrast does not run, the image is observed in a "cup" and the gastrointestinal series where it is possible to visualize the image in "stacked coins" or "coiled-spring".<sup>4,12</sup>

Ultrasound is frequently used in patients with acute abdominal pain, the images obtained consist of multiple alternating hyper echoic and hypo echoic layers due to the presence of two superimposed mucosal and muscular layers of the invaginate and invaginated segments, target image or variants thereof, such as the crescent-in-doughnut sign or the pseudokidney sign.<sup>21,22</sup>

The diagnosis is reached with certainty by means of computed tomography in which the structural lesion is identified in more than 70% of the cases. Intussusception is seen as a soft tissue mass consisting from the outside in of: 1) the external invaginate loop 2) a halo of mesenteric fat (vascular structures) 3) the internal invaginated loop and 4) the lumen of the invaginated loop (Figure 1), In this way, the sausage or sandwich image (bowel-within-bowel) or the classic "target sign" (Figure 2) is originated when the tomographic slice passes parallel or perpendicular to the longitudinal axis of the intussusception, respectively.<sup>3,6</sup>

Flexible sigmoidoscopy and colonoscopy are important in the evaluation of intussusception, in a retrospective study of 22 cases, colonoscopy was used in seven of them as a diagnostic tool, although it was able to demonstrate

the presence of an obstructive mass, it only achieved the diagnosis of intussusception in one patient. Endoscopic biopsy or polypectomy may not be advisable in those individuals with long-term symptoms because of the high risk of perforation, which is more likely to occur in the phase of tissue ischemia and necrosis.<sup>10</sup>

The choice of treatment can be guided by whether the intussusception is temporary or permanent, the location of the lesion, signs of ischemia, necrosis, or sepsis, and possible underlying etiology (benign or malignant). Therapeutic barium enema can be attempted in selected cases where the underlying pathology is known and the intussusception is colonic or ileocolic.<sup>7,10,11</sup> The signs that predict a surgical approach are the presence of intestinal occlusion, free fluid, pneumoperitoneum and intestinal pneumatosis.<sup>22</sup> Intussusceptions established as benign can be reduced without resection, , 3 However, if the bowel is inflamed or ischemic, reduction should not be attempted.<sup>1</sup> En bloc resection is proposed given the possibility of malignancy, the independent predictors of malignancy described are colonic location of the intussusception and anemia.<sup>20</sup>

## CONCLUSION

Despite the fact that intussusception in adults is uncommon, it should be considered as a diagnostic possibility in patients with intestinal obstruction, bleeding, and a palpable mass. Although they are non-specific clinical manifestations, it is important to complement the clinical study of the patient with imaging methods that significantly increase the probability of their detection. The set of data obtained should be used to select the most appropriate treatment on an individual basis.

In this case, the commonly described signs and symptoms of intussusception were presented, it was necessary to perform a tomography with which the diagnosis was reached and surgical treatment was chosen when the structural lesion was identified by tomography, and en bloc resection was performed taking into account the factors predictors of malignancy, which was later confirmed in a histopathological study which reported a GIST tumor.

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