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SCIENTIFIC LETTERS

Ileoileal and ileocecal intussusception due to ileal lipoma: A rare cause of bowel obstruction in the adult☆

Intususcepción íleo-ileal e íleo-cecal por lipoma ileal: una causa poco frecuente de obstrucción intestinal en el adulto

Intestinal intussusception or invagination refers to the penetration of a segment of the gastrointestinal tract into another distally situated one, that can result in bowel obstruction or strangulation. It has a high incidence in children, but represents only 1-5% of the cases of bowel obstruction in adults. An organic lesion is found inside the invagination in 90% of the cases. The most common locations are ileoileal, with double ileoileal and ileocecal locations being less frequent.

A 36-year-old man with an unremarkable past medical history arrived at the emergency service with diffuse, intense abdominal pain of 10-h progression. It was exacerbated by eating and accompanied with nausea and vomiting. The patient complained of recurrent watery diarrhea and colicky abdominal pain during the past month. Physical examination found the patient afebrile, with blood pressure of 172/98 mmHg, and heart rate of 75 bpm. His abdomen was soft, but intensely painful at the right iliac fossa. The Blumberg sign was negative. The striking results of the laboratory work-up were the leukocyte count of $13.75 \times 10^3/mm^3$ and segmented neutrophils of 81.4%. An abdominal computed tomography scan showed: ''ileocolic invagination, possibly secondary to lipoma, with likely liver hemangiomas'' (fig. 1). Emergency exploratory laparotomy revealed a long ileal segment invaginated into itself and overlapping into the cecum, with proximal segment dilation. Given the impossibility of de-invagination, the friability of the affected intestine, and the large size of the lesion, conversion was decided upon. Ileocecal resection through a supra-infraumbilical midline laparotomy (fig. 2) and ileocolic anastomosis were carried out, after a repeat failed reduction attempt. The opened surgical specimen (fig. 2) revealed the 35-cm invagination of an ileal segment into the terminal ileum and cecum, with approximately 10 cm of ischemia and a pedunculated 4-cm lesion at the ileal end, highly suggestive of lipoma, which was confirmed by the anatomopathologic study. The patient progressed favorably and was released on postoperative day 8.

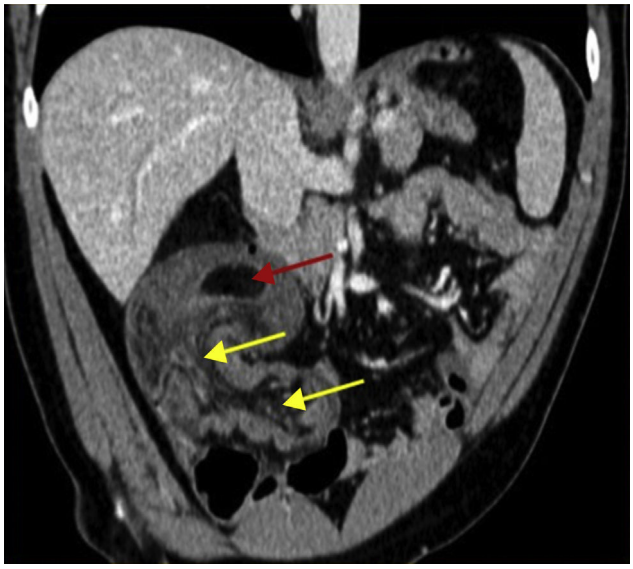

Figure 1 Abdominal CT coronal reconstruction that shows the head of the invagination, corresponding to a lipoma (red arrow) and the large ileocolic invagination with vessels and mesenteric fat inside the lumen of the colon (yellow arrows).

Intestinal invagination was first described by Barbette in 1674.[1] Its etiology in children is usually idiopathic, but in adults, with an annual incidence of 3 cases per million inhabitants, there is an underlying lead point that is well-defined in 90% of the cases.[2] Lesions in the small bowel tend to be benign, with idiopathic intussusception in only 8-20% of the cases.[1–3] In the large bowel, the most frequent underlying cause is adenocarcinoma.[1,3] Small bowel tumors make up 2-3% of all gastrointestinal tumors and 30% are benign.[4] Lipomas are the second most frequent benign tumor, and large ones can cause symptoms of obstruction or bleeding, or be the lead point for intussusception,[3] as in our patient.

In a 1954 study, different case series that included a total of 745 surgically diagnosed invaginations were reviewed.

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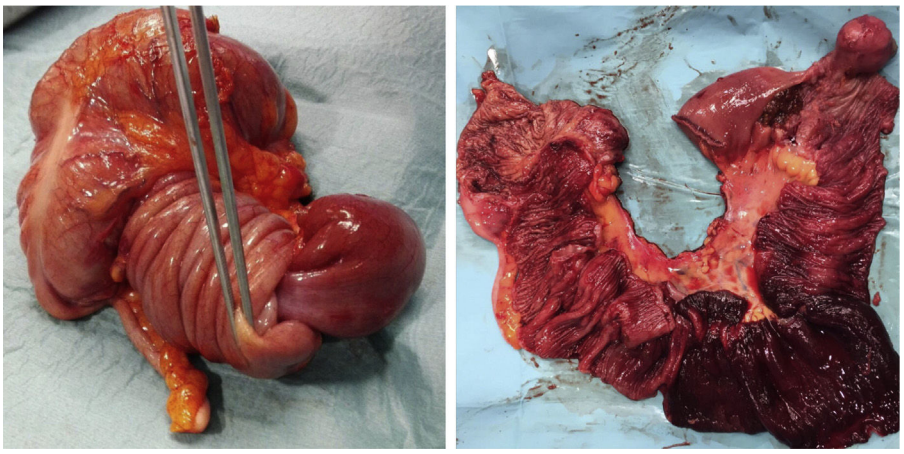

Figure 2 Image of the closed and open surgical specimen from the ileocecal resection, showing the invagination of the ileal segment into itself and overlapping into the cecum, as well as the lead point for the invagination (ileal lipoma measuring 4 cm) and the ischemia of the 10-cm segment of the terminal ileum.

With respect to location, 39% were enteroenteric, 21% were ileocecal, 17% colocolic, 13% ileocolic, and the stomach, duodenum, or stomata were involved in 10%.[5,6]

Symptoms in children are well described (acute abdominal pain, ''red currant jelly'' stools, and palpable tumor),[1] but in adults, they are nonspecific and often suggest bowel obstruction.[7] Recurrent crises of abdominal pain are frequently noted in the anamnesis.[5] In a case series of 58 adult patients by Azar and Berger, published in 1997,[7] only one correct diagnosis was made in 32% of the patients, leading to the later publication of numerous articles that specified the high number of cases with no preoperative diagnosis.[5,7] This is different today. In a 2009 review by Morera-Ocón et al.[5] that included 30 patients, they reported that diagnosis was made before surgery in 83% of the cases. Ultrasound imaging has a sensitivity of 100% and a specificity of 88%.[8,9] Abdominal computed tomography evaluates the etiology and locoregional or distant involvement when there is a malignant tumor.[7] If the ultrasound displays the characteristic ''bulls-eye'' in the cross-sectional view and the ''pseudo-kidney'' in the longitudinal view, a preoperative abdominal computed tomography scan may be unnecessary. At present, surgical intervention with bowel resection is the standard treatment, given the probability of an underlying malignant lesion or necrosis and perforation of the invaginated segment.[5] There is no current evidence to contraindicate de-invagination, which can also facilitate exposure for the resection,[9] but it is not always possible, as in our case. In addition, it is important to treat the underlying cause[9] and contemplate the possibility of laparoscopic surgery,[1,10] as long as it is performed by an expert team.

In our review of the literature, we found only 2 cases of intussusception caused by an ileal lipoma whose invagination extensions (19 and 20 cm)[1,11] were similar to that of our case, which was the largest (35 cm).

Conflict of interest

The authors declare that there is no conflict of interest.

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Gastric per-oral endoscopic pyloromyotomy in the treatment of refractory gastroparesis: Report on the first case performed in Mexico☆

Piloromiotomía endoscópica por vía oral para el tratamiento de gastroparesia refractaria: reporte del primer caso en México

Gastroparesis is a syndrome characterized by a delay in gastric emptying, in the absence of mechanical obstruction. Its main symptoms are: nausea, vomiting, and early satiety.[1] Idiopathic etiology is the most frequent, but postoperative and metabolic (diabetes mellitus) etiologies have also been regularly documented.[2] The criterion standard for diagnosis is gastric emptying scintigraphy, in which a standardized diet radiomarked with ^{99m} TC colloidal sulfur is ingested, obtaining images at 0, 60, 120, 180, and 240 min. Emptying delay is defined as > 10% gastric retention in 4 h.[3] Treatment consists of controlling symptoms and improving emptying.[4] The response rate of dietary and drug modifications, including metabolic control in diabetic patients, is low (< 20%).[5] Intrapyloric botulinum toxin injection, a current treatment, has a temporary and poor response rate (15-20%).[6] Surgical management includes electric stimulation, pyloroplasty, and total or subtotal gastrectomy, with regular results (40-60%) and high morbidity and mortality.[1,2] Per oral endoscopic myotomy (POEM) is a technique that was developed for the treatment of achalasia, and has shown good safety and efficacy.[7] The idea of performing an endoscopic pyloromyotomy (G-POEM) was recently developed, utilizing the basic components of POEM to improve gastric emptying through gravity, despite the presence of gastroparesis. Initial results on different populations, including a multicenter study, have shown good safety and efficacy in humans (> 80% initial response).[8–10]

Gastroparesis is a frequent pathology in the Mexican population. The aim of this report was to describe the case of a Mexican patient with refractory gastroparesis treated with the G-POEM procedure.

A 25-year-old woman had a past medical history of well-controlled hypothyroidism and chronic constipation that did not respond to medical treatment. She required a subtotal colectomy due to colonic inertia, and in a second surgical stage, she underwent bowel transit restitution that was performed 10 years ago. Her current illness began 4 years prior to her hospital admission, with nausea, vomiting, early satiety, and a 15-kg weight loss. The evaluation protocol began with endoscopic study that ruled out mechanical obstruction. A gastric emptying scan showed 46% retention at 4 h, resulting in the diagnosis of idiopathic gastroparesis. Medical and dietary treatment was begun, providing partial symptom improvement, and thus the gastroparesis was considered treatment-refractory. The G-POEM procedure was planned, once the patient gave her informed consent and authorization from the hospital ethics committee was obtained. The patient's quality of life and the magnitude of her symptoms were evaluated prior to the G-POEM through the Gastroparesis Cardinal Symptom Index (GCSI) questionnaire,[11] with a score of 37/45.

The patient fasted 24 h before the procedure and was given 1 g IV of cefotaxime as prophylaxis. A conventional model EG590WR endoscope (Fujinon, Saitama, Japan) was employed, along with a DH-28GR hood (Fujinon, Saitama, Japan), and an ERBE VIO-200D electrosurgical unit with a hybrid knife (Tübingen, Germany). The parameters were: injection (ERBEJET, effect 50), incision (ENDOCUT Q, effect 3, cutting duration 3, cutting interval 3), tunnelization (SWIFT COAG, effect 3 at 70 W), myotomy (ENDOCUT Q), and hemostasis (SOFT COAG, effect 3 at 40 W). Hemoclips (Boston Scientific, USA) and a CO2 insufflator (ENDOSTRATUS, Medivators, Minneapolis, MN, USA) were also used. The G-POEM technique consisted of the following steps: *1) revision and injection:* the antrum was viewed and a combination of 0.9% sodium chloride solution with 0.5% methylene blue was injected 5 cm before the pylorus, above the lesser curvature; *2) incision*: a 20-mm longitudinal incision was made; *3) tunnelization:* a submucosal tunnel was created from that point until passing the pylorus and reaching the proximal region of the duodenum; *4) myotomy*: total thickness myotomy of the pyloric muscle was performed 2 cm proximal to it; *5) closure*: 5 hemoclips were placed (fig. 1). Procedure duration was 60 min and there were no complications. Bowel transit with water-soluble contrast material at 24 h ruled out leakage into the submucosal tunnel, and adequate passage of the contrast medium into the duodenum was observed less than 2 min from its administration, indicating treatment success (fig. 2). Oral fluid intake was begun and the patient was sent home 48 h after the procedure with no complications. At the check-up one week

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