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Case report

Heterotopic Pancreas as a Cause of Intussusception and Gastrointestinal Bleeding: A Case Report

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Abstract

Introduction: Intussusception is the telescoping of one segment of the intestine into an adjacent segment, leading to obstruction, inflammation, and ischemia. In adults, it accounts for 5% of intussusception cases, representing 1%–5% of intestinal obstructions. It is typically secondary to intraluminal lesions (benign or malignant) or iatrogenic factors. **Case Report:** A 39-year-old male patient with a history of chronic gastritis presented with a three-month history of intermittent epigastric and left hypochondrial pain, which progressively increased in intensity and was associated with melena and rectal bleeding. On physical examination, he was hemodynamically stable, with mild tenderness in the left upper quadrant, no signs of peritoneal irritation, and positive findings for melena on digital rectal examination. Initial laboratory tests revealed no inflammatory response and normal hemoglobin levels. Upper gastrointestinal endoscopy and colonoscopy showed no abnormalities. Due to persistent abdominal pain, hepatobiliary ultrasound was performed, revealing a "target sign" suggestive of intussusception, which was confirmed with abdominal computed tomography. The patient underwent laparoscopic surgery, which identified an intestinal intussusception in the proximal ileum with a palpable intraluminal mass. Segmental resection and side-to-side anastomosis were performed. Histopathological analysis revealed a submucosal lipoma with ectopic pancreatic tissue. **Conclusion:** Intestinal intussusception in adults is rare and even less frequently associated with ectopic pancreatic tissue.

Keywords

Choristoma, pancreas, intussusception, gastrointestinal bleeding, laparoscopy, general surgery, case study.

INTRODUCTION

Intussusception is the telescoping of one segment of the intestine into an adjacent segment, which can lead to obstruction, inflammation, or ischemia. In adults, intussusception accounts for 5% of all cases and represents 1% to 5% of intestinal obstructions. The median age of affected individuals is 50 years, with a male-to-female ratio of 1:5[(1)]. Intussusception in adults is typically secondary to the presence of intraluminal lesions, most of which are related to neoplasms, followed by benign lesions such as polyps, lipomas, and fibromas, with only a few cases linked to iatrogenic causes[(2)].

The association with ectopic pancreatic tissue is extremely rare, and its clinical presentation is variable. It may manifest with chronic, intermittent abdominal pain accompanied by non-specific signs of intestinal obstruction, or it may present with nausea, vomiting, gastrointestinal bleeding, constipation, or abdominal distension[(1,3)]. The variability in clinical presentation and imaging characteristics makes preoperative diagnosis challenging. Nonetheless, timely diagnosis is essential, as surgical intervention is

often the definitive treatment[3]. A review of the literature identified few reports of heterotopic pancreas in Latin America[4–6], with only one case described in Colombia, located within a gastric polyp[4]. This report presents the case of a patient with ectopic pancreatic tissue as the cause of intestinal intussusception.

CASE DESCRIPTION

The patient was a 39-year-old male with a history of chronic gastritis and no other significant medical or surgical history. He was admitted to a tertiary care hospital after experiencing a three-month history of intermittent epigastric and left hypochondrial pain, which intensified one day prior to admission. The pain was rated 8/10 on the pain analog scale and was associated with two episodes of melena and one episode of rectal bleeding. He denied self-medicating or consuming herbal infusions. Upon admission, he was normotensive, tachycardic, and had an oxygen saturation of 98% on room air. On physical examination, he had anicteric sclerae, moist pink mucosa, a soft, depressible abdomen with tenderness on palpation in the epigastric and left hypochondrial regions, but no signs of peritoneal irritation, palpable masses, or organomegaly. A digital rectal exam was positive for melena. Initial laboratory tests showed a normal complete blood count without anemia, and normal creatinine and blood urea nitrogen (BUN) levels.

The general surgery team evaluated the patient and diagnosed gastrointestinal bleeding. Management was initiated with omeprazole, intravenous fluids, and analgesics. Due to his symptoms, esophagogastroduodenoscopy and colonoscopy were performed, both of which were unremarkable. However, given the persistence of abdominal pain in the epigastric and left hypochondrial regions, a hepatobiliary ultrasound was ordered, which revealed a target sign consistent with intussusception. This finding was subsequently confirmed by abdominal computed tomography (**Figure 1**). Based on imaging results, the patient underwent laparoscopic abdominal surgery, which revealed intestinal intussusception involving a proximal ileal loop and the presence of an intraluminal mass, with no macroscopic involvement of the mesentery or intestinal serosa. A 10 cm segment of the affected intestine was resected, and an anastomosis was performed using the Barcelona technique (**Figure 2**). The patient's postoperative course was uneventful, and he was discharged eight days after admission. During his follow-up visit four weeks later, he demonstrated satisfactory clinical recovery. The pathology report described intestinal intussusception with a submucosal lipoma and a focus of histologically normal ectopic pancreatic tissue (**Figure 3**).

DISCUSSION

Ectopic pancreatic tissue is defined as pancreatic tissue that lacks vascular or anatomical continuity with the pancreas itself, also referred to as heterotopic pancreas[7]. It has an incidence of 0.2% in laparotomy series and 0.5% to 3.7% in autopsy studies[8], with a higher prevalence in men during

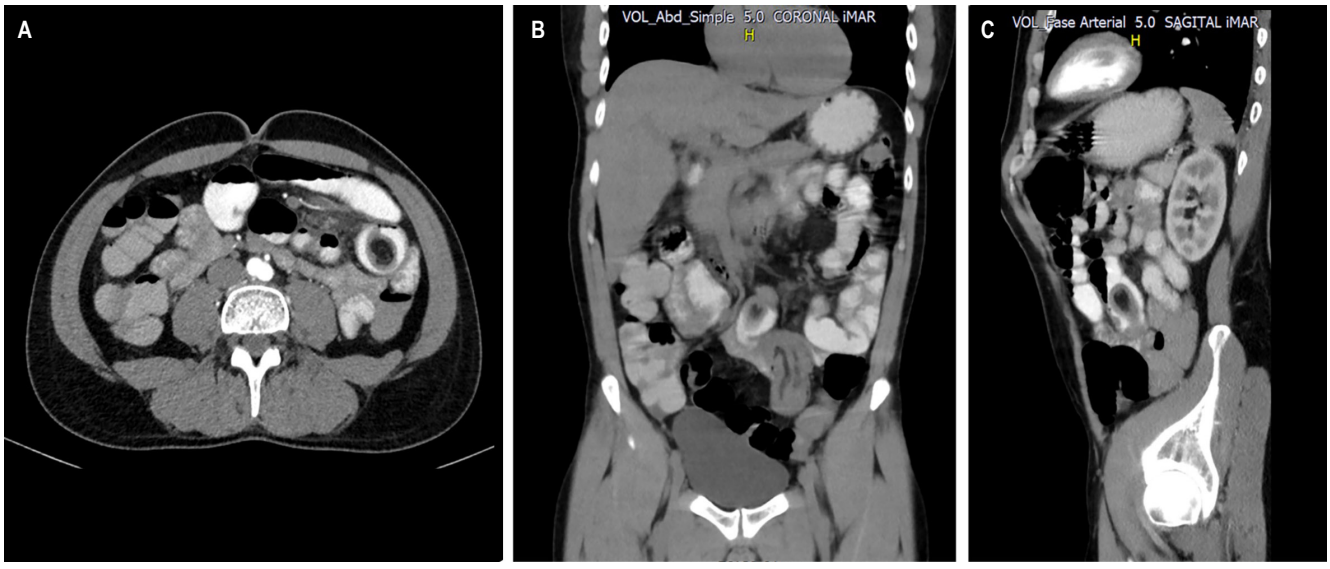


Figure 1. Axial (**A**), coronal (**B**), and sagittal (**C**) views of an abdominal and pelvic computed tomography scan with oral and intravenous contrast. The images show a target or doughnut sign in the region of the ileal loops, suggestive of intussusception. Images provided by the Ubiquo System, Hospital Universitario San José, Popayán, Colombia.

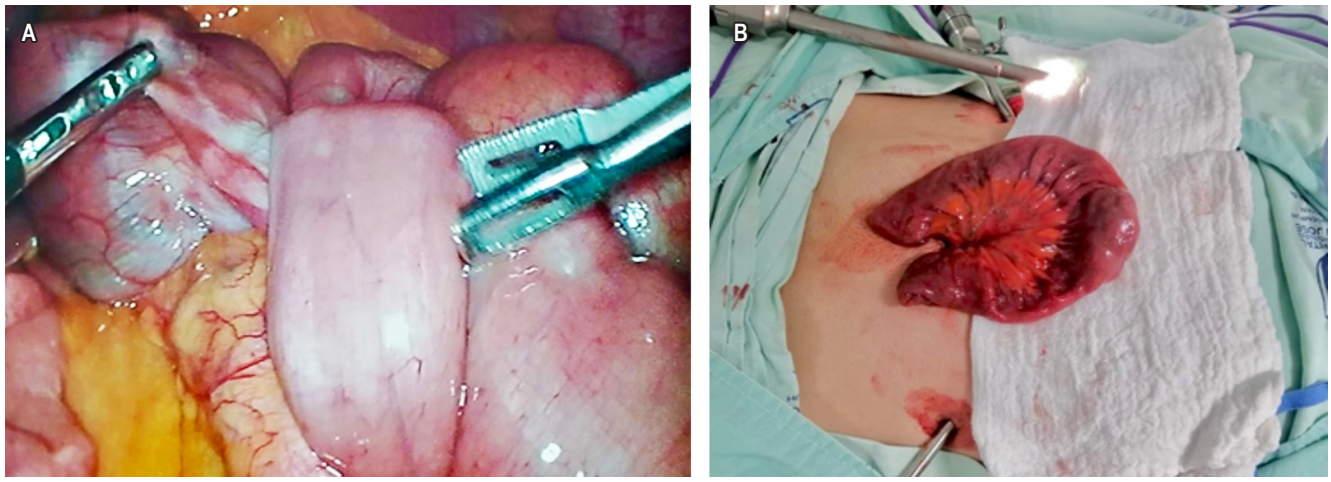


Figure 2. Intraoperative photographs from the laparoscopic approach. **A.** Proximal ileal loop showing findings consistent with intussusception. **B.** Surgical specimen following resection of the proximal ileum. Author's file.

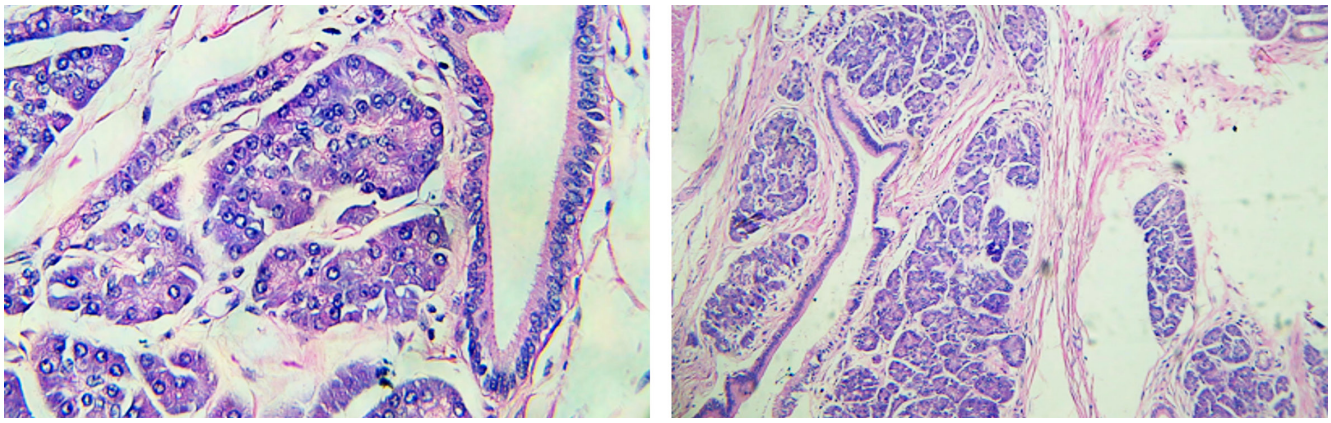


Figure 3. Histological analysis showing foci of pancreatic tissue composed of serous acini without epithelial atypia, glandular ducts with normal histological features, and histologically normal islets of Langerhans. No evidence of infiltrative tumor lesions is observed. Source: Pathology Laboratory, Hospital Universitario San José, Popayán, Colombia.

the fifth and sixth decades of life. The most common locations are the stomach (25%–38%), followed by the duodenum (17%–36%) and the jejunum (15%–21%); however, it can also be found in other sites such as the biliary tract, mesentery, and omentum[9,10]. The exact etiology remains unknown, although various theories have been proposed regarding its embryological origin[7,10,11]. In this case, ectopic pancreatic tissue was identified as the cause of intussusception in the proximal ileal loop—a location more commonly associated with pediatric cases and infrequently reported in the literature[12,13]. Geoffray and colleagues demonstrated that ectopic pancreatic tissue in the ileum occurs in only 0.2% of cases[14,15].

Most cases of heterotopic pancreatic tissue are asymptomatic and are usually incidental findings during autopsies, laparotomies, or abdominal imaging studies[9,11,16]. When symptomatic, they typically present with non-specific symptoms such as abdominal pain, epigastric pain, nausea, vomiting, and gastrointestinal bleeding. Although any intestinal condition that disrupts normal peristaltic patterns increases the risk of intussusception[1], it is rare for pancreatic heterotopia to cause intestinal obstruction or intussusception[7,10,17]. In this case, the patient's primary symptoms were abdominal pain and gastrointestinal bleeding. According to the case series and systematic review by LeCompte and colleagues, only 20% of patients with

this condition are symptomatic, with 67% presenting with abdominal pain and 9% with gastrointestinal bleeding[18].

Furthermore, only 5% of all cases of intussusception occur in adults, with 1% to 5% of these presenting with intestinal obstruction. In more than 90% of adult cases, an organic lesion (mass) is present[19,20]. Clinical manifestations are often non-specific, and the diagnosis is typically made through radiological imaging or intraoperatively[2,3]. Abdominal computed tomography (CT) is currently considered the most sensitive radiological method for confirming intussusception, with a diagnostic accuracy ranging from 58% to 100%[1,3]. CT imaging can reveal the characteristic target sign, which corresponds to a three-layered structure comprising the intestinal wall, mesentery, and enveloping bowel loop[21,22]. Additionally, CT scans can define the location, potential etiology, and relationship with adjacent structures[2]. In this case, the diagnosis was initially suggested by an abdominal ultrasound and subsequently confirmed by an abdominal CT scan, which demonstrated the classic findings of intussusception. Although abdominal ultrasound is not the diagnostic modality of choice, it is a quick, easily performed procedure that requires no preparation and can aid in detecting intussusception. Honjo and colleagues reported an ultrasound diagnostic accuracy of approximately 50%[1].

The definitive diagnosis is made through histopathological analysis, where macroscopically, a region of small yellowish nodules ranging from 1 mm to 5 cm can be observed[10]. These nodules are typically located in the mucosa and, in some cases, in the serosa. Microscopically, a few lobules of pancreatic acini are seen, containing polarized cells with basally oriented nuclei and amphophilic or basophilic granular cytoplasm. Pancreatic islets are observed in one-third of cases, while lesions composed entirely of endocrine cells are rare[17,23], as shown in **Figure 3**.

In adults, intussusception requires definitive treatment in 70% to 90% of cases, with surgical resection being the preferred approach due to its frequent association with malignancy[3]. The traditional approach to managing intestinal intussusception is laparotomy[20]; however, laparoscopy has proven to be a useful and safe method for treating this condition, with additional advantages such as improved aesthetic outcomes, reduced surgical stress, enhanced gastrointestinal tract healing, shorter hospital stays, and a lower risk of incisional hernia[24]. This is supported by the study by Zhao and colleagues, who compared laparoscopic and open surgical techniques in 162 pediatric patients—62 of whom underwent laparoscopic surgery and 100 open surgery. The results showed that the laparoscopic group had shorter times to oral intake initiation and shorter hospital stays compared to the open surgery group[25]. In contrast, no comparative studies in adult patients were identified in the literature. This report presents a rare case of ectopic pancreas in an adult patient, managed with intestinal resection via laparoscopy, resulting in a favorable outcome.

Ethical Considerations

This study was designed in accordance with current international bioethical standards, and all presented data respect the patient's confidentiality.

Approval for the case report was obtained from the ethics committee of Hospital Universitario San José de Popayán, Colombia.

Conflict of Interest

The authors declare no conflicts of interest.

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