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Case Report

Non-Meckel's small intestine diverticulitis presenting with obstruction and perforation

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ABSTRACT

Small bowel diverticulosis (excluding Meckel's diverticulum) is a rare condition, which predominates in older adults. It is theorized that irregular intestinal contractions lead to increased segmental intraluminal pressure, favouring diverticula formation. This diverticulum may develop life threatening complications. Clinical record of a patient who attends the emergency service of an IMSS hospital in Ciudad Juárez, including clinical symptoms, imaging, surgical management and pathological anatomy. Patient presented to the emergency room with a clinical and imaging picture of intestinal obstruction. An exploratory laparotomy was performed, finding a diverticular disease of the small intestine complicated by diverticular perforation, which was confirmed by histopathological study. Due to its high morbidity and mortality, non-Meckel's diverticulitis of the small intestine is a pathology that should be considered as a differential diagnosis in adults over 70 years of age with abdominal pain.

Keywords: Diverticulitis of the small intestine, Intestinal obstruction, Abdominal pain, Perforation, Images

INTRODUCTION

Small bowel diverticulosis (excluding Meckel's diverticulum) is rare condition, unlike colonic diverticulosis. It predominates in older adults, 80% of affected individuals are in seventh decade of life.[1] Incidence cited in autopsy series varies from 0.2-4.5% and from 0.5-2.3% in contrasting studies of small intestine. Diverticulosis is more common in duodenum (79%) than in jejunum (16%) and ileum is even rarer (4%). Generally, this condition is associated with colonic diverticulosis and it predominates in males in 2:1 ratio.[2,3]

Although the exact etiology is unknown, it is theorized that irregular intestinal contractions lead to increased segmental intraluminal pressure, favouring diverticula formation.[4,5] These false diverticula occur along the mesenteric border and are difficult to identify as they are hidden within mesenteric fat. They are prone to bleeding since they enter same site as blood supply to small intestine. Patients often have concomitant colonic diverticula.[7] Diverticulitis is generally best defined as micro-perforation/macro-perforation of diverticula causing localized inflammation that can progress to more generalized manifestations.[5]

CASE REPORT

Clinical case of 90-year-old female with h/o open cholecystectomy 10 years ago secondary to chronic lithiasic cholecystitis, open reduction with internal fixation of left femur and left hip and abdominal hysterectomy 33 years ago secondary to uterocele. Denies chronic disease/allergies. Attends to ED due to 10/10 generalized intense cramping abdominal pain of 1 day of evolution, which associated with nausea, vomiting, hyporexia, adynamia, absence of bowel movements and no gas channeling.

Upon arrival at the emergency room, she presented stable vital signs with blood pressure of 130/60 mmHg, 78l pm, 19 rpm, temperature 36.5º C, SaO_2 97% in room air. Consultation with the general surgery service was requested due to an apparent picture of intestinal occlusion. On directed physical examination, the patient was found to be neurologically intact, with sub hydrated integument and skin of adequate coloration. Globose abdomen at the expense of the panicle, distended, painful on generalized palpation, tympanic on percussion, decreased peristalsis with fighting sounds. On rectal examination, sphincter tone was preserved, without fecal material in the rectal ampulla and without palpable masses. Explorer glove with little fecal matter. A simple abdominal X-ray was performed, which presented an image of a stack of coins in the small intestine (Figure 1).

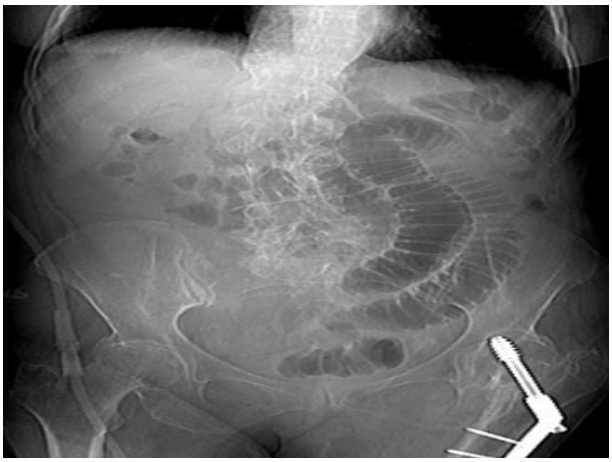

Figure 1: Abdominal X-ray of a stack of coins image in the small intestine.

In the laboratory, leukocytosis of 10.9 thousand/mm^3 stands out, associated with neutrophilia with total neutrophils of 10 thousand/mm^3. His electrolytes are within normal parameters with chlorine 98.9 mEq/L, sodium 137.37 mEq/L, and potassium 3.84 mEq/L. The rest of the laboratory results are shown (Table 1).

Table 1: Laboratory results on admission to the emergency department.

Lab tests	Results
Hemoglobin	12.2 gm/dL
Hematocrit	36.1%
Leukocytes	10.9 mil/mm^3
Neutrophils	10 mil/mm^3
Platelets	173 mil/mm^3
Glucose	186 mg/dL
Creatinine	0.77 mg/dL
Urea	37.39 mg/dL
BUN	17.45 mg/dL
Sodium	137.37 mEq/L
Potassium	3.84 mEq/L
Chlorine	98.0 mEq/L

BUN blood urea nitrogen

The patient is managed conservatively for 48 hours with placement of a nasogastric tube, which presents a gastric output of approximately 200cc. When no clinical improvement was obtained, simple abdominal and pelvic tomography was performed, which reported intestinal dilation at jejunum level with discrete fatty infiltration, uncomplicated colonic diverticular disease, type 1 hiatal hernia, probable bilateral renal complex cysts (Figure 2). It was decided transfer patient to operating room for exploratory laparotomy due to intestinal occlusion secondary to adhesions vs. internal hernia.

Figure 2: CT scan of the abdomen of dilated jejunal loop with diverticulum (arrow) with fatty infiltration.

The following surgical findings are reported: parietoepiploic adhesions, multiple loose small intestine-small intestine adhesions, fibrous adherence and kinking of the terminal ileus at 30 cm from the ileocecal valve, vestiges of enterotomy 20 cm from the ileocecal valve. The Treitz angle is located, at 10 cm and 40 cm fibrin plaques are observed and at 20 cm from it a jejunal diverticulum is located in the mesenteric edge of approximately 3×2 cm (Figure 3). Non-traumatic punctate perforation at 50 cm from Treitz angle, with induration on its periphery, with an internal orifice that ends in a blind fundus, in the same area a diverticulum is identified on the mesenteric edge. The jejunum is resected 10 cm proximal and 10 cm distal to the perforation and an end-to-end anastomosis is performed.

Figure 3: Jejunal diverticulum in the mesenteric edge of approximately 3×2 cm.

Diverticulitis with acute peritonitis in the mesenteric border negative for malignancy was reported by the pathology department (Figure 4).

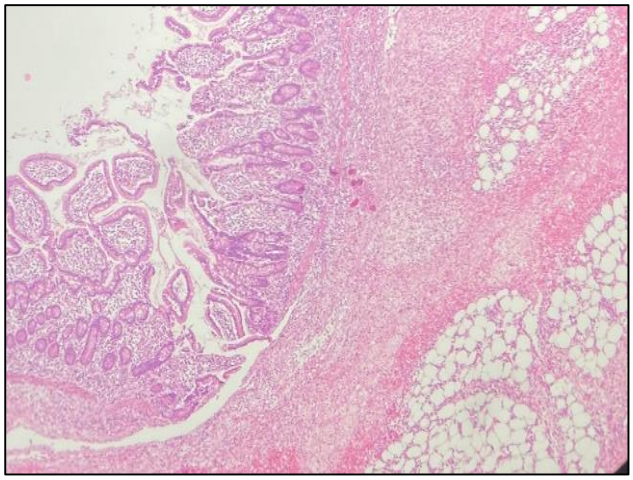

Figure 4: HE 10x, histological section showing segment of diverticular intestinal wall with mucosa and submucosa in the thickness of the wall and absence of muscle layer.

During his stay on the hospital, antibiotic therapy was administered in a double scheme and analgesia. On the third post-surgical day, she presented effective peristalsis, for which a liquid diet was started, which progressed, presenting emesis on two occasions, for which fasting was indicated again. On the fifth post-surgical day, a liquid diet was restarted, which progressed without complications in the following two days. The patient was discharged from the hospital due to improvement on the eighth post-surgical day. The patient is evaluated again 30 days after discharge with evident clinical improvement, asymptomatic, without post-surgical complications.

DISCUSSION

Non-Meckel's diverticula of the small intestine usually remain asymptomatic and their diagnosis is usually a finding on imaging or after complications such as diverticulitis (2-6%), diverticular bleeding, mechanical obstruction, perforation (2.1-7%), abscess, generalized peritonitis, fistula.[4,5,7] The management for this disease depends on the type of complication found: surgical management in those where there is compromise of the continuity of the intestine or bleeding, and conservative in case of bacterial overgrowth with antibiotic management.[8] In complicated cases, segmental enterotomy with primary anastomosis is recommended. The clinical presentation in case of a complication is an acute abdomen and, although the treatment is predominantly surgical, there are cases of self-limited inflammation that, in the absence of perforation, can be managed conservatively.[1-3,6,10]

The present case deals with a female patient in her tenth decade of life with an initial diagnosis of intestinal obstruction, who after conservative management presented exacerbation of abdominal pain, for which urgent surgical management was decided under the scoop of locating an intestinal adhesion due to the aforementioned multiple surgical history of the patient. As a finding, the reason for the pathology is observed: multiple jejunal diverticula, of which the most proximal of the small intestine is perforated, causing small intestine-small intestine adhesions which caused their kinking and consequently intestinal occlusion.

CONCLUSSION

Despite being a rare entity, small bowel diverticulitis should be included as a differential diagnosis in older patients presenting with abdominal pain, since its early diagnosis is associated with early management that decreases morbidity and mortality. The most useful diagnostic tool is the computerized axial tomography with which you can proceed to decide on conservative or surgical treatment based on the patient's presentation and the possible complication that is developing.

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