

Meckel's Diverticulitis and Reactive Appendicitis in an Adult Woman: Clinical Case

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ABSTRACT

Introduction: Meckel's diverticulum (MD) remaining from the yolk duct is the most common congenital anomaly of the gastrointestinal tract, with a prevalence of 2 percent in the general population. Most MDs are asymptomatic and usually discovered incidentally by imaging studies or during abdominal surgery. In countries with poor distribution of wealth, there is a rate of 4 to 6%. Age-related differences in presentation are observed, ranging from incidental findings to intestinal obstruction, bleeding, and inflammation. The difference between children and adults is that in the former, it presents as a hemorrhage, and in the latter, an obstruction. **Clinical Case:** A 54-year-old female was admitted to the emergency department due to abdominal pain with a history of previous abdominal surgery; she began suffering 24 hours ago with stabbing abdominal pain, located in the epigastrium and mesogastrium, of intensity 9/10 and radiating to the right iliac fossa; hyporexia, nausea, and vomiting of gastrobiliary content. She presented pain on palpation in the right iliac fossa and with decreased peristalsis; positive Blumberg, Rovsing, and MacBurny signs and identified a post-incisional wall defect.

Exploratory laparotomy was done, and the etiology of the obstructive process was discovered. Discussion: Since Meckel's diverticulum is rarely in adults, there is no consensus on what type of procedure to perform for symptomatic Meckel diverticulum and whether or not to resect an accidentally discovered. Treatment of symptomatic MD is definitive surgery, including diverticulectomy, wedge, and segmental resection. Laparoscopic diagnosis and treatment are possible today.

Keywords. Meckel's diverticulum, appendicitis, Intestinal obstruction, Diverticulectomy, Exploratory laparotomy.

INTRODUCTION

Meckel's diverticulum (MD) remaining from the yolk duct is the most common congenital anomaly of the gastrointestinal tract, with a prevalence of 2 percent in the general population. Most MDs are asymptomatic and usually discovered incidentally by imaging studies or during abdominal surgery. In countries with poor distribution of wealth, there is a rate of 4 to 6%. Observed age-related differences in presentation, ranging from incidental findings to intestinal obstruction, bleeding, and inflammation. The difference between children and adults is that in the former, it presents as a hemorrhage, and in the latter, an obstruction.

Intestinal obstruction may be due to intussusception, fibrous band volvulus, invasive carcinoid tumor, or incarcerated hernia. Inflammation is often the result of obstruction of the diverticular opening due to inflammatory tissue, enterolith, food, or other foreign body, diverticulitis, or tumor, and can lead to perforation and peritonitis. Sharp abdominal pain mimicking acute appendicitis is the most common symptom. The reported prevalence of Meckel's is between 0.3 to 3% of the general population, but other investigators, in autopsy studies, found a prevalence of 1%. (1, 2)

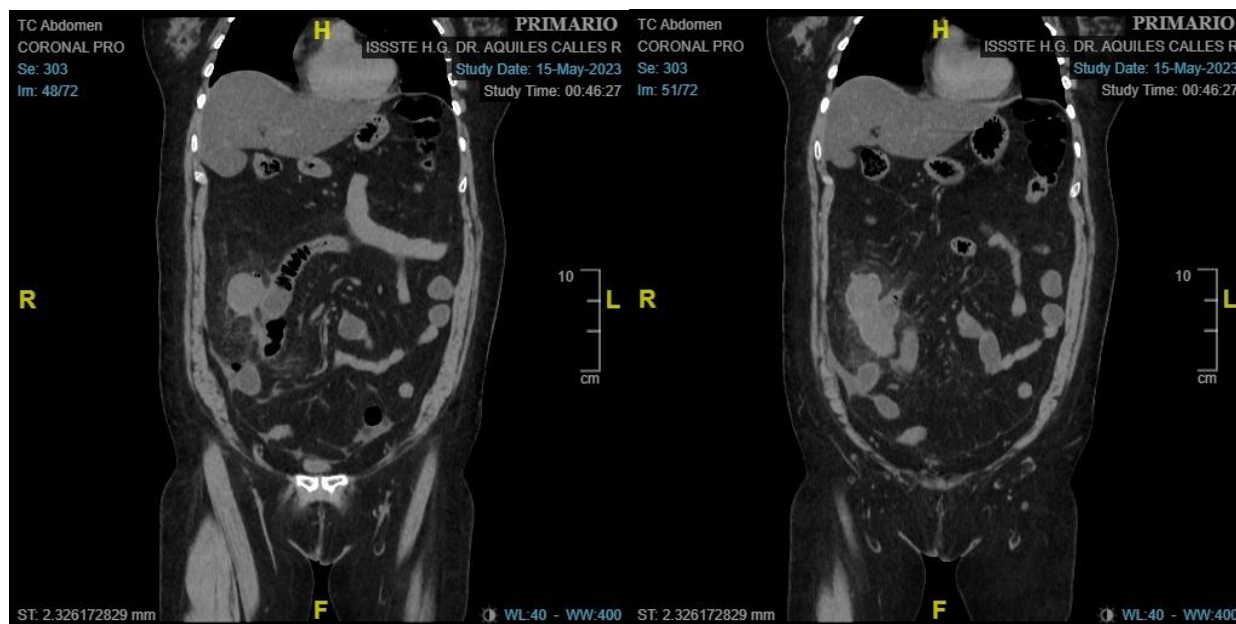
The most widespread complication of Meckel's diverticulum in adults is intestinal obstruction resulting from Meckel's diverticulum that occurs through different mechanisms such as intussusception, volvulus, abdominal wall hernia, Meckel's diverticulitis, entrapment of the intestinal loop under the mesodiverticular band, diverticulum lithiasis, the loop of ileum trapped by a band that extends between Meckel's diverticulum and the base of the mesentery, phytobezoar, gallstone ileus, and tumors (carcinoids, mesenchymal, lipomas, hamartomas, and others). The presentation of diverticulum-related obstruction may resemble other sources of small bowel obstruction (3).

CLINICAL CASE

A 54-year-old female was admitted to the emergency department due to abdominal pain with a history of previous abdominal surgery; she began suffering 24 hours ago with stabbing abdominal pain, located in the epigastrium and mesogastrium, of intensity 9/10 and radiating to the right iliac fossa; hyporexia, nausea, and vomiting of gastro biliary content. She presented pain on palpation in the right iliac fossa and with decreased peristalsis; positive Blumberg, Rovsing, and MacBurny signs and identified a post-incisional wall defect.

Laboratory studies showed leukocytosis with a predominance of neutrophils and abdominal ultrasound, with an image suggestive of a plastron and fixed loop, with little free fluid in the right iliac fossa. A simple abdominal and pelvic tomography was requested, in which the

observed hyperdense image at the level of the right flank, with striation of the fat adjacent to the cecum and a cyst dependent on the suitable annex.



Figures 1, 2: Simple abdominal and pelvic CT scan, sagittal cut where a hyperdense image is evidenced on the right flank with the presence of fat striations.

Made a diagnosis of acute appendicitis and performed an exploratory laparotomy. We found: free fluid in the cavity, phase II reactive appendicitis, multiple adhesions, and a 25-cm segment of necrotic intestinal loop located 50 cm from the ileocecal valve. Removed the necrotic portion with a linear stapler due to probable Meckel's diverticulum and appendectomy, and a post-incisional hernial defect was corrected. Pieces of the appendix, intestine, and omentum were sent for histopathological study, confirming the diagnosis of acute appendicitis, secondary to lymphoid follicular hyperplasia of reactive origin; diverticulitis with ischemic-necrotic changes; total transmural necrosis with formation of microabscesses in serosa and vascularized adipose tissue with clusters of superficial microabscesses. The patient had an adequate post-surgical evolution; she was discharged due to improvement.

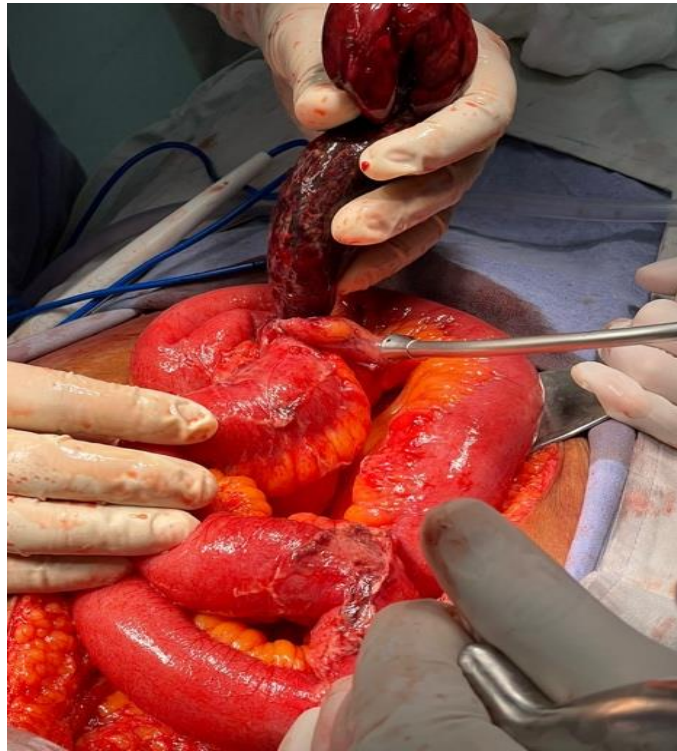


Figure 3: Meckel's diverticulum is strangulated by adhesion.



Figure 4: Meckel's diverticulum (left) and adherence (right) after clamping and separation.



Figure 5: The necrotic area covers approximately 25 cm in length and 10 cm in diameter, located 50 cm from the cecum. Is applied linear stapler for its extraction.



Figure 6: The area resected with a linear stapler without evidence of intestinal involvement.

DISCUSSION

The Bleeding is a common symptom of Meckel's diverticulum in children, and it also tends to present in this way in adults, Krstevski et al. (4) report a case of a 33-year-old female patient who presented with a three-day history of abdominal pain, malaise, and maroon discoloration and liquid stools. They observed abdominal distension and non-specific abdominal pain in the periumbilical and epigastric regions. A digital rectal examination showed maroon-colored

stools. Her case demonstrates that Meckel's diverticulum can manifest with life-threatening blood loss even in adults. Acid suppression can favorably alter the disease course of Meckel's diverticulum when ectopic gastric mucosa is present, allowing diagnosis and optimizing conditions for definitive surgical treatment (4).

On the other hand, this disease can also present in childhood as an obstructive process, such as that presented by Bhattarai et al. (5) in three cases of obstruction in minors, the first in an 18-month-old boy where laparotomy revealed dilated bowel loops with a band arising from the tip of Meckel's diverticulum surrounding the terminal ileum causing proximal dilation. Observed the band was released, and the 15 cm diverticulum was proximal to the ileocecal junction. The second case was in another two-year-old boy where laparotomy revealed dilated bowel loops with band obstruction arising from the tips of Meckel's diverticulum passing over the bowel 40 cm proximal to the ileocecal junction causing above and below dilatation. The last case of the collapsed intestine was in another 9-year-old boy where a laparotomy revealed dilated intestinal loops with a diverticulum 15 cm proximal to the ileocecal junction approximately 3 cm long with a broad base. The fibrotic band arose from the base of the diverticulum passing over the contiguous intestine and adhering to the mesentery, causing proximal intestinal dilatation and collapse of the distal intestine. Sectioned the band and did diverticulectomy.

Internal hernia refers to the displacement of the abdominal, internal organs from their original position through a normal or abnormal channel or fissure in the abdominal cavity into an abnormal cavity. Internal hernia is one of the rare causes of acute abdomen. It is often secondary to abdominal adhesions or iatrogenic mesenteric defects caused by previous abdominal surgery, a history of previous abdominal surgery in our case, although a small number of patients without prior abdominal surgery. Can develop an internal hernia such as a para duodenal or hernia through Winslow's Foramen (6).

Axial torsion is a rare complication due to the presence of a mesodiverticular band and having a narrow base creating an opening for internal herniation of the intestine. Elective resection is not recommended in Meckel's diverticulum found incidentally on imaging or in asymptomatic patients > 50 years of age when found during an abdominal examination. Computed tomography, including enterography, technetium-99 pertechnetate single-photon emission computed tomography, and resistance index scintigraphy, can show typical imaging features of Meckel's diverticulum (7).

Dos Santos Villalaz et al. (8) present the case of a 26-year-old patient who was admitted to the emergency room complaining of pain and abdominal distension for three days, progressing to cessation of gas elimination for one day, along with nausea and vomiting. Was not identified as the cause of the obstruction, the patient's clinical status did not improve with non-surgical measures, and laparoscopy was not available; exploratory laparotomy found—a 20 cm wide Meckel's diverticulum in the terminal ileum attached to the distal anterior abdominal wall.

Since Meckel's diverticulum (DM) is rarely diagnosed in adults, there is no consensus on what type of procedure to perform for symptomatic MD and whether or not to resect an accidentally discovered MD. Treatment of symptomatic MD is definitive surgery, including diverticulectomy, wedge, and segmental resection. The type of procedure depends on (a) the integrity of the base of the diverticulum and the adjacent ileum; (b) The presence and location of ectopic tissue

within MD. The presence of ectopic tissue cannot be accurately predicted intraoperative by palpation and gross appearance. When the indication for surgery is uncomplicated diverticulitis, performed diverticulectomy for a long time and wedge resection for short MD short. Performed a wedge or segmental resection when the indication for surgery is complicated diverticulitis with a perforated base, complicated intestinal obstruction, and tumor. When the indication for surgery is hemorrhage, coining and segmental resection are the preferred methods for resection. As for the management of incidentally discovered MD, it is not indicated routine resection. Decision-making should only be based on risk factors for developing future complications, such as (1) patient age less than 50 years; (2) male gender; (3) diverticulum length >2 cm; and (4) ectopic tissue from characteristics can be used to show typical imaging features of Meckel's diverticulum performed by extended and wedge resection for short DM. Diagnostic laparoscopy with laparoscopic resection is possible and safe for these cases.

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