

Intestinal Occlusion Secondary to Meckel's Diverticulum: Clinical Case

Ramírez-Vázquez, José Luis

General Surgery Resident, Manuel Ávila
Camacho IMSS National Medical Center, Puebla, México

Rosas-Zamora, Alma Jocelyn

General Surgery Resident, Manuel Ávila
Camacho IMSS National Medical Center, Puebla, México

Rodríguez-Trejo, Manuel José

General Surgery Resident, Manuel Ávila
Camacho IMSS National Medical Center, Puebla, México

Falcón-Cancino, Luis Arturo

General Surgery Resident,
Mérida ISSSTE Clinic-Hospital, Yucatán, México

Padrón-Arredondo, Guillermo

General Hospital of Playa del Carmen, Quintana Roo, México

ABSTRACT

Introducción: The diverticulum results from fibrous obliteration of the umbilical portion of the omphalomesenteric duct, together with the persistence of the ileal portion of the duct, and most of them remain asymptomatic. The diagnosis of Meckel's diverticulum can be a challenge since when it presents symptoms, it does so insidiously and obscures the diagnosis. A high percentage of the complications in adults can be intestinal occlusion. **Clinical Case:** Is presented the clinical case of a 37-year-old male patient with a diagnosis of acute abdomen, initially considered to be of appendicular origin, with subsequent diagnostic rectification at the time of performing a surgical approach, finding a necrotic Meckel's diverticulum, which caused intestinal obstruction, with subsequent confirmation by pathology report. Recovery after surgery was satisfactory. **Discussion:** Meckel's diverticulum presents the most frequent congenital gastrointestinal malformation and is generally asymptomatic in adults, it can be found as atypical abdominal pain and a fortuitous discovery during surgery for another cause. 1) The rule of two, although ambiguous, can help to suspect and locate the pathology more easily. When Meckel's diverticulum presents clinical manifestations, they are usually non-specific and therefore diagnosis is difficult, even despite studies such as ultrasound or tomography. 2) The presence of symptoms is generally due to the development of complications. **Conclusions:** Meckel's diverticulum is a congenital anomaly, which occurs in a low proportion of the population, is diagnosed more frequently in

men and is usually an incidental finding during the intervention due to lack of suspicion.

Keywords: Intestinal occlusion; Diverticulum; Meckel; Diverticulitis; Congenital.

INTRODUCTION

Meckel's diverticulum is the most common congenital anomaly of the gastrointestinal system. The first descriptions were recorded by Fabricus Hildanus in 1650. However, the name was attributed to the comparative anatomist Johann Friedrich Meckel, who established the embryonic origin in 1809 (1). It represents a persistent remnant of the omphalomesenteric duct. It is a true diverticulum formed by the three layers of the intestinal wall arising from the antimesenteric border of the middle to distal ileum. Usually follows the rule of 2: presentation at two years, 2% of the population, male/female 2:1, 60cm from the ileocecal valve (range 15cm-120cm), 2 inches in length, containing two types of tissue. It may contain ectopic tissue such as gastric mucosa 12-26%, duodenal, colonic, or pancreatic 5% (2).

It is sometimes called the great malingerer and may be responsible for non-specific symptoms. Studies such as ultrasound and tomography have little diagnostic value when there are no symptoms, although, in case of complications, tomography can be helpful. Capsular endoscopy can show the orifice of the diverticulum, although there may be capsular sequestration (3). Technetium 99 pertechnetate scintigraphy is a study with 85% sensitivity and 95% specificity. However, exploratory laparoscopy leads to the correct diagnosis. In active bleeding, an examination with radiolabeled red blood cells is indicated (4).

The symptoms occur in 4.2% of people with this condition, predominantly men. Among the most frequent complications are intestinal obstruction (40%), gastrointestinal bleeding (23%), and inflammation (58%), present both in adults and pediatrics. However, diverticulitis is more common in adults than in children. The complications are reducing their presentation from age 40 and being null after age 70 (5).

When choosing among the different procedures for the resection of a Meckel, diverticulectomy and segmental resection of the ileum should be preferred in broad-based Meckels to avoid restricting the intestinal lumen, as well as in bleeding Meckels to ensure complete resection of any ectopic gastric tissue—and intestinal ulcer (6).

CASE PRESENTATION

A 37-year-old male attends with no significant history. With a clinical picture of 3 days of evolution, with symptoms compatible with intestinal occlusion, she went to the emergency department, with the following laboratory results: hemoglobin of 14 g/dl, leukocytosis of 16,000 mm³, with polymorphonuclear cells of 85%. Prothrombin time 13 seconds at 80%. Normal urine test. Creatinine and transaminases without alterations, rest of studies without alterations, the performance of an abdominal X-ray with the presence of air-fluid levels, without distal gas, inter-loop edema (Fig. 1).



Figure 1: Presence of inter-loop edema and air-fluid levels.

They have decided on surgical intervention due to the onset of systemic inflammatory response data despite medical treatment with a report of vital signs of heart rate 110, respiratory rate 24, temperature 38.5, and blood pressure 143/82. With the diagnosis of the acute abdomen of probable appendiceal origin, they proceeded to a laparotomy through a median infra-umbilical incision. The findings were: dilation of small intestine loops, with 500cc fluid from the inflammatory reaction, with necrosis of Meckel's diverticulum 85 cm from the ileocecal valve, perforated, with trapped intestinal loop, rest of cavity without significant findings. Is made a wedge incision on the antimesenteric side, resection of the diverticulum, and posterior whole-whole anastomosis in two planes, the first plane with 3-0 vicryl and Connell-Mayo stitches, a second plane with 3-0 silk and Lembert stitches (Fig. 2).



Figure 2: Visualization of Meckel's diverticulum with necrosis data without presenting perforation or delimitation of the area of necrosis.

A patient who, during his post-surgical surveillance, presents a good evolution. With the start of the oral route three days later, with an analgesic based on NSAIDs and opioids, a third-generation cephalosporin antibiotic, and after a seven-day hospital stay, his discharge was decided with Finding by histopathology report of Meckel's Diverticulum with acute erosive and hemorrhagic diverticulitis, diverticulum with the presence of gastric tissue (Fig. 3).

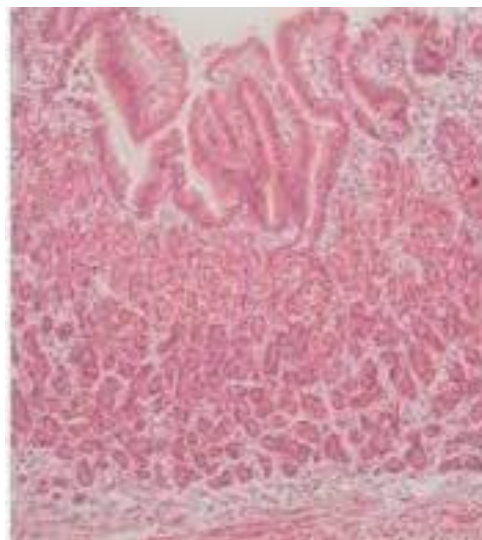


Figure 3: Histological section of Meckel's diverticulum, with the presence of necrosis and gastric tissue areas.

After three months of follow-up and without presenting any other eventuality, his discharge from the surgical service.

DISCUSSION

Meckel's diverticulum presents the most frequent congenital gastrointestinal malformation and is generally asymptomatic in adults; it can be found as atypical abdominal pain and a fortuitous discovery during surgery for another cause (1). Although ambiguous, the rule of two can help suspect and locate the pathology more easily. When Meckel's diverticulum presents clinical manifestations, these are usually non-specific, and therefore, diagnosis is difficult, even despite studies such as ultrasound or tomography (2). The presence of symptoms is generally due to the development of complications. The risk of generating them is 4.2%. The incidence of complications decreases as the age of the patients increases (3). The most common complication in children is bleeding, usually presented as hematochezia. However, complications of Meckel's diverticulum in adults include intestinal obstruction, hemorrhage, acute diverticulitis, or a diverticulum in a hernial sac.

A Meckel's diverticulum should always be considered in the differential diagnosis of patients presenting with mechanical intestinal obstruction with; Low slight bowel bleeding or signs and symptoms of inflammation or peritonitis in a middle-aged patient. Treatment consists of immediate surgical intervention with resection of the diverticulum or the segment of the ileum that houses it, depending on the base of the diverticulum and the surgeon's experience in terms of technique (4, 5). Segmental intestinal resection is required in patients with hemorrhage because the hemorrhagic site is usually the ileum adjacent to the diverticulum. In this case,

segmental necrosis was present, which made it possible to identify the affected site more precisely. The approach can be performed openly or laparoscopically depending on the hemodynamic status of the patient and the resources available at the time (6). The post-surgical evolution in the vast majority is favorable, with a low mortality rate.

CONCLUSION

Meckel's diverticulum is a congenital anomaly, which occurs in a low proportion of the population, is diagnosed more frequently in men, and is usually an incidental finding during the intervention due to lack of suspicion.

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