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Case Report

A case report of complicated Meckel's diverticulum in an older adult: a diagnostic challenge

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ABSTRACT

Meckel's diverticulum represents a diagnostic challenge as it is often discovered incidentally during the evaluation of symptoms initially attributed to other causes or is identified as a trans-surgical finding during surgery. The three most common manifestations of symptomatic Meckel's diverticulum are intestinal obstruction, gastrointestinal bleeding and inflammation with or without perforation. This case report discusses the complications of Meckel's diverticulum and the importance of suspicion as a differential diagnosis in older adult patients presenting with acute abdomen.

Keywords: Meckel's diverticulum, Intestinal perforation, Elderly patient, Acute abdomen

INTRODUCTION

The most frequent congenital malformation of the gastrointestinal tract is Meckel's disease, which is due to the persistence of the omphalomesenteric duct.[1] The prevalence is in the low range, having been documented at 0.3-2.9%; it is much more frequent in the pediatric population; however, it can persist asymptomatic until adulthood.[2,3]

A classic way of describing its main characteristics is by the "rule of two." It affects 2% of the population, with a male-to-female ratio of 2:1, located less than 2 feet from the ileocecal valve; its length is around 2 inches; and it can contain two types of ectopic mucosa: gastric and pancreatic.[3,4] The importance of ectopic tissue lies in the pathophysiology of the disease since gastric mucosa, through acidic secretions, is responsible for causing diverticulitis with progression to perforation and peritonitis.[5] In this report, we present a case of intestinal perforation caused by Meckel's diverticulum in an adult patient.

CASE REPORT

79-year-old female with a history of hypothyroidism, no previous surgeries, no other relevant history. The current condition began on 17 January 2025 with abdominal pain in the epigastrium, with migration to the periumbilical region accompanied by nausea, vomiting and feverish peaks of 3 days of evolution, so she went to the emergency department for evaluation, among the relevant findings in the physical examination were identified distended abdomen, decreased peristalsis, painful on palpation in the right iliac fossa, negative McBurney and Rovsing signs, laboratory studies with elevated leukocytes at the expense of neutrophils, abdominal tomography was performed with a report of acute

appendicular process, so she was admitted for diagnostic laparoscopy on 20 January 2025 with the findings of plastron in the right iliac fossa, free liquid in the pelvic cavity, a reactive appendix was identified, so a cavity revision was performed and at 50 cm from the ileocecal valve an image compatible with perforated Meckel's diverticulum, so a resection of 5 cm distal and proximal to the diverticulum was performed with isoperistaltic latero-lateral mechanical anastomosis (Figure 1).

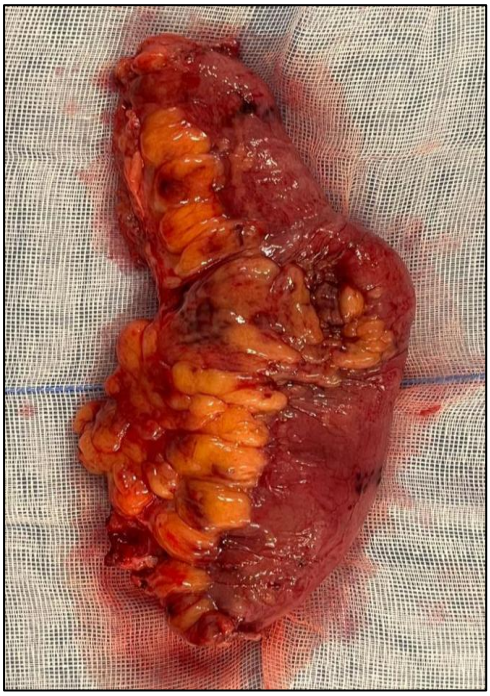

Figure 1: Resection of Meckel's diverticulum.

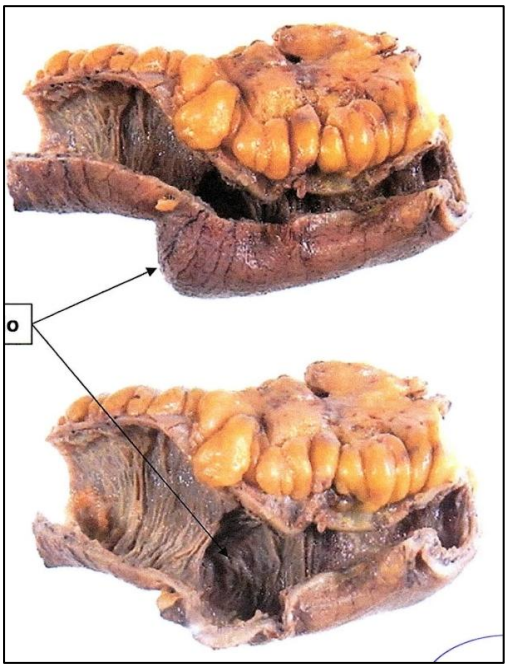

Figure 2: Pathological specimen of Meckel's diverticulum.

The cavity was washed, and Blake type drainage was left for follow-up. The patient had a good postoperative evolution, so she started a diet 24 hours after surgery and was discharged to the outpatient clinic 72 hours after surgery. The pathology report showed Meckel's diverticulum with intestinal type lining with ischemic and ulcerative changes of the mucosa (Figure 2). The patient was referred for revision 2 weeks after surgery, the wounds were well healed, with no evidence of incisional hernia, and due to adequate evolution, she was discharged from the general surgery service.

DISCUSSION

The incidence of Meckel's diverticulum is low and it is a condition that predominantly occurs in children, the prevalence of symptomatic disease decreases with age, the lifetime risk of developing symptomatic Meckel's diverticulum is estimated to range from 4.2% to 9.0%.[2,3]

Etiologies of symptomatic Meckel's diverticulum include: Intestinal obstruction (35.6%) caused by invagination of the diverticulum into the lumen of the small intestine, inflammation of the diverticulum (29.4%) which may manifest with or without intestinal perforation that may result in peritonitis, and gastrointestinal bleeding (27.3%) due to acid production by ectopic gastric mucosa in the diverticulum damaging the intestinal lumen.[5-7]

The clinical presentation depends on the complication presented, from intestinal bleeding to acute abdominal data, this disease is frequently confused with acute appendicitis, diverticular disease or inflammatory bowel disease.[6] The diagnosis is uncertain due to the variety of symptoms that may present, although imaging studies such as ultrasound, angiography, computed tomography and magnetic resonance imaging are available, however the sensitivity and specificity are low.[2-6]

The treatment of choice for a symptomatic Meckel's diverticulum is surgical resection, which can be wedge resection or segmental bowel resection for diverticula larger than 2 cm either by laparoscopic or open approach.[6,7]

CONCLUSION

Although Meckel's diverticulum is a predominantly pediatric entity, it should be considered as a differential diagnosis in older adults with acute abdominal symptoms. The unspecificity of the symptoms and its similarity with more frequent abdominal pathologies, such as appendicitis, makes its preoperative diagnosis difficult. This case highlights the importance of a thorough laparoscopy when the clinical findings are not congruent with the initial diagnosis, allowing the identification of unusual pathologies such as perforated Meckel's diverticulum. In this case, laparoscopic resection and anastomosis was performed, with adequate evolution.

Clinical suspicion and surgical experience continue to be key elements for a successful approach.

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