

Meckel's Diverticulum: Bibliography Review and Presentation of a Case

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Meckel's diverticulum is the most prevalent congenital anomaly of the gastrointestinal tract, is a true diverticulum because it contains all the layers of the intestinal wall. It is usually found within 100 cm of the ileocecal valve, is more frequent in men and children with congenital malformations. The diagnosis of symptomatic diverticulum is rare because there is not a specific clinical sign. Treatment of the symptomatic diverticulum is diverticulectomy or intestinal resection, asymptomatic case is still controversial. We reported the case of a male of 24 years old who had acute abdomen, the management was a laparotomy finding diverticulitis of a Meckel's diverticulum. Intestinal resection was the decision in the case with entero-anastomosis in two planes with clinical good response.

Keywords: Meckel's Diverticulum; Acute Abdomen; Diverticulectomy; Intestinal Resection

Introduction

The first description of Meckel's diverticulum is attributed to Fabricius Hildanus in 1598 [1], later in 1742 a strangulated diverticulum in an inguinal hernia was described by Littre [2], but it is not until 1809 when Johann Friedrich Meckel the Younger [3] first published his anatomical and embryological observations of the diverticulum that bears his name.



Figure 1: Johann Friedrich Meckel the younger (1781-1833).

From: Rudolf Beneke. Johann Friedrich Meckel der Jungere (Halle, 1934) (photo courtesy of Dittrick Museum of Medical History).

Meckel's diverticulum is the "ideal" diverticulum, since it contains all the layers of the intestinal wall, from 50% to 60% of cases, ectopic tissue is present [4] predominantly 60% of gastric mucosa, but also pancreatic acini, Brunner glands, pancreatic islets, colon mucosa, endometriosis or hepatobiliary tissue may be present [5-10]. Its result is due to an error in the process of obliteration of the vitelline duct during the fifth week of fetal development [2,5]. With or without connection to the navel or mesentery, Meckel's diver-

ticulum represents 90% of all vitelline duct abnormalities [2]. The site of the diverticulum in relation to intestinal length varies but is usually within the first 100 cm of the ileocecal valve with a case reported at 180 cm [5]. Usually the diverticulum is 3 cm long [5-7], 90% of the cases are from 1 to 10 cm [5].

Meckel's diverticulum is the most common congenital anomaly of the gastrointestinal tract with a condition of 2% of the general population [5]. Autopsy reports and various retrospective studies range from 0.14 to 4.5 percent [4,5,11-13]. The diverticulum is more common in men with a ratio of 3:2 [5]. There is a considerable increase in the incidence of Meckel's diverticulum in children born with: exophthalmos, cleft palate, bicornuate uterus, annular pancreas, esophageal or anorectal atresia or severe malformations of the central nervous system or cardiovascular system [14], as well as being more common in patients with Crohn's disease than in the normal population [15]. It is possible that malignancy develops in the Meckel's diverticulum with a reported frequency from 0.5 to 4.9% of patients with complications with diverticula, sarcomas are the most frequent neoplasms followed by carcinoids and adenocarcinomas [4].

Since there is no symptom or sign that by itself characterizes the Meckel's diverticulum, its diagnosis is difficult. Diagnosis should be considered in every person with abdominal pain associated with nausea, vomiting or bowel bleeding [16,17], in addition, the diverticulum can simulate a variety of common clinical conditions, mainly of the gastrointestinal type. Acute appendicitis is the most commonly diagnosed preoperatively in the complications of Meckel's diverticulum [18].

Preoperative diagnosis of Meckel's diverticulum in a symptomatic patient is achieved in less than 10% [6]. Gastrointestinal series with contrast medium are of limited utility and the reported results are very varied. Computed tomography scan is nonspecific but may be helpful in diagnosis [19-21]. The most useful study method in the detection of Meckel's diverticulum is scanning with technetium-99m pertechnetate, as long as there is heterotopic gastric mucosa [18,22-24]. In situations where scanning is not available, ultrasound is perhaps the most useful and available method of diagnosis [20].

The surgical treatment of Meckel's diverticulum can be addressed both openly or laparoscopically, without changing the principles for resection, both the diverticulum and its associated bands must be resected and properly manage the intestine involved [18]. Currently there are two ways to perform surgical treatment, performing simple diverticulectomy or ileal resection, the latter is preferred in cases of diverticular bleeding, inflammation, perforation or presence of a tumor. The treatment for asymptomatic Meckel diverticula is still controversial, for many years the main management was only conservative this has been changing in recent years, however either the resection or the conservative treatment should be individualized management depending on the comorbidities, patient status or data that could complicate the patient's clinical diagnosis in the future.

Figure 2: Meckel's diverticulum photo in a top view. Longitudinal cut observing all its layers.

Clinical Case

24-year-old male goes to the emergency room for presenting abdominal pain of 12 hours of evolution associated with nausea without another symptom or apparent cause, does not refer a known surgical or allergic history.

Figure 3: Meckel's diverticulum photo in a side view observing its anti-mesenteric border.

Abdominal radiography shows only dilation of handles without showing another alteration. Laboratories hemoglobin 12.4, hematocrit 36%, leukocytes 12.4, neutrophils 70%, platelets 250 000, glucose 90 mg/dL, creatinine 0.7 mg/dL, sodium 142 mEq, potassium 4.5mEq, prothrombin time 12.2", thromboplastin time 19.5". An exploratory laparotomy is performed with the presurgical diagnosis of acute appendicitis

A surgical procedure is carried out, beginning with an incision on the midline diuresis by planes to the abdominal cavity, finding a low serous free fluid, the appendix with a normal macroscopic appearance, the bowel revision shows the presence of diverticulum of 6 cm, 70 cm from the ileocecal valve, inflamed and erythematous without evidence of perforation, resection of the diverticulum is performed and primary anastomosis in 2 planes is done, tissue is sent to histopathology.

On the fourth day, an oral diet begins, presenting adequate evolution and discharged on the fifth day.

Conclusion

The symptomatic Meckel's diverticulum is a difficult entity to diagnose, so it requires a high index of suspicion for proper treatment.

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