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Case Report

Complicated Meckel's Diverticulum: About a Case Treated at the Sino-Central African Friendship University Hospital in Bangui

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Abstract

Meckel's diverticulum is a remnant of the omphalomesenteric duct. It is an evagination of the lining of the small intestine that is present in some children at birth. Meckel's diverticulum is a rare condition in adults. It is often discovered incidentally to laparotomy performed for an acute surgical abdomen. We report the case of a 20-year-old man, hospitalized and treated at the general surgery department of the Sino-Central African Friendship University Hospital in Bangui from September 22 to 30, 2023. He had frank peritoneal syndrome and laparotomy we discovered a small bowel volvulus on Meckel's diverticulum located about 30 cm from the ileocecal junction. The strangulation was lifted, the diverticulum resected at its base, and the intestine sutured. A principled appendectomy was performed. The post-operative period was simple.

Keywords: Meckel's Diverticulum; Acute Intestinal Obstruction, Acute Peritonitis; Central African Republic

Introduction

Meckel's diverticulum is a remnant of the omphalomesenteric duct. According to the literature**,** Meckel's diverticulum is a persistence of the omphalomesenteric duct first described in 1598 [1,2]. It is the most common birth defect of the digestive tract. Meckel's diverticulum is a rare condition in adults. It is often discovered incidentally to laparotomy performed for acute surgical abdomen [3-5]. The aim of our study was to describe the profile of the first case of Meckel's diverticulum recorded in the Central African Republic as well as the diagnostic difficulties.

Observation

Mr. A. Assane, a male driver, aged 23, was seen on September 22, 2023 at the general surgery department of the Sino-Central African Friendship University Hospital for abdominal pain accompanied by liquid vomiting and the notion of stopping matter and gases. These signs had been evolving for 48 hours. The patient had consulted at an urban health centre on 21 September 2023 where he received treatment including administration of Ceftriaxone 1g, quinine and analgesic treatment with Novamine without improvement. On September 22, 2023, the patient was referred to our consultation

for acute abdominal pain syndrome. On admission the general condition was good, the axillary temperature 37.8° Celsius; blood pressure 120/70 mm of mercury, heart rate 100 beats/min, oxygen saturation (So2) 98%. The abdomen was flat on examination, with discrete protrusion of the rectus muscles. Pain with abdominal guarding predominating in the iliac fossa and abdominal contracture were noted. Decompression of the umbilicus was very painful (umbilicus cry). The abdomen was silent on auscultation. Rectal examination was normal, as was examination of the other systems (urogenital, cardiovascular, pleuropulmonary, etc.). This clinical picture suggested acute generalized peritonitis, probably of appendicular origin. An unprepared X-ray of the abdomen showed aerocolic images, with dilated and ringed loops (Figure 1).

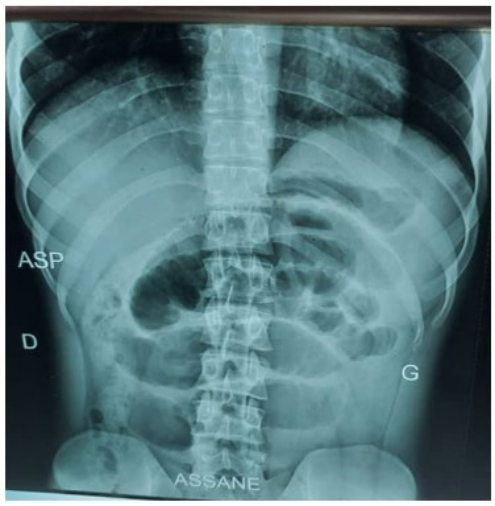

Figure 1: X-ray of the abdomen without preparation of A. ASSANE.

A laparotomy was indicated, but performed the following day. The operation was performed under general anesthesia. The approach is a median straddling the umbilicus. Exploration of the abdominal cavity revealed a volvulus of the ileum formed through an orifice due to attachment of the distal end of the diverticulum to the mesentery (Figure 2). After releasing the flange, the strangulation was lifted. The diverticulum is located approximately 30 cm from the ileocecal angle (Figure 3). The freed ileal loop was normal in appearance (Figure 4). The diverticulum was resected at the base, followed by intestinal suturing. Appendectomy was performed as a matter of principle. The abdomen was closed plane by plane after a saline cleanse. Postoperatively, initial antibiotic therapy was continued (Ceftriaxone 1 g every 12 hours, Metronidazole 500 mg every 8 hours) and Novamine 500 mg every 12 hours. Post-operative management was straight forward, and the patient was discharged from hospital 8 days later.

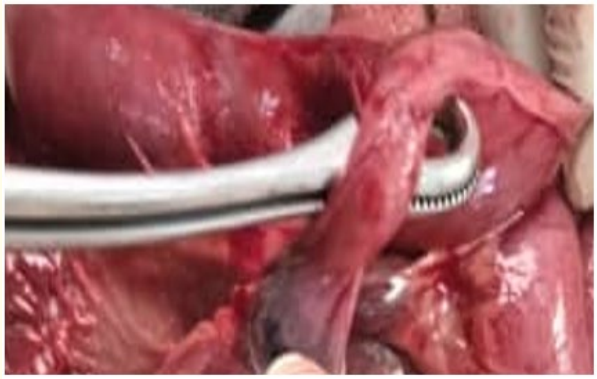

Figure 2: Strangulation ring formed by Meckel's diverticulum.

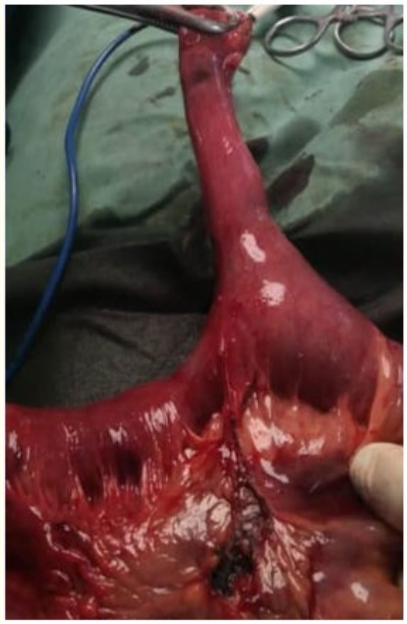

Figure 3: Meckel's diverticulum after proximal tip release from the diverticulum.

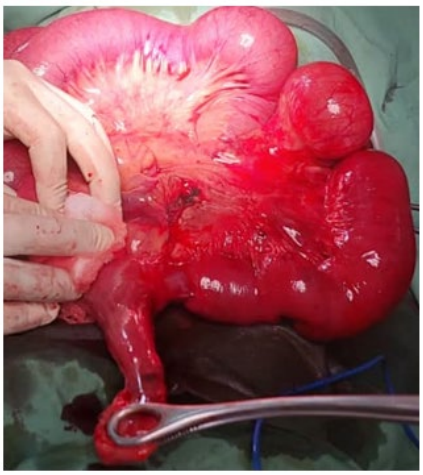

Figure 4: Condition of the ileal loop after release of the diverticular ring.

Discussion

Meckel's diverticulum is a rare condition in adults. According to the authors, its incidence is between 1 and 4% of the general population [1,2]. It is better known to paediatric surgeons than to visceral surgeons who treat adults [4]. Generally benign and asymptomatic, DM is a pathology of children but can manifest itself in adulthood.

It is often difficult to diagnose Meckel's diverticulum and is often and is only diagnosed incidentally or upon the occurrence of complications such as bowel obstruction, intussusception, perforation, and peritonitis [2]. In our case, the diagnosis was laparotomy performed for suspected peritonitis.

According to the literature, the location of Meckel's diverticulum is, between 10 and 100 cm compared to Bauhin's valve [2]. In the case of our study, the diverticulum was located about 30cm from the ileo-cecalal junction.

Because Meckel's diverticulum is rare in adults, there are few studies in the literature, with the majority of publications being clinical cases or small series [4,5]. The treatment of Meckel's diverticulum uncomplicated by incidental discovery is controversial. On the other hand, when faced with a complication, resection of the small bowel on either side of the diverticulum, followed by a terminoterminal anastomosis segmental is the method of choice [1,5,7]. In our case, the diverticulum was resected at its base and the intestine sutured. The risk in this case would then be to leave ectopic tissue in place as reported by several other studies [1,2]. According to the literature, Meckel's diverticulum has an ileal histological structure, within which patches of ectopic mucosa, most often gastric, but also pancreatic, duodenal, colic, endometrial, Brunner's glands, and even hepatobiliary tissue can develop [5]. In our case, the surgical specimen not be examined by the pathology laboratory to allow us to determine the histological structure. The patient was unable to pay the costs of the examination. In some studies, such as the study by Diop A., *et al*. [1] complications have been reported but for our patient the postoperative period was simple.

Conclusion

The diagnosis of Meckel's diverticulum is mainly made intraoperatively when a complication occurs. Treatment is mainly surgical. It requires you to look for it every time you perform an appendectomy or laparotomy so as not to misunderstand it.

Conflict of Interest

Authors declare that they have no relationship of interest.

Authors' Contribution:

- Professor Antoine Doui Doumgba initiated and wrote the manuscript.
- Professor Timothée MOBIMA performed and interpreted the X-ray of the abdomen without preparation.
- All authors have read and approved the final version of the manuscript.

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