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Febrile Occlusion Due to Meckel's Diverticulum: A Case Report

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Abstract

The omphalomesenteric duct's remnant is known as Meckel's diverticulum. This diverticulum may bleed, swell up, or impede something. The 58-year-old man who had appendiceal peritonitis and required hospitalization at the University Hospital of Casablanca is the subject of the case study presented by the authors. The results of the surgery showed that there was a perforated appendix and a tiny bowel obstruction brought on by Meckel's diverticulum, which was the cause of the bowel distension. The outcome of the surgery was positive.

Keywords: Meckel's diverticulum, omphalomesenteric duct.

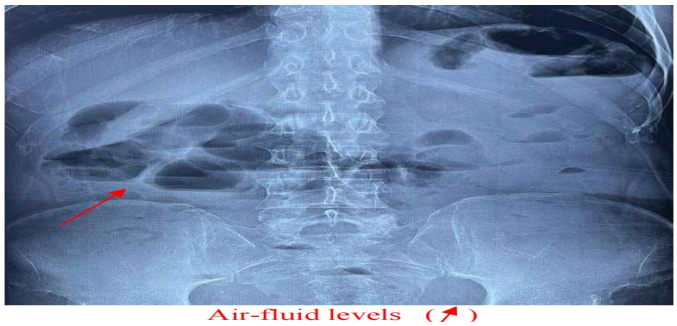
Introduction :

The embryo is made up of three germ layers during the first few weeks of embryonic development, which are the second- and fourth-weeks following conception: the mesoderm, endoderm, and ectoderm [1]. These layers come together in front of the umbilicus. The vitelline duct, also known as the omphalomesenteric duct, connects the midgut to the umbilicus. It typically vanishes with the retraction of the loops into the abdomen around the tenth week of embryonic development [1,2]. Meckel's diverticulum, a common congenital gastrointestinal tract defect that occurs slightly more commonly in boys, is the name given to the partial persistence of this duct [3, 4]. This disorder affects roughly 2–4% of the population, despite being rare [3]. Meckel's diverticulum, which is frequently asymptomatic, is usually found by accident or in the course of problems including diverticulitis, perforations, umbilical fistulas, intestinal obstructions, gastrointestinal hemorrhage, or tumor degenerations [3,5-8]. These issues are uncommon in adults and more common in children, particularly younger ones [9]. In this article, a 58-year-old patient receiving treatment at the University Hospital of Casablanca is described as having a clinical instance of appendiceal peritonitis with blockage caused by Meckel's diverticulum.

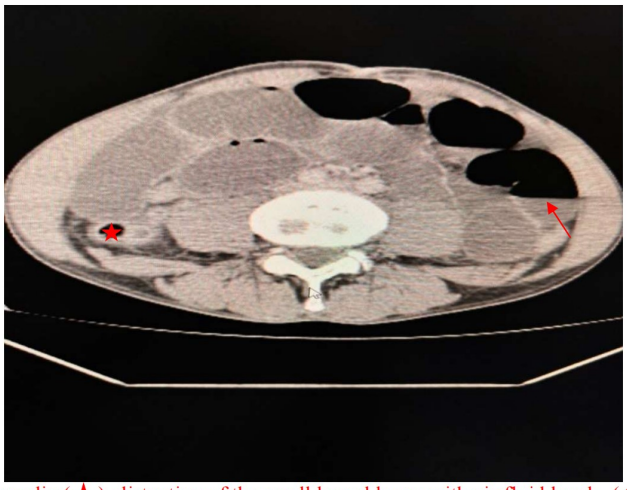
Presentation of case:

Three days before to admission, the 58-year-old male patient, who had stopped smoking a month earlier, complained of pain in the right iliac fossa and hypogastrium. The obstructive syndrome developed from these pains, which was characterized by no gastrointestinal bleeding, gas, and a stoppage of bowel movements and vomiting. Along with his minor temperature, his general health was unaffected. Upon assessment, the patient had a fever of 38.5°C, a performance status (PS) of 1, was alert, and had stable hemodynamic and respiratory conditions. Upon physical examination, there was distension of the abdomen along with pain in the hypogastrium and right iliac fossa. There were traces of normal-colored excrement visible on a digital rectal examination, and the physical examination revealed nothing unusual.

According to laboratory testing, the patient had a white blood cell count of 19,000 cells/mm³, a platelet count of 296,000 cells/mm³, and a hemoglobin level of 13.4 g/dL. A contrast-free abdominal X-ray revealed air-fluid levels in the small bowel loops. A large, mid-cecal appendix measuring 10.5 mm in maximum diameter with a wall thickness of 4.5 mm and a collection of 16.5 mm in diameter at the cecal base were discovered by abdominal pelvic computed tomography (CT). A 47 mm diameter air-fluid level without a transitional level and a moderate intraperitoneal fluid buildup in the Douglas pouch and inter-loop cavity were linked to small bowel distension.



Air-fluid levels (↗)



appendix (★) distention of the small bowel loops with air-fluid levels (↗)

The patient was brought into the surgery room immediately. Upon surgical investigation, a large amount of peritoneal effusion was found, and the turbid fluid was removed. The right iliac fossa, the Douglas pouch, and the inter-loop area all had adhesions. The proximal small intestine had a 4 cm distension due to a Meckel's diverticulum. Its body had an appendix that was large, inflammatory, and perforated, with a healthy base in the latero-cecal position. The patient had a double-barrel ileostomy, peritoneal lavage with saline, and drainage of the Douglas pouch after a retrograde appendectomy and resection of the small intestine, including the Meckel's diverticulum. On the third postoperative day, the patient was judged fit for discharge due to an uneventful postoperative recovery. The diagnosis of acute endoappendicitis with Meckel's diverticulum was validated by histopathological testing.

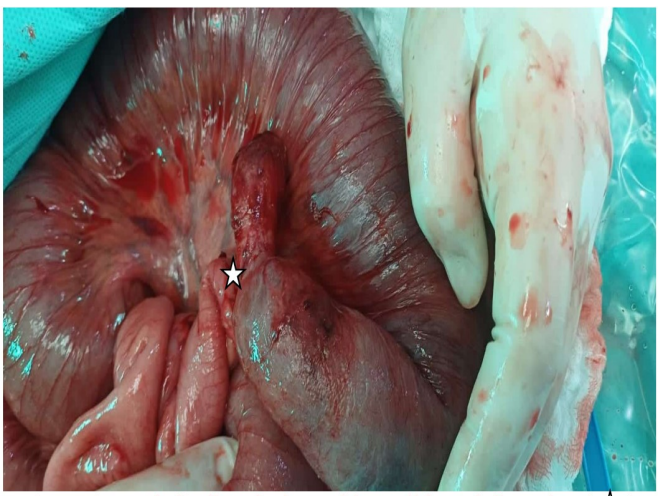


Figure 1: Meckel's diverticulum with small bowel distention (☆)

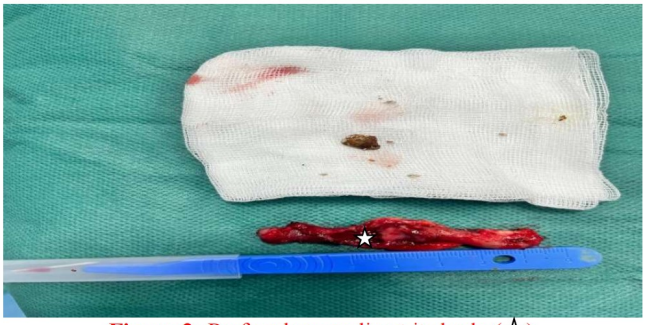


Figure 2: Perfored appendix at its body (☆)

Discussion :

Meckel's diverticulum, a congenital defect that affects 2–4% of the population, is caused by the omphalomesenteric duct's partial persistence [2,3]. It is frequently asymptomatic and is only identified until complications arise. Intestinal obstruction accounts for 24 to 53% of adult cases, making it the most prevalent consequence. The diverticulum may become fixed at a certain location in the belly, undergo volvulus, or undergo intussusception as possible mechanisms [5,6,9]. The man in the case study experienced intestinal blockage as a result of appendiceal peritonitis and Meckel's diverticulum. The diverticulum, which had intestinal-type mucosa and was 3 cm in diameter and 5 cm in length, was situated 60 centimeters from the Bauhin's valve.

Research indicates that mucosal heterotopias, such as pancreatic tissue or the stomach mucosa in 23–60% of cases, can be found in Meckel's diverticula. The average age of the 11 patients in a research by Edgar Ouangré et al. was found to be 29.8 years. Eight cases of intestinal blockage, including the Meckel's diverticulum, were found in this investigation. These cases required segmental ileal resection, followed by the restoration of intestinal continuity. In the instance under consideration, a double-barrel ileostomy was utilized in conjunction with intestinal resection to include the Meckel's diverticulum.

Conclusion :

Meckel's diverticulum is an uncommon congenital abnormality that is usually discovered by accident or during difficulties. It is frequently asymptomatic. Despite being rare in adults, it should be considered when diagnosing acute intestinal blockages, especially in younger patients who have never had abdominal surgery. The best surgical care can be provided with early identification, which improves clinical results.

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