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Radiology

Intestinal Occlusion on Fistulized Meckel's Diverticulum with Bridle

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Abstract **Case Report**

Meckel's diverticulum is the partial persistence of the omphalomenteric duct. It can be complicated by infection, perforation or fistulization thus creating an occlusion. We report the case of a 32-year-old patient presenting with intestinal obstruction and whose intraoperative finding was an occlusion on fistulized Meckel's diverticulum with bridle. The post-operative consequences are simple.

Keywords: Meckel's diverticulum, omphalomenteric duct, Intestinal Occlusion.

INTRODUCTION

Meckel's diverticulum (MD) is a remnant of the omphalomenteric canal, communicate the primary intestine to the umbilical vesicle, completely disappear around the 10th week of intrauterine life [1]. Its preoperatively discovery is often difficult and is only diagnosed incidentally or when complications such as gastrointestinal bleeding, intestinal obstruction, diverticulitis, intussusception, perforation and tumor degeneration occur [1]. We report the case of Meckel's diverticulitis fistulized with bridle complicated by intestinal obstruction in a young adult.

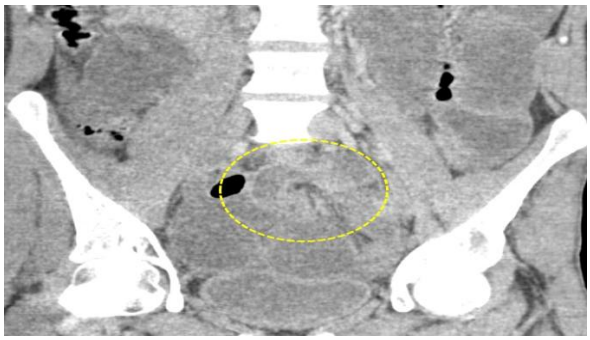
OBSERVATION

A 32-year-old mal patient who is chronically smoking, presented for presented for late food vomiting with inability to pass gas or stool associated with diffuse abdominal pain, evolving since a day, in a state of apyrexia and good general condition.

On clinical examination the patient was conscious, hemodynamically and respiratory stable. Abdominal examination revealed abdominal distension associated with diffuse abdominal tenderness. The hernial orifices were free and the digital rectal examination revealed an empty rectal vault.

The biological assessment shows a biological infectious syndrome with a hyperleukocytosis at 11600 /uL with a predominantly neutrophilic 9550 GB / mm3 and a high CRP at 141 mg / L. Abdominal X-ray showed multiple air-fluid levels in the small bowel. Abdominal CT scan confirm small bowel obstruction, upstream of a closed loop with bird beak sign at two locations and whirl sign at the level of the hypogastrium associated with low abundance peritoneal effusion in the pelvic floor (Fig 1).

(a)



(b)

Fig-1 Contrast-enhanced abdominal CT-scan, portal venous phase (a: axial cut; b: coronal cut)

Fig-1 (a and b) Shows Closed loop obstruction (cercle) with individualization of bird beak sign at two locations (arrow) associated with whirl sign (star) in the hypogastric region.

The patient was taken to the operating room and exploration revealed an enormous intestinal distension upstream of a closed loop surrounded by a bridle comes from an inflamed and fistulized meckel's diverticulum, this loop sits of areas of suffering (Fig 2 and 3).

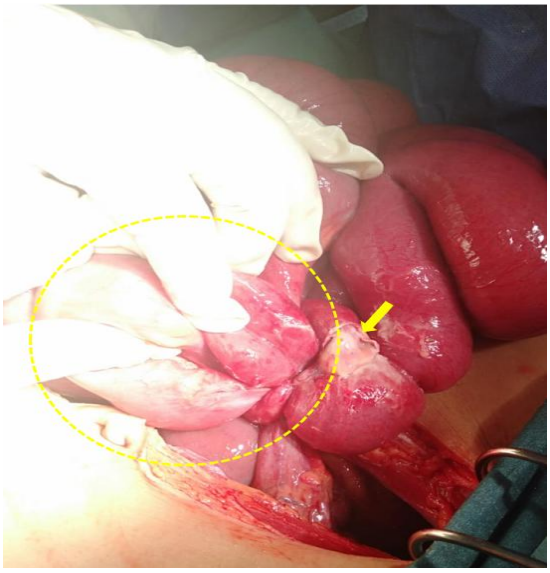


Fig- 2: Intraoperative image showing intestinal obstruction upstream of a volvulus of a small loop on a bridle between the loop and the diverticulum of meckel.

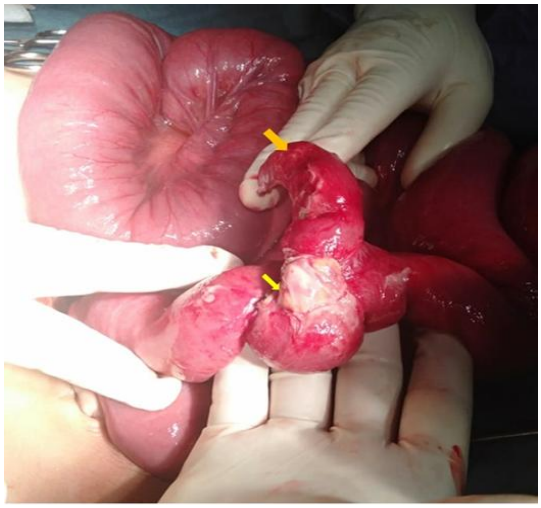


Fig- 3: Intraoperative image showing an infected and fistulized (yellow arrow) Meckel's diverticulum (orange arrow)

The operative procedure consisted of aspiration of the effusion, surgical debridement with a intestinal resection carrying the Meckel's diverticulum, 50cm from the ileocecal junction with end-to-end anastomosis. Antibiotics and analgesics are prescribed and taken with rehydration. The patient had good postoperative recovery without complications at routine outpatient follow-up.

DISCUSSION

Meckel's diverticulum is an embryological remnant of the omphalo-mesenteric duct. It is the most frequent congenital anomaly of the gastrointestinal tract encountered in 2 to 4% of the population, especially pediatric one [2, 3, 4]. However, they are not usually found in adults [1]. It is located in 50% of cases between 10 cm and 100 cm from the Bauhin valve; its average dimensions are 2 cm in diameter and 5 cm in length [5].

Meckel's diverticulum most often remains asymptomatic and is only diagnosed incidentally or during the onset of complications [2]. In intestinal obstruction, the most useful characteristic for the diagnosis of Meckel's diverticulum on abdominal X-ray is the identification of enterolites. They are usually seen on abdominal X-ray in the lower right quadrant of the abdomen and manifest as peripheral calcification with a radiolucent center and less often have a laminated appearance. However they may be present in the middle and upper abdomen if adhesions due to inflammation or congenital bands become attached and change the location of the diverticulum [3]. CT scan is the imaging modality of choice for the evaluation of patients with bowel obstruction. However, it is difficult to identify with precision a Meckel's diverticulum as the cause of intestinal obstruction as in the case of our patient [3].

Meckel's diverticulum can cause occlusion by diverticular inversion causing luminal obstruction or leading to intussusception; volvulus from persistent umbilicus attachment, congenital mesodiverticular adhesions or bands; diverticulitis; impaction of foreign bodies; inclusion of the diverticulum in a hernia; neoplasm; or forming a real knot [3.6].

Ultrasound may be useful in the evaluation of children with Meckel's diverticulum that manifests as a rounded or tubular cyst-like structure with a thick, irregular hyperechoic inner wall and a hypoechoic outer wall. [3]. Mechanical occlusion is the most common complication in adults, accounting for 24 to 53% of cases. Most often it is an occlusion with variable mechanism: volvulus, intussusception, fixation of diverticulum to the umbilicus or at any other point of the abdomen and fistulization with bridle [2].

Edgar Ouangré et al. carried out a series of 11 cases of Meckel's diverticulum including 8 cases of intestinal obstruction having undergone ileal segmental resection removing the Meckel's diverticulum with restoration of digestive continuity as in the case of our patient [1].

The diagnosis of Meckel's diverticulum constitutes a diagnostic challenge for the radiologist despite the progress of cross-sectional imaging. It should be known how to evoke it in young subjects, without surgical history, presenting an occlusive syndrome with free hernial orifices [2]. The prognosis depends on the early diagnosis.

CONCLUSION

The diagnosis of complicated Meckel's diverticulum is rarely clinically discussed because it lacks a typical telltale signs. It is necessary to know how to recognize it in the diagnosis of acute abdominal pain in order to best guide the surgical management. The CT scan can allow a precise diagnosis guiding therapy, evaluating the severity and above all ruling out differential diagnoses.

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