

Meckeldiverticuluma Difficult Etiologic Diagnosis of Intestinal Occlusion in Underdevelopped Country A Case Report.

Diouf Cheikh^{1*}, Sow Omar², Diallo Ibrahima³, Cissé Mamadou⁴, Ngom Gabriel⁵

¹Pediatric surgeon, Department of surgery and specialities, Ziguinchor regional hospital, Assane Seck université of Ziguinchor/ Senegal. E-mail: cdiouf37@gmail.com

²Ziguinchor regional hospital, Senegal; Tel: 00221 77 917 50 59; E-mail: sowomar506@gmail.com

³Ziguinchor regional hospital Senegal

⁴Department of surgery and specialities, Cheikh Anta Diop University of Dakar Senegal; E-mail: macisse22@yahoo.fr

⁵Department of surgery and specialities, Cheikh Anta Diop University of Dakar Senegal; E-mail: gngom2004@yahoo.fr

Received: 01 September, 2017; Accepted: 15 September, 2017; Published: 23 September, 2017

*Corresponding author: Cheikh Diouf, Pediatric surgeon, Department of surgery and specialities, Ziguinchor regional hospital, Assane Seck université of Ziguinchor/ Senegal. E-mail: cdiouf37@gmail.com

Abstract

Meckel's diverticula (MD) are often asymptomatic and of fortuitous discovery when performing an autopsy, a laparotomy or a laparoscopy. This congenital abnormality becomes clinically evident in cases of complications such as intestinal occlusion which is the most frequent one. The mechanisms are multiple: strangulation, invagination, volvulus and bridle. We report a case of MD discovered in a 15-year-old patient at the stage of acute intestinal occlusion with necrosis of the intestine in carcerated under a bridle connecting the MD to the sigmoid colon whose pathology of the operative part reveals a gastric heterotopia.

Keywords: Diverticulum, Meckel, Occlusion, Intestine

Introduction

Meckel's diverticulum (MD) is the result of persistence of the omphalo-mesenteric or yolk duct, which normally occurs between the 6th and 8th weeks of gestation. It is the most common of congenital anomalies of the gastrointestinal tract; it affects 2% of the general population [1]. Complicated forms represent 4 to 16% of MD; intestinal occlusion being one of the most frequent complications, with multiple mechanisms [2,3]. We report a MD observation complicated of acute intestinal occlusion with a histology showing gastric heterotopia lesions.

Patient and observation

It was a 15-year-old male patient without any specific pathological medical history admitted to the emergency for a 3-day evolving occlusive syndrome. Physical examination showed a fairly good general condition, a 38.5°C fever, a blood pressure of 110/80 mm hg, a pulse of 85 beats / min. The abdomen was distended, sensitive as a whole with a generalized defense. The

hernial orifices were free. The blood count and number showed a leucocytosis with 11000 elements / mm³ predominantly neutrophilic. A 127 Eqmol / l hyponatremia was noted. The abdomen X-ray showed an acute intestinal occlusion sign (Figure 1).



Figure 1: Xray: hail-like hydro-aerial levels

After resuscitation, surgical exploration by a median laparotomy had found incarceration of necrotic handles beneath a bridle connecting a MD to the sigmoid colon. Necrosis of the small intestine extended over a length of 80 cm from the ileocaecal junction (Figure 2).

The 5 cm long MD was located 60 cm from the ileocaecal junction on the anti-mesenteric border with a wide implantation base.



Figure 2: Pre-operative photography after intestinal resection with the Meckel's diverticulum.

We performed a section of the flange and a resection of the necrotic small bowel followed by an ileo-colic anastomosis. There were no drainage of the abdomen. The post operative management was simple. The anatomopathological examination of the surgical specimen showed gastric heterotopia and inflammatory lesions within the mucosa of the MD. In addition, there were necrotic-hemorrhagic rearrangements of the intestinal wall which revealed no histological malignancy.

Discussion

Described for the first time, by Johann Friedrich Meckel in 1809, MD is the most common congenital abnormality of the digestive tract [4]. Physiologically, obstruction of the omphalo-mesenteric duct occurs between the 5th and the 8th week of intra-uterine life. In case of non-obstruction, various anomalies can be observed. Thus, the permeability of the channel producing a Meckel's diverticulum can be observed. It is presented as an intestinal segment on the anti-mesenteric side of the ileum, localised at a variable distance from the ileocaecal angle (about 20 to 80 cm) at the termination of the superior mesenteric artery. About 4% of the diverticula are symptomatic, especially in children. Complications occur mostly in the first years of life, and are more frequent in men, with a sex ratio of 2 to 4 [5].

Intestinal occlusion remains the most frequent occurrence and represents 26.2 to 55% of complications according to Kim [3]. In our case, the diagnosis of acute intestinal occlusion was made on clinical and radiological evidence. The etiology of the occlusion was found in pre-operative as in the series of Edgar et al., [6]. The diagnosis of MD complications is rarely made in pre-operative, despite the progresses of imagery. Unfortunately imagery is a real problem in under developed countries. Our patient had an X ray which is the accessible para-clinical examination in rural areas. The occlusive complications of MD are from multiple mechanisms and are more frequent in young male children [5]. Acute intestinal occlusion may result from an intussusception on inverted diverticulum, a volvulus of the small bowel or a congenital or acquired bridge responsible for strangulation. It

accounts for 23 to 53% of all MD complications [3, 7]. In our case, the flange is secondary to an inflammation of the MD.

In the literature, gold standard is the segmental resection which takes out the diverticulum as it has been done for our patient [5,8]. This technique prevents the risk of omitting heterotopic cells that may perpetuate the symptomatology; since the risk of carcinomatous degeneration of a heterotopic mucosa is not nil [9]. A gastric heterotopia was found on the operating room of our patient. Gastric heterotopia is the most frequent in the literature [10]. The occurrence of complication is strongly related to the existence of heterotopia. Thus Park, finds a rate of 43.4% ectopiamucosa on complicated MDs against a rate of 14.2% uncomplicated MD [2]. Khemekhem found in his series of 58 patients found 50 to 80% of gastric heterotopia [10].

Conclusion

MD complications are rarely diagnosed pre-operatively due to their clinical latency. Current advances in medical imaging have made it possible in several studies to better approach the diagnosis. Presently, laparoscopy is one of the best techniques for the diagnostic and therapeutic management of MD.

References

1. Park JJ, Wolff BG, Tollefson MK, Walsh EE, Larson DR. Meckel diverticulum: the Mayo Clinic experience with 1476 patients (1950-2002). *Ann Surg.* 2005;241(3):529-533.
2. Grapin C, Bonnard A, Helardot P-G. Chirurgie du diverticule de Meckel. *EMC techniques Chirurgicales – Appareildigestif.* 2005;40-480.doi :10.1016/S0246-0424(05)39766-4
3. Edgar Ouangré, Maurice Zida, Moussa Bazongo, Adama Sanou, Gilbert Patindé Bonkoungou, Rodrigue Namékinsba Doamba, et al. Complications du diverticule de Meckel chez l'adulte : à propos de 11 cas. *Pan Afr Med J.* 2015;22:274.
4. Shalaby RY, Soliman SM, Fawy M, Samaha A. Laparoscopic management of Meckel's diverticulum in children. *J Pediatr Surg.* 2005;40(3):562-567.doi: 10.1016/j.jpedsurg.2004.11.032
5. Cisse M, Konate I, Dieng M, et al. Diverticule de Meckel compliqués d'occlusions intestinales (A propos de 10 cas). *J AfrChir Digest.* 2008;8(2):782-787.
6. J. Lemale, S. Boudjemaa, B. Parmentier, H. Ducou Le Pointe, A. Coulomb, L. Dainese. Lésion pseudo-tumorale révélatrice d'un diverticule de Meckel. *ArchPediatri.* 2016;23:1157-1160.doi.10.1016/j.arcped.2016.08.002
7. R. Jemai, N. Sghairoun, F. Fitouri, A. Essid, M. Gasmi, S. Sahli, et al. Les accidents du diverticule de Meckel chez l'enfant. A propos de 58 cas. *ArchPediatri.* 2008;15(5):899.doi :10.1016/S0929-693X(08)71989-4
8. Marie Galifet, Philip Michel. Complications occlusives en rapport avec le diverticule de Meckel. *Presse Med.* 2009;38:1009-1022.
9. Zaghouni ben Alaya H, Bakir D, Hammami M, et al. Diverticule de Meckel chez un nourrisson. *Archpediatr.* 2008;18:1001- 1003.
10. Khemekhem R, Ben Ahmed Y, Rahay H, Soufiane G, Said J, Douira W, et al. Les aspects pathologiques du diverticule de Meckel chez l'enfant. *Journal de pédiatrie et de puériculture.* 2013;26(3):146-150. doi : 10.1016/j.jpp.2013.02.001