

CASE REPORTS

Uncommon Presentation of Meckel's Diverticulum in Young Age

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ABSTRACT

Meckel's diverticulum is a rare detected anomaly.

We present the case of a 13 months old male toddler dead shortly after he was admitted to the hospital. On internal autopsy examination abdominal dissection cream-brown fluid in abdomen was observed. In the ileum, 45 cm proximal to the ileocecal valve, 1 cm in diameter perforation area was detected, ongoing dissection revealed diverticular, pouch like structure, Meckel's diverticulum. We presented perforated Meckel's diverticulum detected at autopsy.

Keywords: Meckel's diverticulum, forensic, autopsy

INTRODUCTION

The incidence of rare detected anomaly, Meckel's diverticulum was reported as 2% (1-5). Symptomatic Meckel's diverticulum have been reported to occur usually in the first two years of the life, besides during the neonatal period, often presenting with acute necrotizing enterocolitis, Meckel's diverticulum with perforation has been also investigated (3,5). Our aim was to discuss Meckel's diverticulum, a rare entity detected at the autopsy. □

CASE REPORT

We present the case of a 13 months old male toddler dead shortly after he was admitted to the Provincial Children Diseases Research and Training Hospital by his parents with gastrointestinal symptoms' vomiting and diarrhea. According to the clinical history provided by the parents he was healthy growing toddler with normal screening and developmental testing on periodic, routine, pediatric physical examination. The death was suspected by the prosecutor and victim was transported to the Forensic Council Bursa Morgue De-

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partment for further examination. The victim was 77 cm in height and 10 kg in weight toddler. External autopsy examination revealed erythematous areas on the front of the body, the upper part of both thighs and inguinal region. On internal autopsy examination abdominal dissection cream-brown, greenish, foul-smelling fluid filling abdomen was observed (Figure 1). At the autopsy in the ileum, 45 cm proximal to the ileocecal valve, 1 cm in diameter perforation area was detected, intense hyperemia and blood clot on bowel serous surface was inspected. When dissection was performed, on the ileal mucosa, on perforation area, extending outward from the serous surface of the bowel, 2x2 cm diverticular, pouch like structure, Meckel's diverticulum was detected (Figure 2). Pathologic microscopic investigation of the Meckel's diverticulum prepared in serial sections, revealed perforation area with disintegrity of the bowel wall, massive edema, capillary vessels, fibroblast proliferation, inflammatory cell infiltration, hemorrhage, fibrin exudates accumulation, focal areas of gastric mucosa with parietal cells (Figure 3). On histopathological examination fibrinous exudates, edema, congestion and inflammatory infiltrate consisting of the neutrophils, eosinophils in the liver and spleen capsule, on the serous surfaces of internal organs were identified. Organ specimens', blood and urine systematic toxicological analysis revealed none of the substances screened for. □

DISCUSSION

Among gastrointestinal anomalies of the general population, the incidence of Meckel's diverticulum was reported as 2% in medical literature (1-5). Meckel's diverticulum is a true congenital intestinal diverticulum that results from the persistence of the omphalomesenteric duct which normally obliterates (2). The vast majority of cases presented in the literature, similar to our case were indicated to be male, with age range between 11-87 months determined in the serial case study (6-8). Brown and Olshaker claimed that Meckel's diverticulum was clinically presented with triad of symptoms complex with bowel obstruction, gastrointestinal bleeding and clinical signs of inflammation, but different manifestations imitating various intrabdominal diseases need to be considered during clinical evaluation (6).

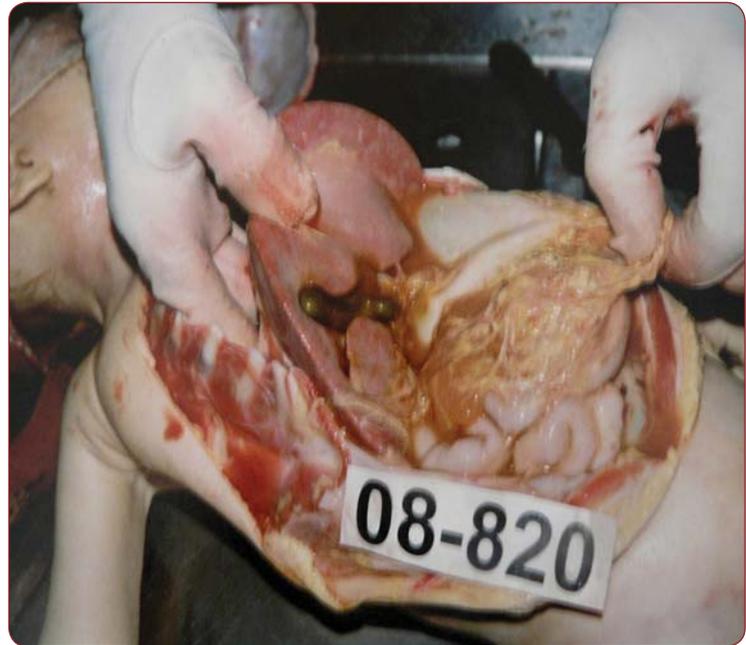


FIGURE 1. Cream-brown fluid in abdomen.



FIGURE 2. Pouch like structure, Meckel's diverticulum.

Symptomatic Meckel's diverticulum have been reported to occur usually in the first two years of the life, but during the neonatal period, often presenting with acute necrotizing enterocolitis, Meckel's diverticulum with perforation has been also investigated (3,5). On the other hand, case in advanced age, which exposed complications of Meckel's diverticulum, was also determined in medical literature (9). Although Meckel's diverticulum was the remnant of omphalomesenteric duct, the presence of these two structures in common was determined with an extremely low probability, but Meckel's diverticulum coexistence with mesodiverticular band and urachal duct remnants were also observed (9,10).

In a retrospective investigative analysis of patients treated with Meckel's diverticulum it was stated that Meckel's diverticulum should be searched in the laparotomies of the cases with different abdominal disorders with manifestations of acute abdomen, because Meckel's diverticulum can be the cause of serious abdominal complications like ulcer in the diverticulum, perforation like in the presented case, intestinal occlusion, diverticulitis and invagination (8). It was also stressed that when signs or symptoms arise from a Meckel's diverticulum, morbidity and mortality were increased, for these reason incidental Meckel's diverticul-

tomy was advised to be performed, besides uncommon, many cases of Meckel's diverticulum were reported to be quite suitable for laparoscopic diagnosis and treatment (8,11,12).

Clinical evaluation of rare abdominal emergency, Meckel's diverticulum needs high index of medical examiner suspicion, in term of detection in forensic autopsies, detailed investigation, dissection of the gastrointestinal tract must be performed. □

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REFERENCES

1. **Collins DC** – A Study of 50.000 Specimens of the Human Vermiform Appendix. *Surg Gynecol Obstet* 1955;101:437-45
2. **Weinstein EC, Cain JC, Remine WH** – Meckel's Diverticulum: 55 Years of Clinical and Surgical Experience. *JAMA* 1962;182:251-3
3. **Rikham PP, Lister J, Irving IM** – Necrotizing Enterocolitis: Bacterial and Meconium Peritonitis. In: Rikham PP, Lister J, Irving IM, eds. Neonatal surgery. 2nd ed. London: Butterworth Public Company 1978, 411-28
4. **Srinivas GN, Cullen P** – Intestinal Obstruction Due to Meckel's Diverticulum: a Rare Presentation. *Acta Chir Belg* 2007;107:64-6
5. **Alkan M, Güler G, Yildirim F, et al.** – Perforation of an Inflamed Meckel's Diverticulum in a Newborn: Report of a Case. *Turk J Gastroenterol* 2009;20:235-6
6. **Brown CK, Olshaker JS** – Meckel's Diverticulum. *Am J Emerg Med* 1988;6:157-64
7. **Pintér A, Szemlédy F, Pílaszanovich I** – Remnants of Vitelline Duct: Analysis of 66 Cases. *Acta Paediatr Acad Sci Hung* 1978;19:113-23
8. **Aarnio P, Salonen IS** – Abdominal Disorders Arising from 71 Meckel's Diverticulum. *Ann Chir Gynaecol* 2000;89:281-4
9. **Vork JC, Kristensen IB** – Meckel's Diverticulum and Intestinal Obstruction-Report of a Fatal Case. *Forensic Sci Int* 2003;138:114-5
10. **Ozel LZ, Talu M, User Y, et al.** – Coexistence of a Meckel's Diverticulum and a Urachal Remnant. *Clin Anat* 2005;18:609-12
11. **Michas CA, Cohen SE, Wolfman EF Jr** – Meckel's Diverticulum: Should It Be Excised Incidentally at Operation? *Am J Surg* 1975;129:682-5
12. **Sanders LE** – Laparoscopic Treatment of Meckel's Diverticulum. Obstruction and Bleeding Managed with Minimal Morbidity. *Surg Endosc* 1995;9:724-7.