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Перфорация дивертикула Меккеля у молодого пациента: клинический случай

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АННОТАЦИЯ

В данной статье описывается случай перфорации дивертикула Меккеля у 26-летнего пациента. Это редкое осложнение, возникающее при наиболее распространённой врождённой аномалии желудочно-кишечного тракта. Дивертикул Меккеля может долгое время протекать бессимптомно и осложняться дивертикулитом, энтеролитами, новообразованиями и реже, как в нашем случае, перфорацией.

Для постановки правильного диагноза и последующего лечения пациента решающее значение имеет рентгенологическое исследование в предоперационном периоде.

Представленные в статье типичные особенности перфорации дивертикула Меккеля, выявляемые при томографической визуализации, помогут рентгенологам в обнаружении этого осложнения.

Ключевые слова: дивертикул Меккеля; перфорация; врождённый порок развития; компьютерная томография; визуализация органов брюшной полости; клинический случай.

Как цитировать

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Perforated Meckel's diverticulum in a young male patient: a case report

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ABSTRACT

The case of a 26-year-old male patient with perforation of Meckel's diverticulum, a rare complication of the most common congenital anomaly of the gastrointestinal tract, is reported in this article. This congenital condition can remain asymptomatic for a long time, and it can get complicated with diverticulitis, enteroliths, neoplasms, and rarely perforation, as in this case.

A preoperative radiological assessment is of fundamental importance for proper diagnostic and therapeutic management of the patient. In this article, we present the typical tomographic imaging features of this infrequent complication to assist radiologists in detecting it.

Keywords: Meckel's diverticulum; perforation; congenital malformation; computed tomography; abdominal imaging; clinical case.

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年轻男性患者梅克尔憩室穿孔：一份病例报告

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摘要

本文报告了一例26岁男性梅克尔憩室穿孔患者，这是最常见的胃肠道先天性异常的一种罕见并发症。这种先天性疾病可在很长一段时间无症状，并可并发憩室炎、肠结石、肿瘤和罕见的穿孔，如本例所示。

术前放射评估对于患者的正确诊断和治疗管理至关重要。在本文中，我们介绍了这种罕见并发症的典型断层成像特征，以帮助放射科医生发现这种疾病。

关键词：梅克尔憩室；穿孔；先天畸形；计算机断层成像；腹部显像；临床病例。

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DESCRIPTION OF THE CASE

Anamnesis. A 26-year-old male patient was admitted to our emergency department due to severe abdominal pain, fever, and vomiting, with vital signs in a normal range.

Diagnostic assessment. The physical examination demonstrated a distended abdomen with guarding and rigidity.

Blood analysis revealed neutrophilic leukocytosis, with a white blood cell count of 12,000/μl (normal values: 4.6–10.2 × 10^3/mL) and approximately 70% of neutrophils (normal values: 40%–75%).

Subsequently, further instrumental investigations were recommended: abdominal X-rays, chest X-rays (which were unremarkable) and finally a total body computed tomography (CT).

On pre-contrast CT evaluation, a blind-ended intestinal loop in the right quadrants of the abdomen was identified, which was associated with diffuse mesenteric edema and multiple contiguous lymphadenopathies (Fig. 1*a*, *b*); a post-contrast CT was performed a few hours later, which showed an intense contrast enhancement of the intestinal wall at the level of the blind-ended loop.

These findings were associated with the presence of certain adjacent gas nuclei with antideclive arrangement, diagnostics for perforation (Fig. 2*a*, *b*).

The differential diagnosis. Such characteristics often simulate acute appendicitis, the main condition to be placed in differential diagnosis of Meckel's diverticulum (MD) inflammation. The identification of a normal appendix strengthens the confidence of the diagnosis.

Interventions. No other examinations were performed and the patient was taken to the operating theater. During the surgery was made definitive diagnosis of Meckel's diverticulitis and for this reason the patient was subjected to Meckel's diverticulectomy and ileostomy surgery under general anesthesia.

Follow-up and outcomes. The patient recovered without any complication and was discharged after a couple of days of hospitalization.

DISCUSSION

MD is the most common congenital malformation of the gastrointestinal tract, affecting 2% of the population and carrying a 4.2%–6.4% risk of complications [1]. It was initially reported in 1809 by a German anatomist, Johann Meckel [2], and it is caused by improper closure and absorption of the omphalomesenteric duct [3], the original communication point between the yolk sac and the intestinal lumen in embryonic life, which generally closes around the ninth week of gestation. It frequently contains heterotopic mucosa, such as gastric and pancreatic mucosa, can cause peptic ulceration within the diverticulum or adjoining ileum as a result of their secretions, resulting in intestinal hemorrhage, cicatricial stenosis of the diverticular neck, inflammation, and even perforation.

The well-known "rule of 2s" in the description of this pathology refers to its 2% prevalence, 2-ft distance from ileocecal valve, 2-inch long, containing one or two types of heterotopic gastric or pancreatic tissue, and usually symptomatic by the age of 2 years [4].

The radiological diagnosis of MD can be difficult, especially if the diagnosis is not suspected at first due to the typical nonspecific symptoms of appendicitis, such as abdominal pain, vomiting, and nausea.

CT is now the method of choice, as well as the most accurate, in the evaluation of abdominal pathologies in emergency.

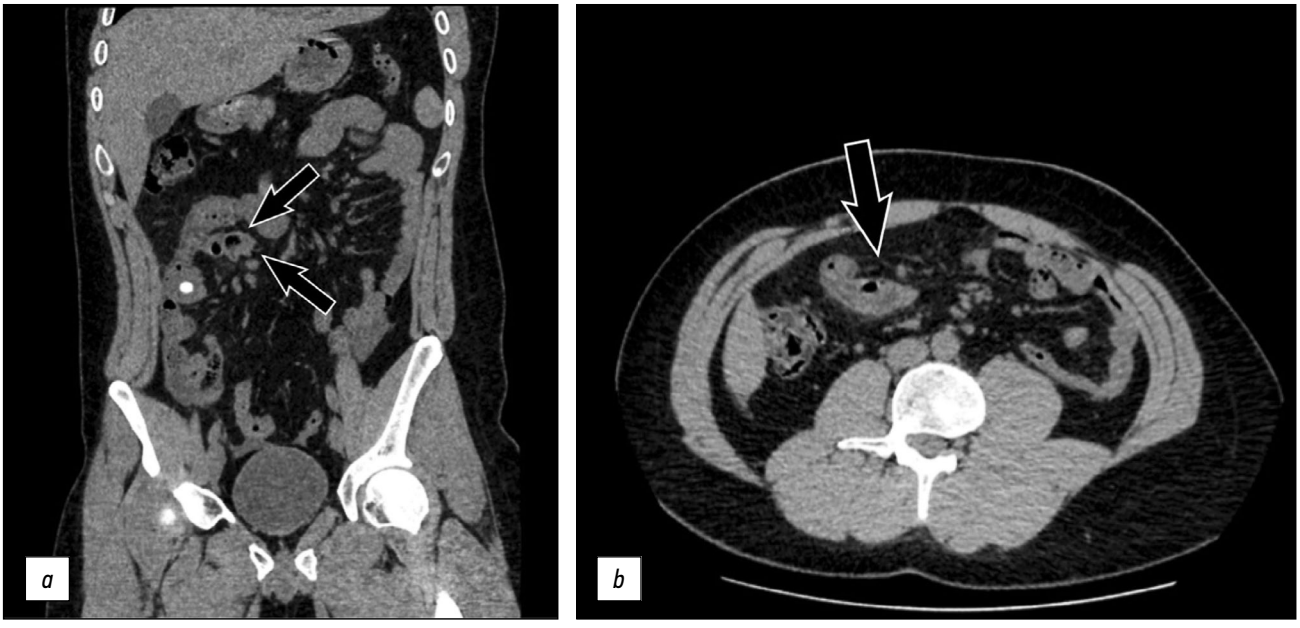

Fig. 1. This coronal (*a*) and axial (*b*) pre-contrast computed tomography images showing a blind-ended intestinal loop (arrows) in the right quadrants of the abdomen with associated mesenteric edema and multiple contiguous lymphadenopathies.

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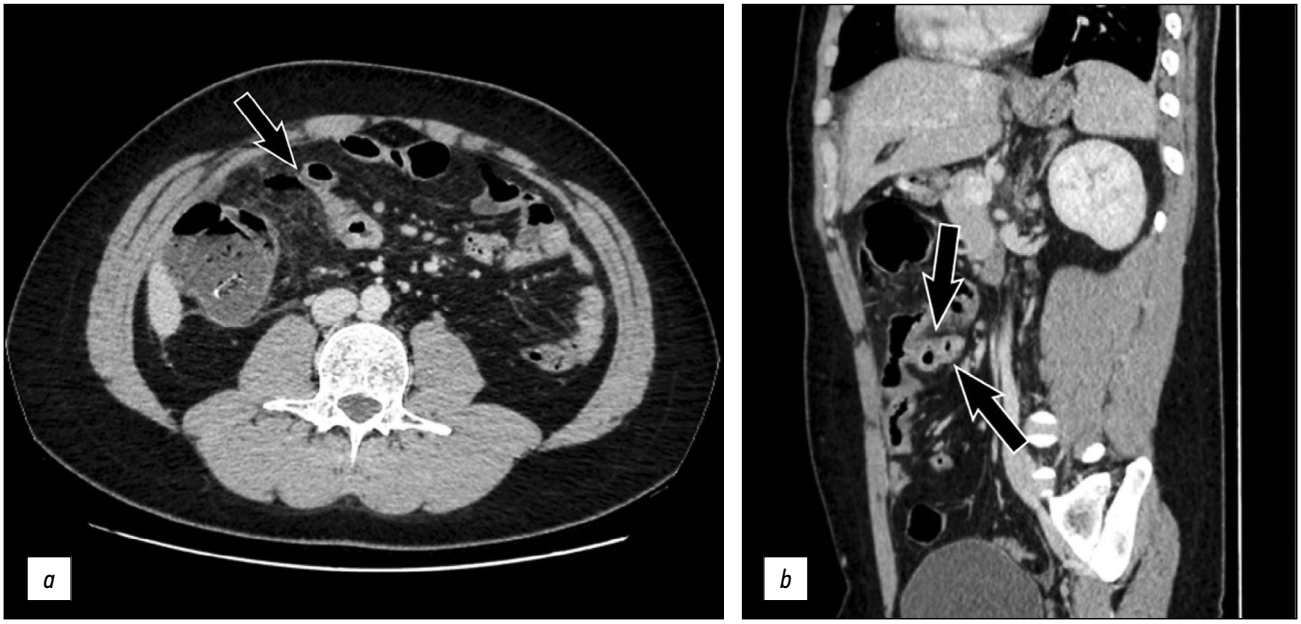

Fig. 2. Axial (*a*) and sagittal (*b*) post-contrast computed tomography images showing an intense contrast enhancement of the intestinal wall at the level of the same blind-ended loop (arrows) and some adjacent gaseous nuclei with antideclive arrangement, diagnostic for perforation.

MD generally appears on CT as a blind-ended gas- or fluid-filled structure, which may also contain foreign bodies or enterolithis, generally about 60 cm away from the ileocecal valve. This imaging technique is also able to detect the main complications of this malformation, such as perforation, in this case.

While definitive surgery, including diverticulectomy, wedge, and segmental resection performed by open or laparoscopic approach, is used to treat symptomatic MD, the surgical management of MD accidentally remains controversial [5].

CONCLUSION

MD can present with a wide range of clinical manifestations and imaging features, from indolent benign findings to acute life-threatening conditions, such as its perforation, as in the case presented here [6]. This is the fundamental reason why it is necessary to know its salient anatomy, clinical, and imaging features in order to allow an early radiological diagnosis and a prompt intervention.

ADDITIONAL INFORMATION

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Authors' contribution. Tupputi Umberto and Carpagnano Francesca Anna have done the research work related to the topic and the manuscript writing; Carpentiere Rossella and Giuseppe Guglielmi have made the clinical decision of the case and have helped to draft the manuscript. All authors made a substantial contribution to the conception of the work, acquisition, analysis, interpretation of data for the work, drafting and revising the work, final approval of the version to be published and agree to be accountable for all aspects of the work.

Consent for publication. Written consent was obtained from the patient for publication of relevant medical information and all of accompanying images within the manuscript.

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