

# A Case Report Involving Surgical Acute Abdomen Caused by a Perforated Jejunal Diverticulum

Dragoş Voicu<sup>1,2</sup>, Alexandra Toma<sup>1,3\*</sup>, Georgiana Bianca Constantin<sup>3\*</sup> and Constantin Popazu<sup>1</sup>

<sup>1</sup>General Surgery Division, Emergency County Hospital Brăila, Romania

<sup>2</sup>Surgery Department, Faculty of Medicine and Pharmacy, Dunărea de Jos" University of Galaţi, Romania

<sup>3</sup>Morphological and Functional Sciences Department, Faculty of Medicine and Pharmacy, Dunărea de Jos" University of Galaţi, Romania

**\*Corresponding author:** Alexandra Toma and Georgiana Bianca Constantin, General Surgery Division, Emergency County Hospital Brăila, 810249 Brăila, Romania, Morphological and Functional Sciences Department, Faculty of Medicine and Pharmacy, Dunărea de Jos" University of Galaţi, 800008 Galaţi, Romania



## ARTICLE INFO

**Received:**  August 05, 2022

**Published:**  August 11, 2022

**Citation:** Dragoş Voicu, Alexandra Toma, Bianca Constantin and Constantin Popazu. A Case Report Involving Surgical Acute Abdomen Caused by a Perforated Jejunal Diverticulum. Biomed J Sci & Tech Res 45(4)-2022. BJSTR. MS.ID.007236.

**Keywords:** Jejunal Diverticulum; Perforation; General Surgery; Laparotomy; Emergency Surgery

## ABSTRACT

Jejunal diverticulum represents an extremely rare gastrointestinal pathology. The clinical diagnosis is very challenging because the usual presentation of the patient is non-specific. We report a case of acute abdomen generated by the perforation of a diverticulum of the small intestine, with purulent, fetid, peritoneal abscess, emergency surgically managed. The patient, an 82-year-old man, was hospitalized with severe abdominal pain and toxic-septic condition. Paraclinical and imaging investigations have not been edifying in terms of etiology. Exploratory laparotomy identified a centro abdominal abscess, caused by a perforated inflammatory jejunal diverticulum, as well as an apparently uncomplicated sigmoid diverticulosis. Segmental enterectomy (about 20 cm) was performed, with the removal of the diverticulum and the restoration of the digestive transit by latero-lateral anastomosis. The etiology, the pathophysiology, the preoperative diagnosis and the complications of this type of lesion are discussed. The reported case demonstrates that this trivial pathological entity can evolve with various complications, potentially fatal, especially in elderly patients.

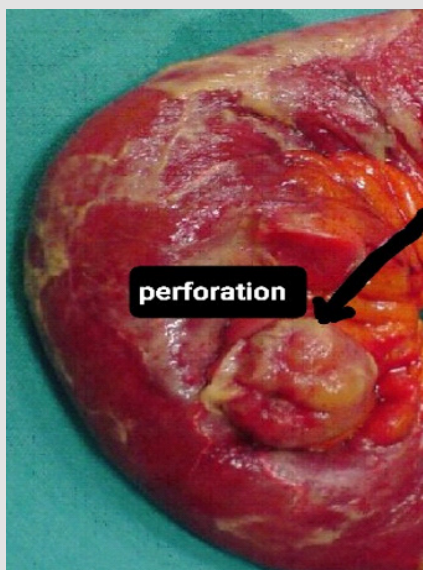
## Introduction

The presence of jejunoileal diverticula was first reported by Sommering and Baillie in 1794. The first radiologically detected case was reported by Case and the first surgical resection of a small bowel diverticulum was performed by Hunt and Cook in 1921 [1]. The small intestine is the least affected by diverticular disease, but the presence of diverticula at this level is difficult to appreciate, due to their accidental discovery (0.06-1.9%). However, in recent decades, the frequency of these diverticula has increased, being

associated with diet (low fiber intake) and increased life expectancy. Jejunal-ileal diverticula generally appear after age 65, more frequently in men (3:2). The diverticulosis of the small intestine is asymptomatic in 60% of cases; 15% of cases present a frustrating and uncharacteristic dyspeptic syndrome and another 15% of cases develop complications, with surgical solution (infection, bleeding, stenosis, perforation). This is why the diverticular pathology of the small intestine shouldn't be ignored [2].

## Materials and Methods

An 81 years old male patient presented in emergency for intense abdominal pain and toxic-septic condition. The symptoms had started suddenly, with violent mesogastric pain, a week ago. Due to the social status, the lack of means of communication and transport, the patient chose to suffer, resorting to folk remedies and, unable to eat, evolved into a toxic-septic state, with generalization and intensification of abdominal pain. The anamnesis revealed that the patient was appendicectomized and had not presented during his life, any digestive suffering, apart from a usual chronic constipation. The radiologic and ultrasound examinations performed in the emergency room showed multiple hydroaerial levels of various sizes, alternating with aerocolia, as well as the presence of fluid in the peritoneal cavity. The lab results showed: Hb – 8,4 g%, Ht – 37%, L – 17200/mm<sup>3</sup>, TGP and TGO easily increased, amylasemia 120 UI/dl. With the diagnosis of acute surgical abdomen, surgery was performed by median supra- and sub umbilical approach. An inflammatory adhesive block was found, consisting of thin intestinal loops in the mesogastric, delimiting an abscess (with the diameter 10-12 cm), with purulent, fetid content, with a bilious tint. The presence of sigmoid diverticula, apparently uncomplicated, was also found. After a careful and laborious dissection, the abscess was opened and evacuated, without tissue sacrifices. Its origin turned out to be a jejunal diverticulum (Figure 1), with a diameter of about 3 cm, perforated, located about 50 cm from the Treitz angle. The diverticulum was removed by segmental enterectomy (about 20 cm) with the restoration of the digestive tract by lateral-lateral anastomosis. Peritoneal toilet by multiple lavage, followed by double drainage, completed the operation.



**Figure 1:** Perforated jejunal diverticulum – intraoperative findings.

## Results

The Meckel's diverticulum is the only true diverticulum of the small intestine. The acquired diverticula, with a wall devoid of muscle layer, are in fact pseudodiverticles. The cause of their appearance is not completely elucidated. The most plausible pathogenic explanation is that of the place of the minimum resistance: accentuated or disordered peristalsis determines the transmuscular herniation of the mucosa and submucosa, at the place where the vessels approach the intestinal wall. With the exception of the duodenum [3], the intestinal pseudodiverticles usually appear at the level of the jejunum, endowed with larger arterial vascularization. In 35-75% of cases, jejunal-ileal diverticulosis is associated with sigmoid diverticulosis [4]. Usually asymptomatic, jejunal-ileal diverticula can cause serious, even fatal complications. The food content, in progression, enters its narrow diverticulum, where it stagnates, producing inflammation and perforation, generating an abscess, followed by generalized peritonitis in two stages. It is estimated that 1/5 of patients with intestinal diverticulosis develop inflammatory and hemorrhagic complications. The prevention of complications requires an early diagnosis, followed by appropriate conservative treatment. Simple abdominal radiography can raise the suspicion of an intestinal diverticulum, visualizing a small, unique hydroaerial image. Incidentally, barium transit can detect diverticula, but a negative radiological examination does not exclude their existence. Abdominal ultrasound and CT examination help to exclude lesions such as colitis, acute appendicitis, peritoneal abscess, which can mime an acute intestinal diverticulitis. In the case of a peridiverticular abscess, CT / US percutaneous guided drainage can be used [5,6]. The treatment becomes necessary in case of malabsorption, bleeding, obstruction and diverticulitis, with or without perforation.

- Malabsorption occurs in 4-12% of cases, patients present: steatorrhea, megaloblastic anemia, sometimes neuropathy; antibiotic therapy and vitamin therapy are administered;
- Recurrent or persistent bleeding requires surgery;
- Jejunal-ileal obstruction by enterolitis requires surgical resection;
- Perforation of the diverticulum occurs in 2-3% of cases, 90% of perforations due to diverticulitis, with necrotic inflammatory reaction (other causes of perforation: abdominal trauma, intestinal foreign bodies). The perforations are complicated by entero-enteral, entero-colonic and entero-vesical fistula abscesses. Free perforation can lead to generalized peritonitis. Perforation and abscess are absolute indications for surgery if percutaneous drainage is not applicable. Perforations lead to death in 20-40% of cases [7-9]. This paper presents a case of diverticular perforation of the small intestine, which

led to peritonitis-occlusion, with toxic-septic condition and enterectomy in an 81-year-old man, hospitalized and operated in emergency. The lesion was, however, an intraoperative surprise, as well as the coexistence of uncomplicated sigmoid diverticulosis, due to the rarity of jejunal-ileal diverticula, lack of medical and anamnestic data. Although it is not necessary to resect all jejuno-ileal diverticula, the definitive treatment, in cases of perforation, is the surgical resection of the involved intestinal segment [3,8,10].

## Conclusion

The case presented to the literature demonstrates the possibility of an acute complication in a relatively common pathology - intestinal diverticulosis in the elderly. Small bowel diverticula should not be forgotten or ignored, considered clinically insignificant. Patients with small bowel diverticulosis, incidentally diagnosed, should be strictly questioned and monitored for the prevention or rapid treatment of possible complications of this disease.

## References

- Singal R, Gupta S, Airon A (2012) Giant and multiple jejunal diverticula presenting as peritonitis a significant challenging disorder. *J Med Life* 5(3): 308-310.
- Tankova L, Berberova M, Puranov P, Tsankov Ts, Gegova A, et al. (2007) Complicated small bowel diverticulosis – a case report and literature review. *Chirurgia* 102(5): 603-606.
- Oukachbi N, Brouzes S (2013) Management of complicated duodenal diverticula. *J Visc Surg* 150(3): 173-179.
- Koch AD, Schoon EJ (2007) Extensive jejunal diverticulosis in a family, a matter of inheritance?. *Neth J Med* 65(4): 154.
- De Peuter B, Box I, Vanheste R, Dymarkowski S (2009) Small-bowel diverticulosis: imaging findings and review of three cases. *Gastroenterol Res Pract* 2009: 549853.
- Lebert P, Ernst O, Zins M (2019) Acquired diverticular disease of the jejunum and ileum: imaging features and pitfalls. *Abdom Radiol (NY)* 44(5): 1734-1743.
- Jochmans I, Pirenne J (2016) Images in clinical medicine. Jejunal Diverticulosis with Midgut Volvulus and Intestinal Malrotation. *N Engl J Med* 375: e2.
- Johnson KN, Fankhauser GT, Chapital AB, Marianne V Merritt, Daniel J Johnson, et al. (2014) Emergency management of complicated jejunal diverticulosis. *Am Surg* 80(6): 600-603.
- Terada T (2013) Diverticulitis of multiple diverticulosis of the terminal ileum. *Int J Clin Exp Pathol* 6(3): 521-523.
- Yoon YS, Park IJ, Lee KH, Hee CK, Chang Sik, et al. (2004) Should small bowel diverticula be removed?. *Korean J Gastroenterol* 44(5): 275-279.
- Sorin Berbece, Valeriu Ardeleanu, Vlad Denis Constantin, Ioana Paunica, Alexandra Toma (2020) Therapeutic approach for Amyand's hernia; a case report. *J Mind and Med Sci*: 7(1).

ISSN: 2574-1241

DOI: 10.26717/BJSTR.2022.45.007236

Alexandra Toma. Biomed J Sci & Tech Res



This work is licensed under Creative Commons Attribution 4.0 License

Submission Link: <https://biomedres.us/submit-manuscript.php>



### Assets of Publishing with us

- Global archiving of articles
- Immediate, unrestricted online access
- Rigorous Peer Review Process
- Authors Retain Copyrights
- Unique DOI for all articles

<https://biomedres.us/>