



## Perforated Jejunal Diverticulitis, An Unusual Cause of Intraabdominal Abscess

### Nadir Bir Batın içi Abse Nedeni, Jejunal Divertikülit Perforasyonu


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#### ABSTRACT

Jejunal diverticulosis is a sporadic seen disease which was generally asymptomatic. Severe diverticulitis complications such as obstruction, hemorrhage, or perforation with a delayed diagnosis can be life-threatening. An 82 year old male patient applied to the emergency service with abdominal pain, and his physical examination was compatible with acute abdomen and peritonitis. He was diagnosed with perforation due to extraluminal air and abscess on computerized abdominal tomography. The patient underwent exploratory laparotomy and was diagnosed with perforation of jejunal diverticulitis, perioperatively. Segmental small intestine resection and end-to-end anastomosis were performed. He was discharged with no complications on the postoperative 25th day. In this case report, it is aimed to report a rare cause of acute abdomen in an elderly patient with perforation of jejunal diverticulitis due to delayed diagnosis.

**Keywords:** Diverticulitis; jejunal diverticulosis; acute abdomen; intraabdominal abscess.

#### ÖZ

Jejunal divertikulozis genellikle asemptomatik seyreden çok nadir görülen bir hastalıktır. Obstruksiyon, kanama ve perforasyon gibi divertikülite sekonder oluşan ciddi komplikasyonlar geç tanı konulduğunda yaşamı tehdit edici olabilir. Seksen iki yaşında erkek hasta acil servise karın ağrısı şikayetiyle başvurmuş olup, fizik muayenesi akut batın ve peritonit ile uyumlu idi. Bilgisayarlı abdomen tomografide serbest hava ve apse nedeniyle hastaya perforasyon tanısı konuldu. Eksploratif laparotomi yapılan hastaya ameliyat sırasında peroperatif jejunal divertikülit perforasyonu tanısı konuldu. Segmental ince bağırsak rezeksiyonu ve uçtan uca anastomoz uygulandı. Ameliyat sonrası 25. günde komplikasyonsuz olarak taburcu edildi. Bu olgu sunumunda, gecikmiş tanı nedeniyle jejunal divertikülit perforasyonu olan yaşlı bir hastada nadir bir akut karın nedeninin sunulması amaçlanmıştır.

**Anahtar kelimeler:** Divertikülit; jejunal divertikulozis; akut karın; batın içi abse.

#### INTRODUCTION

Diverticula is predominantly localized in the colon but might be seen in any part of the digestive tract beginning from the esophagus (1). In the small intestine, diverticulosis is mostly located in the duodenum, followed by the jejunum and the ileum (2). Generally, jejunal diverticulosis (JD) is asymptomatic, but due to complications of diverticulitis like hemorrhage, intestinal obstruction, jejunal perforation, mesenteric abscess, generalized peritonitis, it can be symptomatic.

#### CASE REPORT

An 82 year old male patient applied to the emergency department with abdominal pain, vomiting, nausea persisting for five days with fever. Anamnesis revealed no history of chronic illness except Alzheimer's disease. On physical examination, there were signs of peritoneal irritation on the left upper quadrants of the abdomen with rebound and tenderness. Except for increased total leukocyte count, the laboratory tests were in normal limits. Fever was 38.9 °C. Abdomen computed tomography (CT)

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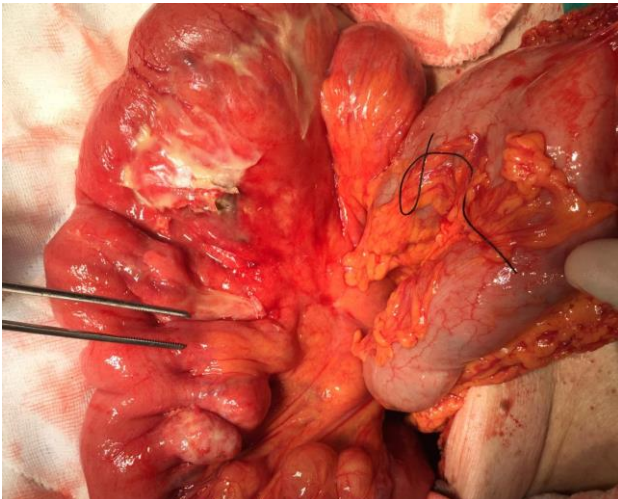
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revealed air-fluid, especially around the loop of the jejunal intestine with localized abscess (Figure 1). Perforation was the presumptive diagnosis; therefore, explorative laparotomy was performed. Multiple diverticulosis was seen between the 40 cm segment of the jejunum and the thirty cm distance of Treitz ligament, and a perforation was detected in one of the diverticula with abscess (Figure 2). The abscess was drained, segmental small intestine resection and end-to-end jejuno-jejunal anastomosis were performed. The patient began to intake fluid on the fifth postoperative day, and the drain was extracted on the sixth postoperative day. During the postoperative period, the patient was followed in the intensive care unit due to respiratory complications. He was recovered and discharged home on the postoperative 25th day. Histopathological examination of the specimen confirmed multiple diverticulosis, one of which was a perforated jejunal diverticulum, with acute inflammation consisting mucosa and submucosa without the muscularis propria layer (Figure 3,4,5). Written informed consent which was necessary was obtained from the patient for treatment, surgery, and publication.



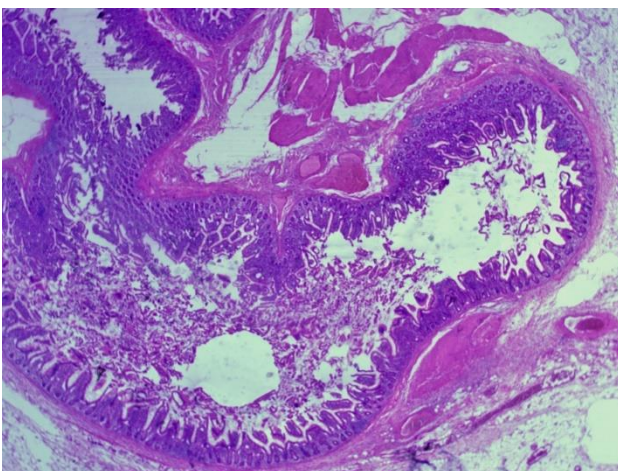
**Figure 1.** Abdomen Computed Tomography (CT) was showed air-fluid especially around the loop of jejunal intestine with localized abscess



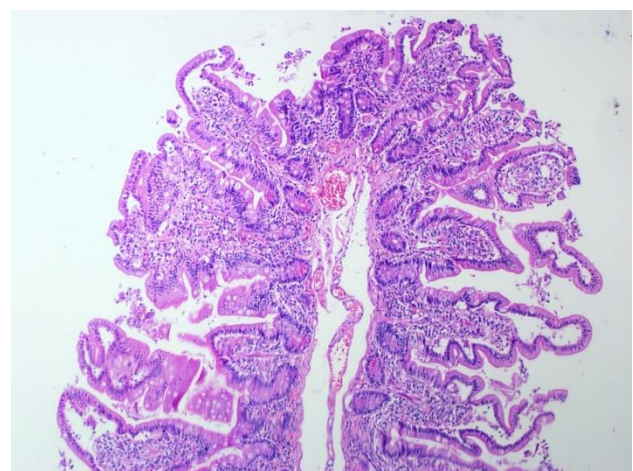
**Figure 2.** Multiple diverticulosis was revealed in the 40 cm segment of jejunum from the thirty cm distance Treitz ligament, and a perforation was detected in one of them due to diverticulitis



**Figure 3.** Macroscopic view of the jejunal diverticulum



**Figure 4.** Jejunal diverticulum: A wall of mesenteric fat that does not contain muscularis propria in the wall, the jejunal tissue extending into the tissue, H&E x40



**Figure 5.** Jejunal diverticulitis: Mixed polymorphonuclear leukocytes and lymphoplasmacytic inflammation in the diverticula mucosa, H & E x100

## DISCUSSION

Jejunal diverticulosis (JD) is a type of pseudo-diverticula which occurs mainly in the vasa recta regions of the mesenteric side of the intestine due to the herniation of the mucosa and submucosa (1,2). It is reported that the incidence of JD was 0.2-1.3% in autopsy series (3,4). JD most commonly occurs during the sixth and seventh decades of life and mainly seen in male patients. Compared to the female population, JD is 1.5 times higher in males (2). The symptoms and signs of JD are nonspecific, such as chronic abdominal pain, nausea, constipation, diarrhea, dyspepsia. The disease generally presents with acute abdomen and peritonitis signs since the complications of perforated diverticulitis are perforation, peritonitis, mesenteric abscess, hemorrhage, and intestinal obstruction. The etiopathogenesis of JD is predicted to be due to intestinal dyskinesia, dysfunction of intestinal motility, and increased intraluminal pressure, which causes diverticula on the mesenteric side of the small intestine (1,2). Although imaging studies can be helpful, complicated JD is mostly diagnosed perioperatively with surgery. Sub-diaphragmatic free air can be seen in chest X-Ray of complicated JD during radiological examination (2,5). Multi-detector row computed tomography (MDCT) with oral and intravenous contrast is the highly sensitive imaging method that can be a guide for presumptive diagnosis (6,7). MDCT can evaluate various complications, such as perforation with extraluminal air, inflammation and thickened intestinal wall, mesenteric abscess, heterogeneity of mesenteric fatty tissue around the jejunal intestinal loop (1,2). As in our case, CT revealed the dilatation in the jejunal ans, localized perforation with abscess and showed the heterogeneity due to the mesenteric inflammation.

Most of studies and case reports indicate that surgery is still the first choice in the treatment of complicated JD (1,2). As in our case, surgical treatment, resection, and anastomosis should be performed quickly, if the patient's general condition is suitable. Other surgical techniques such as diverticulectomy and capitonnage of the perforated diverticulum are recommended due to the high leak, sepsis, and death rate (1,5). For peridiverticular abscess, a non-surgical way with intravenous antibiotics and CT-guided drainage can be used in selected and the compatible patients with no symptoms of peritonitis and acute abdomen or sepsis (8). In our case, antibiotherapy and drainage were the first treatment choice. However, with

the CT evaluation, which revealed inflammation in jejunal intestinal loops with abscess and occlusion in the mesenteric vascular vessel leading to the presumptive diagnosis of mesenteric ischemia; therefore, explorative laparotomy was performed.

Short bowel syndrome due to extensive resection should be kept in mind in multiple JD with extensive segment involvement, so the resection must be limited with the short segments that include perforated diverticulitis loops (1,5). Resection is not recommended in asymptomatic diverticula discovered during surgery or incidentally diagnosed by imaging methods (1,5).

In conclusion, jejunal diverticulitis which can be life-threatening with delayed diagnosis due to complications must be kept in mind as a cause of acute abdomen, especially in elderly patients. The surgeon should remember that extensive resection can cause short bowel syndrome; therefore, resection must be limited with the short segments, including perforated diverticulitis loops.

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