

Multiple giant jejunal diverticulosis: A rare clinical presentation of a rarely encountered disease

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ABSTRACT

Jejunoleal diverticula have a four-fold greater risk of developing general complications and an 18-fold greater risk of perforation compared to duodenal diverticula. While resection is not preferred in asymptomatic cases, surgical intervention may be required in life-threatening conditions. In this case report, a 69-year-old male patient with multiple giant jejunal diverticulum presenting with long-standing and transient symptoms was presented. The patient had a history of appendectomy 15 years before application. During the patient's last admission to the emergency department, contrast-enhanced abdominal computed tomography was ordered and revealed jejunum segments with multiple giant diverticula which were treated by excision by open laparotomy. It was observed that the patient's complaints did not recur and he started to gain weight. In patients admitted to the emergency department with complaints of long-standing abdominal pain, weight loss, and bloating, in whom diagnosis cannot be made, it is recommended to consider diverticulum originating from the jejunum in the differential diagnosis, especially in the presence of abdominal surgery history.

Keywords: Complaints; excision; jejunoleal diverticula; surgical intervention.

INTRODUCTION

In the gastrointestinal tract, diverticula are more common in the large intestine.^[1] Small intestinal diverticulum, a rare condition with an incidence of 1–2%, is usually asymptomatic and often diagnosed incidentally.^[1,2] Furthermore, jejunoleal diverticula are far less common than duodenal ones.^[3] While resection is not preferred in asymptomatic cases, surgical intervention may be required in patients with life-threatening conditions caused by diverticula, such as intestinal obstruction, perforation, bleeding, and abscess.^[1,4,5] In this case report, a patient with multiple giant jejunal diverticula, which is rare condition, who presented with long-standing and transient symptoms is described.

CASE REPORT

A 69-year-old male patient presented to the emergency department with complaints of severe abdominal pain, vomit-

ing, and diarrhea. Written informed consent was obtained from the parents of the patient for the publication of the case report and the accompanying images. The patient reported complaints of abdominal pain and swelling, indigestion, nausea, and diarrhea, which had existed for about 10 years, and often began 1–2 h after eating, lasted for around 2 days, and then disappeared spontaneously. During this period, the patient dropped from 75 kg to 53 kg. Since the patient reported that he was able to eat only once every 2 days, he could not carry our daily work due to weakness and fatigue. In his medical history, we learned that he had undergone an appendectomy operation 15 years ago. No pathological findings were found in the previous gastroscopy and colonoscopy procedures performed for these complaints. In his computerized tomography (CT) taken 2 years ago, findings consistent with prior appendectomy had been detected without any other findings. At his first admission to the emergency department, the patient's general condition was unremarkable and vital signs were as follows: Temperature: 36.3 °C, heart rate: 105/min, blood

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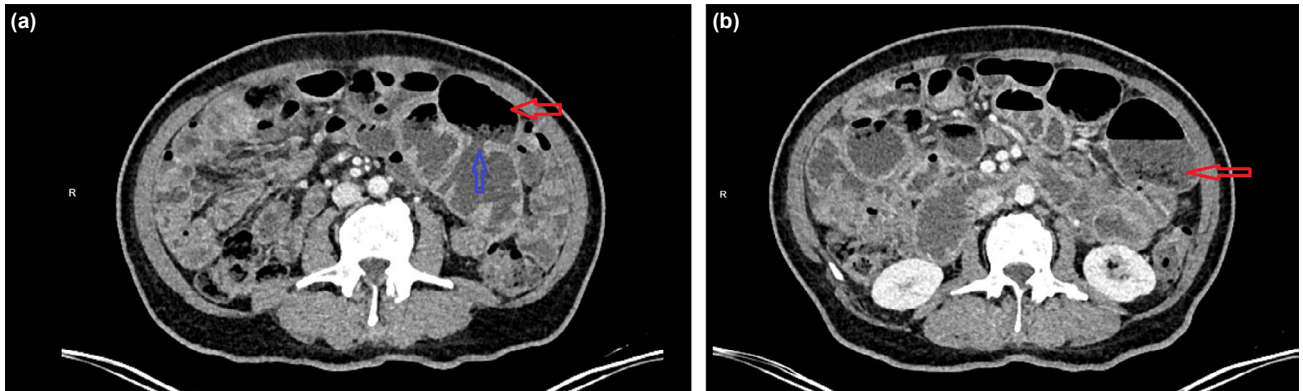


Figure 1. Axial plane CT images of the abdomen obtained without oral contrast agent administration after intravenous contrast agent administration. (a) A wide wall discontinuity (blue arrow) in the jejunum and a large diverticula (red arrow) extending from this area. (b) A large diverticula (red arrow) in the jejunum.

pressure: 120/70 mmHg, and respiratory rate: 20 breaths/min. On physical examination, bowel sounds were absent and general abdominal tenderness was detected. Laboratory results showed hemoglobin 9.7 g/dl, total leukocyte count $12.72 \times 10^3/\mu\text{l}$, total protein 5.2 g/dl, and C-reactive protein 1.19 mg/dl. In the axial (Fig. 1) and coronal (Fig. 2) sections of contrast-enhanced abdominal CT, multiple air-containing diverticula of varying sizes were detected in the jejunum which also demonstrated large areas of wall discontinuity. Emergency laparoscopy was initiated, but was converted to open laparotomy due to extensive adhesion and technical difficulties. A median incision was made above and below the umbilicus. In the exploration, a large number of mesenteric diverticula were observed

in the proximal jejunum, the sizes of which ranged from 6 to 8 cm in diameter. The patient's total intestinal length was measured as 5.5 meters, and starting from the 50th cm of the Treitz ligament, a 90-cm portion of the jejunum with giant



Figure 2. Air-filled diverticula (red stars) in the jejunum are marked in the coronal plane, anteriorly passing sections in the abdomen CT examination obtained without oral contrast agent administration after intravenous contrast agent administration.

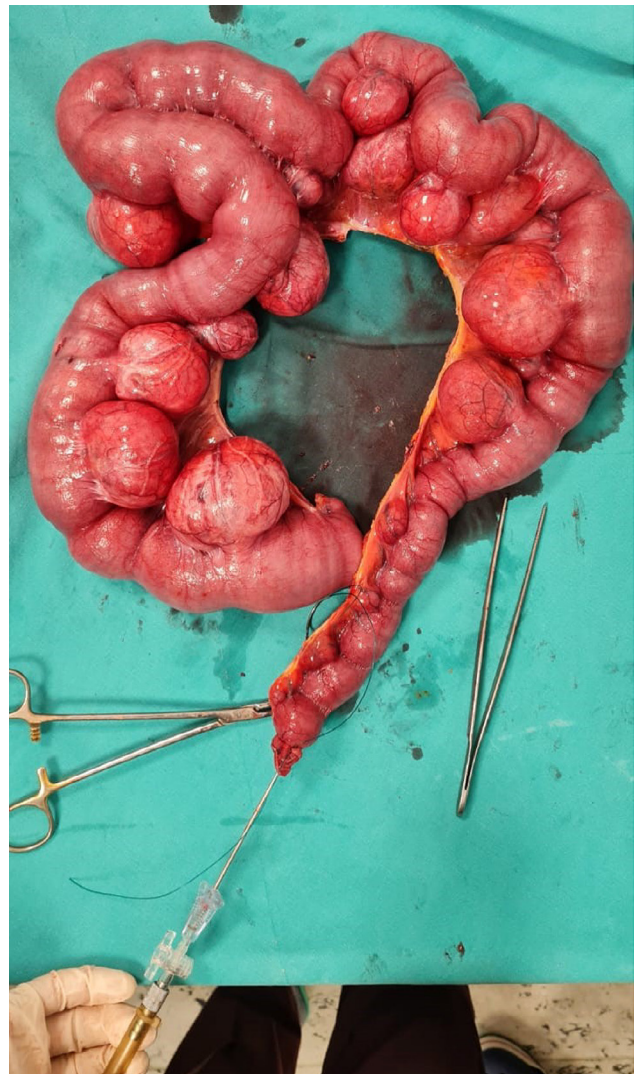


Figure 3. The jejunum segment with multiple giant diverticulum removed at open laparotomy.

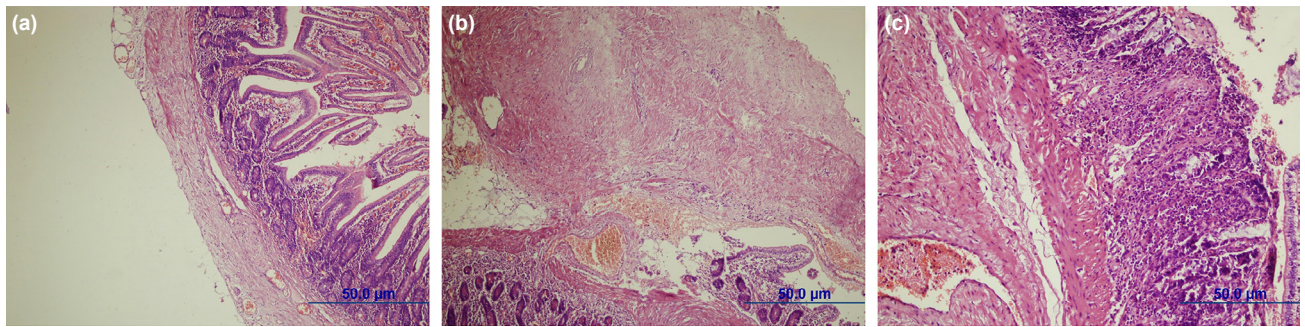


Figure 4. (a) $\times 100$ Hematoxylin-Eosin staining (H&E), diverticulum wall. (b) $\times 100$ H&E, inflammatory changes in the diverticulum wall. (c) $\times 200$ H&E, chronically active inflammatory cells in the diverticulum wall.

diverticula was resected (Fig. 3). The remaining small intestine ends were anastomosed side by side. The operation took about 2 h. The patient was discharged on the 4th post-operative day without complications. Normal nutrition was started on the 10th post-operative day. Pathology report described large diverticula (Fig. 4). It was observed that the patient, in whom all complaints had improved, gained weight during the post-operative period, reaching 60 kg in the 1st month and to 70 kg in the 3rd month.

DISCUSSION

A diverticulum is a sac-like protrusion of the intestinal wall and is seen most commonly in the large intestine.^[1] In the small intestine, they are most commonly diagnosed in the duodenum, followed by the jejunum (albeit very rarely) and often in the 6th and 7th decades.^[2,6] Many of these cases are considered to be acquired forms of disease.^[2] The incidence of jejunoleal diverticulosis ranges from 0.03% to 8.0% in autopsy series and from 0.02% to 7% in contrast-enhanced radiological studies.^[6,7] Jejunal diverticula usually occur at proximal sites and are mostly multiple;^[1] nonetheless, multiple large jejunal diverticulum have been reported extremely rarely.^[8,9] In this case report, a patient with multiple giant jejunal diverticula who had abdominal symptoms for 10 years and a history of abdominal surgery was presented. Similarly, cases of multiple giant jejunal diverticulum causing intestinal obstruction have been reported previously.^[9,10] However, the 10-year length of complaints and the history of intra-abdominal surgery 15 years ago are the significant differences of our case from other cases. Singal et al.^[9] reported a case of multiple giant jejunal diverticulum, similar to our case; however, the patient was asymptomatic and diagnosis was incidental as it was detected during an emergency laparotomy for peritonitis caused by ileum perforation. The authors reported that they did not perform any interventions for this purpose since the patient did not have any diverticulum-related complaints, and they stated that there was no complaint in the 16-month follow-up. In another case report, a case of acute abdomen caused by midgut volvulus due to a large solitary jejunal diverticulum was reported.^[11]

Jejunoleal diverticulum is usually asymptomatic, but they may be diagnosed as a result of complications such as small bowel

obstruction, perforation,^[4] diverticular bleeding,^[5] anemia,^[8] infectious conditions like diverticulitis, peritonitis,^[3] and abscess^[6] and, so, may require surgical intervention.^[1] Desai and Kulhari, reported a case of giant jejunal diverticulum, measuring 18 \times 15 cm, requiring liver wedge resection due to the compression on the liver.^[1] As a result of these complications, the patients may experience abdominal pain and/or discomfort,^[1,6] vomiting, malnutrition,^[6] weakness, and weight loss. Edwards defined epigastric pain, abdominal discomfort, and flatulence one or 2 h after meals observed in patients with small bowel diverticulosis as “flatulent dyspepsia.”^[12] Iron deficiency anemia and megaloblastic anemia have often been linked to malabsorption, steatorrhea, and vitamin deficiency. Malabsorption may occur due to unsynchronized peristaltic movement of the intestine, enlargement of the diverticulum, and bacterial accumulation.^[9] The reason for non-severe anemia in the presented patient may be gastrointestinal bleeding originating from the diverticulum.^[13] However, such bleeding problems may be severe in other patients, and therefore, physicians should be aware of potential bleeding-related risks. In addition, since many of these symptoms may also occur in common intra-abdominal pathologies such as appendicitis, cholecystitis, and diseases such as irritable bowel disease and dyspepsia,^[1,4,13] physicians may rarely consider diverticulosis in such patients.^[8,13]

The pathophysiology of acquired diverticulosis is still unknown, but it is theoretically conceivable that abnormal peristalsis, intestinal dyskinesia, or high intraluminal pressure may cause diverticulum formation and enlargement.^[3,14] In the presented case, it is highly probable that appendectomy-related intestinal adhesions led to increased intestinal pressure and caused the enlargement of jejunal diverticulum. When diverticulosis is diagnosed in a delayed manner, it can cause fatal complications.^[4,6,11] Compared to duodenal diverticula, jejunoleal diverticula have a four-fold greater risk of general complications and an 18-fold greater risk of perforation.^[4,15] Therefore, if diagnosis is not possible with clinical and endoscopic findings in patients with a history of abdominal surgery who have complaints such as abdominal pain, bloating and vomiting after eating, evaluation with CT^[16] may be necessary to assess small intestinal diverticulum, especially proximal jejunal diverticulum. It should be kept in mind that these diverticulum may be large and multiple.

Conclusion

In conclusion, we reported a case of multiple giant jejunal diverticulum who had been experiencing complaints for 10 years which increased with eating. Most notably, the patient had a history of abdominal surgery 15 years ago. In patients who present to the emergency department with these complaints radiological imaging should be ordered, if diagnosis cannot be made with clinical or endoscopic evaluation, especially considering the risk of small intestine diverticulum. According to results, emergency surgery can be planned in symptomatic patients.

Informed Consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

Peer-review: Internally peer-reviewed.

Conflict of Interest: None declared.

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OLGU SUNUMU - ÖZ

Jejunumda yerleşmiş çok sayıda dev divertikülozis: Nadir görülen bir hastalığın nadir görülen bir klinik prezentasyonu

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Jejuno-ileal divertiküllerde, duodenal divertiküllere kıyasla, genel komplikasyon gelişme riski dört kat, perforasyon riski 18 kat daha fazladır. Asemptomatik olgularda rezeksiyon yapılmazken, yaşamı tehdit eden komplikasyonlarda cerrahi müdahale gerekebilir. Bu olgu raporunda, uzun süredir var olan geçici semptomlarla başvuran, çok sayıda dev jejunal divertikülü olan 69 yaşında bir erkek hasta sunuldu. Hastanın 15 yıl önce geçirilmiş apendektomi öyküsü mevcuttu. Son acil servis başvurusunda çekilen kontrastlı batin bilgisayarlı tomografisinde, çok sayıda dev divertiküllü jejunum segmenti saptanmıştı ve sonrasında açık laparotomi ile eksize edilerek tedavi uygulanmıştı. Hastanın takiplerinde şikayetlerinin tekrarlamadığı ve kilo almaya başladığı görüldü. Acil servise uzun süredir var olan karın ağrısı, kilo kaybı, şişkinlik şikayetleri ile başvuran ve özellikle batin operasyonu geçmişi bulunan hastalarda tanı konulamadığı zaman ayırıcı tanıda jejunum kaynaklı divertiküllerin akılda bulundurulmasını öneriyoruz.

Anahtar sözcükler: Cerrahi müdahale; eksizyon; jejuno-ileal divertikül; şikayetler.

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