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Case report

Jejunal diverticulosis: A case report

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ABSTRACT

Introduction: Jejunal diverticulosis is a rare entity that presents a challenging diagnosis due to its vague and non-specific clinical presentations. 40 % of the patients remain asymptomatic until the development of complications.
Case presentation: We report a case of 84 years old female who presented to the hospital with vomiting and abdominal pain, found to have jejunal diverticulosis complicated by perforation in a CT scan. The patient underwent emergency expletory laparotomy with segmental intestinal resection and anastomosis.
Discussion: The incidence of jejunal diverticulosis ranges between 3 and 5 %, with most patients discovered incidentally. Therefore, medical or surgical treatment management depends on clinical presentation and complications that necessitate surgical intervention.
Conclusion: Jejunal diverticulosis is a rare entity that commonly affects the elderly with significant morbidity and mortality; it is an important clinical entity to consider when approaching patients with acute abdomen.

1. Introduction

Jejunal diverticulosis is a rare entity with an incidence of <3 % and <5 % in an autopsy and imaging, respectively [1]. Like colonic diverticulosis, it is considered an acquired pulsion type, where mucosa and submucosal layer protrude through the weakened area of a muscular layer at the points where the vessels cross the intestinal wall [2]. Although 40 % of the patients are asymptomatic, the presentations are usually non-specific, vague symptoms [3]. Hence, the diagnosis of jejunal diverticulosis is delayed after the development of complications or found incidentally on imaging or intraoperatively due to other causes. This work has been reported in line with the SCARE 2020 criteria [4].

2. Case presentation

We report an 84 years old Saudi female known case of type II diabetes, hypertension, dyslipidemia, coronary artery disease with a history of percutaneous coronary angioplasty ten years ago, and depression. The patient presented to the emergency department complaining of vomiting for two days, which started as food content and then became coffee ground stained, associated with abdominal pain, nausea, distention, and on/off constipation. In addition, the patient had a history of generalized abdominal pain insidious in onset for one month prior to presentation, with no aggravating or alleviating factors.

She denied any history of diarrhea, fever, anorexia, weight loss, or night sweat.

On examination: her vitals were within normal limits. On examination, her abdomen was distended with guarding and normal bowel sounds. Her laboratory workups were sodium of 132 (low), a PT of 16.9, PTT of 43.7, INR of 1.2, and lactic acid of 4.2 (high).

A plain abdominal X-ray showed dilated large bowel loops, no air-fluid level, or air under the diaphragm. CT abdomen showed proximal small bowel diverticulosis with evidence of extensive diverticulitis and perforation in the form of hyper-enhancement and thickening of bowel wall associated with diffuse fat stranding, confined free fluid as well as multiple sub-centimetric lymph nodes and extensive pneumoperitoneum. In addition, a suspicious focal defect communicates with extensive foci of multiple free-air pockets (Fig. 1).

Following fluid resuscitation, the patient was taken for exploratory laparotomy. The intraoperative findings were multiple jejunal diverticulosis and perforation at the jejunum 20 cm distal to the duodenojejunal junction. Bowel resection and anastomosis using stapled side-to-side were done (Figs. 2–3). The patient was shifted to ICU for continuity of care. Unfortunately, on the second day postoperatively patient

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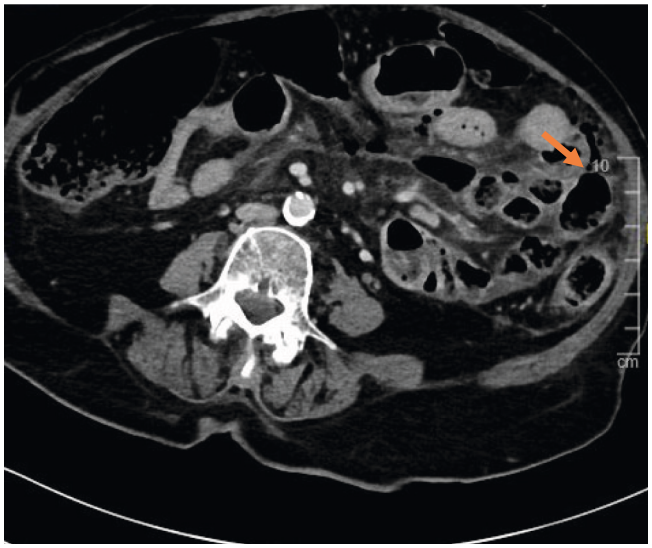

Fig. 1. Axial CT abdomen; showing focal defect at the left ileal segment communicating with extensive foci of multiple free air pockets.

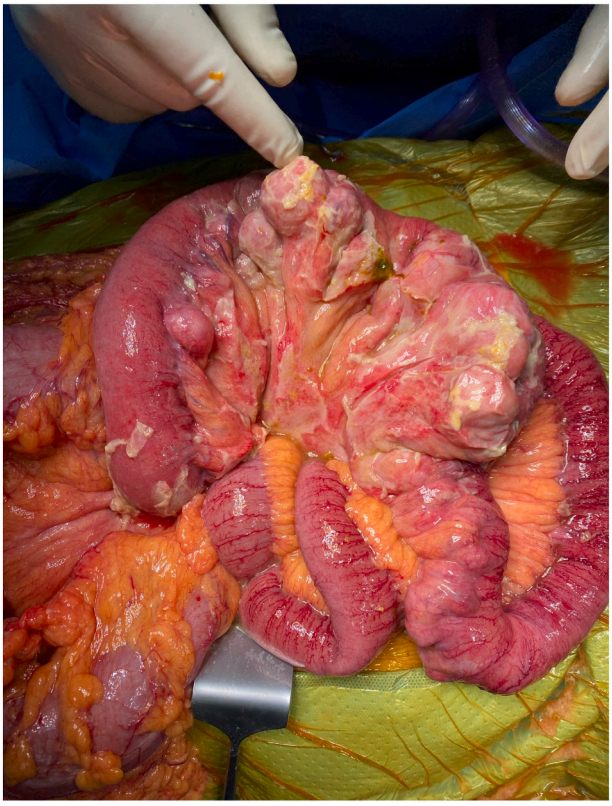

Fig. 2. Intraoperative finding of multiple jejunal diverticulosis.

developed an acute left middle cerebral artery territory infarction that a head CT and intracranial angiogram confirmed. Since then, the patient has maintained a Glasgow Coma Scale (GCS) of 7–9. In three months post-operative follow up patient is doing well on enteral feeding through a percutaneous endoscopic gastrostomy (PEG) tube.

3. Discussion

Diverticular disease is a relatively common disease that mainly affects the colon, but to a lesser extent, it can also affect the different parts

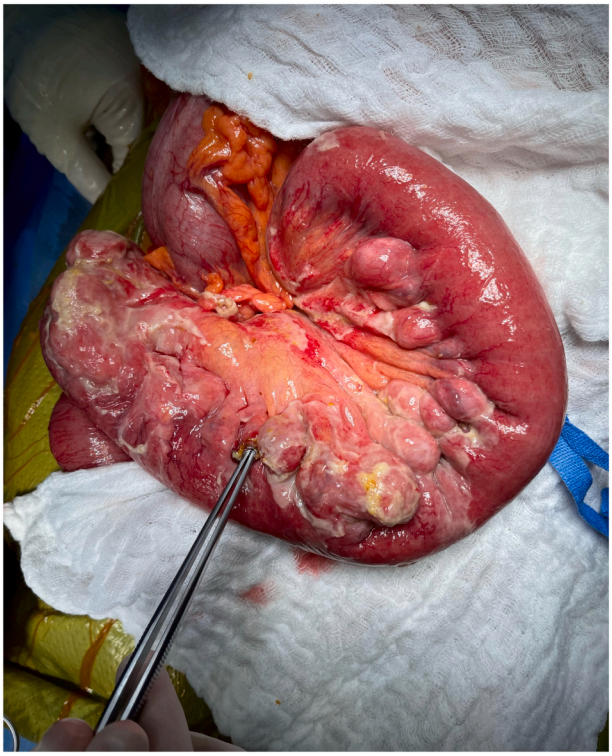

Fig. 3. Perforated jejunal diverticula 20 cm distal to the duodenojejunal junction.

of the small intestine, duodenum, jejunum, and ileum, respectively [5,6].

Jejunoileal diverticulosis (JID) was first described by Somerling in 1794, followed by Astley Cooler in 1809 [7]. is a rare disease because it represents only 18 % of all small bowel diverticulosis [3,7]. While jejunal diverticulosis, solitary or multiple, is rare. It represents 0.5–2.3 % in imaging studies, while in Autopsy studies, it represents 1.3–2.3 % of all diverticular diseases [1].

Diverticulosis is a numerous outpouching of only mucosa and submucosa layers of the intestine [8]. JID commonly affects the elderly male population in their sixth or seventh decade of life, and the risk increases if the patient has past colonic diverticulitis disease. Moreover, studies show that diverticular disease runs in families [7]. Although the exact etiology is still unknown, some studies demonstrate risk factors that increase the risk of developing diverticulosis, such as intestinal dyskinesia, peristalsis abnormality, and high intraluminal pressure [9]. The symptoms of JID are usually vague and non-specific such as nausea, vomiting, and abdominal discomfort or pain, mainly in the epigastric or periumbilical region, although the patient becomes symptomatic once complications occur, like hemorrhage, bowel obstruction, perforation, peritonitis, abscess, and fistula formation [3,10]. This, in turn, makes diagnoses in the early stage so challenging and underestimated. Therefore, the condition is usually diagnosed incidentally by imaging or intraoperatively for other reasons, either by laparoscopy or laparotomy approaches [7,11]. In our case, the patient presented with nausea, vomiting, abdominal pain, and distention with on and off constipation which are usually present in patients with JID from previously reviewed literature.

The gold standard modality to diagnose JID is through computerized tomography (CT) scan showing outpouchings of the intestinal wall that may contain air, contrast, or fecal material. However, the definitive diagnosis is made through laparoscopy or an exploratory laparotomy procedure [8].

The management of JID is either medical or surgical treatment depending on the clinical condition and the presence of complications at

the presentation time [10,11]. For example, in the case of nonperforated localized peritonitis, a trial of medical treatment with broad-spectrum antibiotics, bowel rest, and percutaneous image-guided aspiration for localized intraperitoneal collection before going to the invasive surgical intervention [3,7,10]. Nevertheless, urgent laparotomy is mandatory in complicated JID with generalized peritonitis or failure of medical treatment, with segmental bowel resection and anastomosis as the definitive treatment for JID. In our case, confirmed perforation and patient condition necessitate surgical intervention with resecting the diseased segment with primary anastomosis. However, some literature reviews suggest going through a minimally invasive procedure and conservative management depending on the patient's condition, and clinical presentation [11].

4. Conclusion

JID is a rare entity that commonly affects the elderly male population. Hence, most patients are asymptomatic or have vague, non-specific symptoms after complications development; the early-stage diagnosis is usually incidental by imaging or intraoperatively for other reasons. The gold standard imaging modality is CT with contrast. JID can be managed conservatively or surgically depending on the clinical condition and complications at the presentation time.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Ethical approval

Ethical approval is exempt at our institution.

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All authors contributed equally in literature review, written the manuscript, reviewing and editing.

Conflict of interest

N/A.

References

[1] K. Natarajan, M. Phansalkar, R. Varghese, G. Thangiah, Jejunal diverticulosis with perforation – a challenging differential diagnosis of acute abdomen: case report, J. Clin. Diagn. Res. 9 (2) (2015 Feb).
[2] D. Abdelhalim, T. Kania, A. Heldreth, N. Champion, I. Mukherjee, Operative management of perforated jejunal diverticulitis, Cureus 14 (1) (2022 Jan).
[3] T. Tenreiro, H. Moreira, S. Silvia, R. Marcques, A. Monterio, J. Gasper, A. Oliveira, Jejunoileal diverticulosis, a rare cause of ileal perforation- case report, Ann. Med. Surg. 6 (2016 Mar) 56–59.
[4] R.A. Agha, T. Franchi, C. Sohrabi, G. Mathew, for the SCARE Group, The SCARE 2020 guideline: updating consensus Surgical CAse REport (SCARE) guidelines, International Journal of Surgery 84 (2020) 226–230.
[5] P. Raj, C. Ang, H. Lim, M. Wong, Acute abdomen caused by perforated jejunal diverticulitis, IIUM Med. J. Malaysia. 20 (3) (2021).
[6] A. Ceuppens, S. Dhont, B. Sneyers, C. Schepers, K. Ramboer, P. Hootegem, Jejuno-ileal diverticulosis: a review of literature, Acta Gastroenterol. Belg. 81 (4) (2018) 517–519.
[7] N. Leigh, B. Sullivan, R. Anteby, S. Talbert, Perforated jejunal diverticulitis: a rare but important differential in the acute abdomen, Surg. Case Rep. 6 (1) (2020).
[8] A. Sarıtaş, U. Topal, İ. Eray, K. Dalcı, A. Akçamı, K. Erdoğan, Jejunal diverticulosis complicated with perforation: a rare acute abdomen etiology, Int. J. Surg. Case Rep. 63 (2019) 101–103.
[9] B. De Peuter, I. Box, R. Vanheste, S. Dymarkowski, Small-bowel diverticulosis: imaging findings and review of three cases, Gastroenterol. Res. Pract. 2009 (2009).
[10] J. Butler, C. Collins, G. McEntee, Perforated jejunal diverticula: a case report, J. Med. Case Rep. 4 (1) (2010).
[11] W. Liu, A. Darehzereshki, M. Matsuura, C. You, A shift in surgical management of perforated jejunal-ileal diverticulitis? Two case reports, Int. J. Case Rep. (2021) 219.