JEJUNAL DIVERTICULITIS: AN UNUSUAL PRESENTATION OF ACUTE ABDOMEN

DIVERTICULITE JEJUNAL: UMA APRESENTAÇÃO RARA DE ABDÓMEN AGUDO

ANA SOFIA ALVES[1], ANA LUÍSA LOURENÇO[1], MARTA COSTA[1], REGINA MARTINS[1]

[1] Radiology Department, Centro Hospitalar Lisboa Central, Lisbon, Portugal

ABSTRACT

Jejunal diverticula are rare and often incidentally discovered. The most common complication is jejunal diverticulitis, which is frequently overlooked and not routinely considered as a differential diagnosis of acute abdomen because of the location of the diverticula, the patient's age and the rarity of the disease. Computed tomography (CT) is the imaging modality of choice for diagnosis and evaluation of its extent and complications. We present a 64-year-old woman with a history of progressive abdominal pain, constipation and fever, where jejunal diverticulitis was diagnosed based on CT findings. The CT scan displayed a large, thickened wall, inflammatory mass containing gas and feces-like material adjacent to a jejunal loop, with surrounding inflammatory reactive changes, as well as a few smaller noninflamed diverticula at different levels of the small bowel. The patient was hence diagnosed with uncomplicated jejunal diverticulitis and managed conservatively with complete recovery. The purpose of this article is to illustrate a case of jejunal diverticulitis, as well as to review the current literature regarding the epidemiology, pathogenesis, clinical features, radiologic findings and management of this condition.

Keywords: *Abdomen, Acute, Multidetector Computed Tomography, Jejunal Diseases, Diverticulitis.*

RESUMO

Os divertículos do jejuno são raros e frequentemente descobertos incidentalmente. A complicação mais comum é a diverticulite jejunal, que é frequentemente negligenciada, não sendo por rotina considerada como um diagnóstico diferencial de abdómen agudo devido à localização dos divertículos, à idade do doente e à raridade da doença. A tomografia computorizada (TC) é a modalidade de imagem de escolha para o diagnóstico e para avaliação da extensão da doença e suas complicações. Apresentamos um caso de uma mulher de 64 anos com história de dor abdominal progressiva, obstipação e febre, em que a diverticulite jejunal foi diagnosticada com base nos achados da TC. A TC mostrou uma grande massa inflamatória, de parede espessada, contendo gás e aparente conteúdo fecal, adjacente a uma ansa jejunal, com alterações inflamatórias reativas circundantes, bem como alguns pequenos divertículos não inflamados em diferentes níveis do intestino delgado. A doente foi diagnosticada com diverticulite jejunal não complicada e tratada de forma conservadora, com recuperação completa. O objetivo deste artigo é ilustrar um caso de diverticulite jejunal, bem como rever a literatura mais recente no que diz respeito à epidemiologia, patogénese, características clínicas, achados radiológicos e tratamento desta doença.

Palavras-chave: *Abdómen Agudo, Tomografia Computadorizada (Multidetectores), Doenças Jejunais, Diverticulite.*

INTRODUCTION

Diverticula are sac-like protrusions that can be present at any location along the gastrointestinal (GI) tract. In order of decreasing frequency, they are found in the colon, duodenum, esophagus, stomach, jejunum, and ileum[1,2].

Diverticula in the jejunum and ileum are rare and reported to affect 0.5 to 2.3% of individuals in radiologic studies and up to 7% in autopsy/post mortem studies[3]. These diverticula are usually multiple, organized in clusters, and tend to be larger and numerous in the proximal jejunum and smaller and fewer towards the ileocecal valve. Coexistent diverticula are found in the colon in 20%-70%, in the duodenum in 10%-40%, in the esophagus and stomach in 2% of patients and may indicate associated etiology[4,5].

Jejunal diverticula are probably the result of an acquired disease process. These pulsion-type false diverticula occur along the mesenteric border of the intestine, where blood vessels pierce the muscularis layer of the bowel wall, causing weak areas that lead to herniation of mucosa and submucosa through the muscular layer[6,7]. It is also believed that abnormalities in peristalsis, intestinal dyskinesia, and high segmental intraluminal pressures may play a role[8,9].

Jejunal diverticula are more commonly reported in men with the highest incidence in the 6th and 7th decades.

Jejunal diverticular disease is usually not suspected clinically and often discovered incidentally on contrast imaging studies of the GI tract (eg, upper GI series with small bowel follow-through and computed tomography (CT) / magnetic resonance (MR) enterography) or endoscopy. However, acute complications may occur and can be severe and life-threatening.

The accurate prevalence of complications in jejunal diverticulosis is difficult to assess, ranging from 6 to 40%[2,10]. Its most frequent complication is diverticulitis, followed by hemorrhage and bowel obstruction. Diverticulitis may be complicated by abscess, perforation, or fistula[11].

CASE REPORT / CASE PRESENTATION

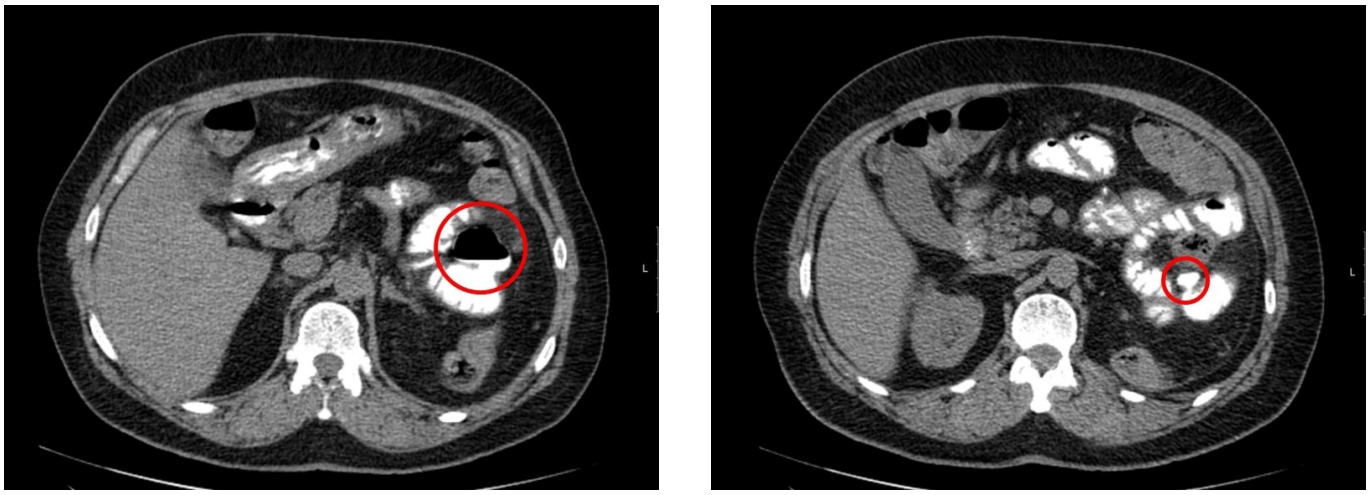
A 64-year-old woman was admitted to the emergency department with a three-day history of progressive abdominal pain, constipation, and fever.

She had a history of renal insufficiency (chronic kidney disease (CKD) stage 3 – 4) after left nephrectomy due to renal carcinoma three years before, without evidence of recurrence in the follow-up. She also had a history of hypertension, hyperlipidemia, ischemic cardiomyopathy, and diabetes mellitus. The patient reported no other systemic problems.

Physical examination revealed diffuse abdominal pain with peritonism, guarding, and rebound tenderness in the left lower quadrant. The abdomen was also distended with decreased bowel sounds. The auricular temperature was 38°C. Other systems examination was unremarkable.

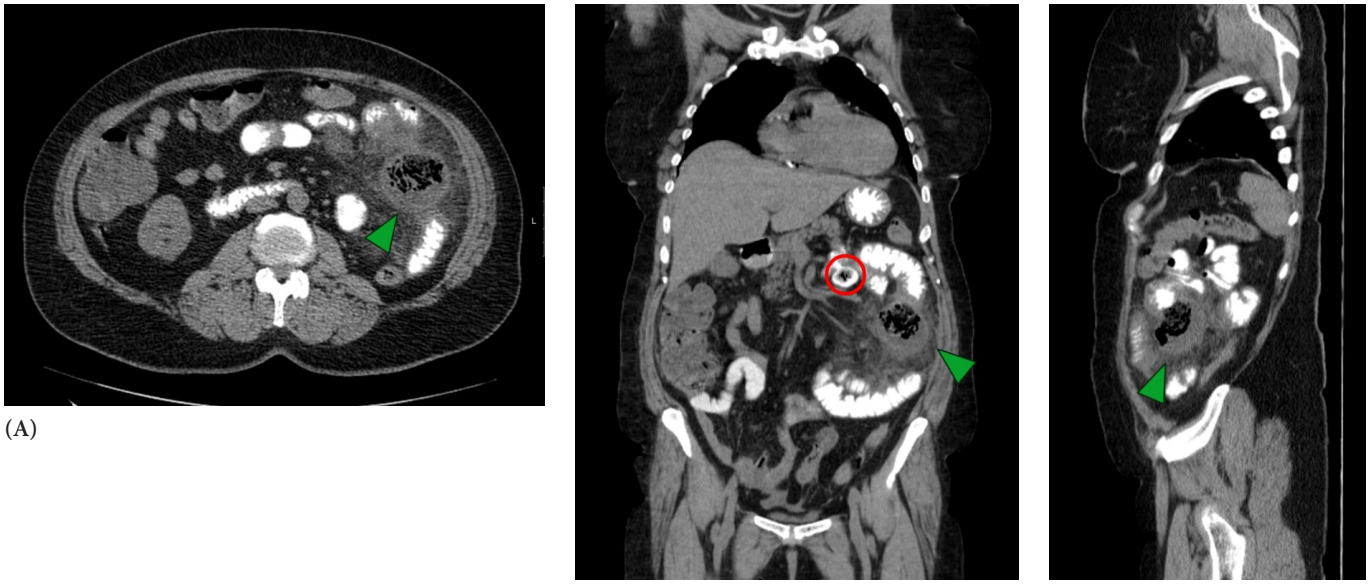
On admission, her blood work revealed elevated white blood cell count (32.3 x 10^9/L; normal range 4.5-11.0 x 10^9/L) with neutrophilia and high levels of C-reactive protein (391.1 mg/L; normal < 5.0 mg/L) and blood urea nitrogen and serum creatinine levels elevated compatible with CKD. Other laboratory data were within normal limits.

An abdominal plain radiograph showed no significant alterations. Then, an abdominal and pelvic CT with administration of positive oral contrast was performed, without intravenous (IV) contrast due to renal insufficiency. CT scan revealed multiple diverticula along the mesenteric border of the bowel predominantly distributed in the jejunum (Figure 1), the largest measuring about 55 mm, containing gas and feces-like material, with thickened wall and surrounding inflammatory reactive changes (Figure 2). There was also parietal thickening and slight distension (3 cm) of the adjacent jejunal loops. In association, multiple reactive mesenteric nodes were present. There was no evidence of pneumoperitoneum. These changes were suggestive of inflammatory/infectious process,



(A) (B)

FIGURE 1 – **(A and B) – Axial CT scan of the abdomen with positive oral contrast shows small intestine diverticula with oral contrast tracking into them (red circle).**



(A) (B) (C)

FIGURE 2 – **(A, B and C) – A. Axial CT scan with positive oral contrast shows a large, thickened wall, inflammatory mass (green arrowhead), in the left quadrant adjacent to a loop of small bowel, with surrounding mesenteric fat stranding. B. and C. Coronal and Sagittal planes show a focal inflammatory process centered upon a diverticulum (green arrowhead), with surrounding inflammatory changes and also a few smaller noninflamed diverticula (red circle).**

namely acute jejunal diverticulitis. There was also a mild volume of fluid in the pelvic cavity (Figure 3) and coexisting diverticulosis of the left colon, without translation of diverticulitis (Figure 4).

The surgical team decided for conservative management, with IV hydration and antibiotics (piperacillin and tazobactam 4.5 g every 8 h for 7 days).

During hospitalization the patient's clinical condition improved, her temperature normalized and her white blood cell count returned to baseline. The patient made a full recovery and was discharged

Figure 3 – **Mild ascites.**

Figure 4 – **Diverticulosis of the left colon.**

on the seventh day after completing the medical therapy, tolerating a regular diet with follow-up in the gastroenterology clinic.

DISCUSSION / CONCLUSION

Jejunal diverticulitis usually manifests as an acute abdomen.

The clinical suspicion of jejunal diverticulitis is difficult even in the presence of symptomatic complications as its nonspecific symptoms may mimic other diseases, including appendicitis, acute cholecystitis, and colonic diverticulitis[12]. Therefore, the diagnosis is often overlooked or delayed.

Laboratory studies tend to be nonspecific, with elevated inflammatory markers and leukocytosis.

In the past, small bowel diverticulitis was a diagnosis of exclusion, discovered only on exploratory laparotomy performed for another suspected clinical diagnosis. Nowadays, the technological advances and the increased availability of CT have improved the diagnosis of small bowel diseases.

CT of the abdomen and pelvis is the imaging modality of choice for diagnosis and should ideally be performed with oral contrast to show the round or ovoid outpouching lesions with thickened walls outside the expected lumen of the small bowel, with a neck arising from an adjacent loop and surrounded by inflammatory changes[13].

As jejunal diverticulitis is a focal inflammatory process adjacent to a jejunal loop, several other differential diagnoses could be suggested, such as neoplasms and Crohn's disease. However, asymmetric small bowel wall thickening adjacent to a diverticulum with small reactive mesenteric nodes and peridiverticular mesenteric fat stranding is characteristic of acute diverticulitis[2,13,14]. The presence of multiple diverticula in non-diseased segments can also help to differentiate these entities.

Currently, no known comprehensive guidelines for the treatment of small bowel diverticulitis exist, so the therapeutic approach is often similar to the colonic diverticulitis treatment[15]. Patients with local and self-limited inflammation (uncomplicated jejunal diverticulitis) can be treated conservatively with parenteral antibiotics and hydration.

Surgery is the standard of care for patients with recurrent symptoms who have undergone unsuccessful medical management or complicated diverticulitis.

It is estimated that the mortality rate for patients with jejunal diverticulitis ranges from 0 to 5%, but in the case of perforation, the incidence is reported to be as high as 40%[9]. Morbidity and mortality are mostly related to the delayed diagnosis as well as

the advanced age and significant comorbidities of the patients.

Clinicians need to be aware of the fact that a presentation of abdominal pain and fever could be due to jejunal diverticulitis, especially in the older population to avoid misdiagnosis and treatment delay.

Radiologists play a major role in the assessment of jejunal diverticular disease and therefore should be familiar with the key imaging findings.

A multidisciplinary approach involving a radiologist, a surgeon and, a gastroenterologist is necessary to make an early diagnosis.

Statement of Ethics

The patient has given written informed consent to publish these features of her case and the identity of the patient has been protected.

Disclosure Statement

The authors have no conflicts of interest to declare.

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Correspondência:

ANA SOFIA FIGUEIREDO ALVES

e-mail: sofiafalves92@gmail.com

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