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Case Report

Acute Abdomen – Rare Cause, Accurate Diagnosis, Simple Solution

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ABSTRACT

Jejunal diverticulitis is a rare disease with higher prevalence among patients between 60 and 70 years and slightly more common in men. They are false diverticula located predominantly on the mesenteric side of the bowel but 10% develop complications which result in major surgery and high overall mortality. Authors report a case of a 63-year-old patient who presented to our department with small bowel perforation. Patient was taken to the operating room where he underwent exploratory laparotomy; intra-operatively a perforated jejunal diverticula with thickened adjacent mesentery and fibrinous debris was found. The surgical option was segmental enterectomy of 20cm, 15cm apart from the angle of Treitz. Perforation of jejunal diverticula should be considered in the differential diagnosis in elderly male patients presenting with an acute abdomen at the emergency department. The diagnosis is challenging and bowel resection with primary anastomosis is the treatment of choice. Although the disease is extremely rare it is important to be aware of the mortality rates associated with delay in the diagnosis and intervention.

Introduction

Sommering was the first to report acquired jejuno-ileal diverticula in 1794 and later the disease was described by Cooper in 1807 [1, 2]. Jejunal diverticula occur in less than 1% of the population [1-12]. The prevalence is higher in patients between 60 and 70 years and slightly more common in men [1, 2, 6-11, 13]. They are false diverticula located predominantly on the mesenteric side of the bowel [1, 4-8, 13]. About 10% of patients diagnosed with jejunal diverticula will develop complications such as diverticulitis, obstruction, perforation, or hemorrhage [1-3, 6, 14]. Complications can result in major surgery and high overall mortality [1]. Authors present a case report of a rare cause of acute abdomen – a patient with a sealed perforated jejunal diverticula.

Case Report

A 63-year-old male patient with personal medical background of overweight, generalized anxiety disorder, gastritis, duodenitis and colonic diverticula. Patient was previously observed in other health care center on where he was admitted for a sealed perforation of unknown etiology – probable foreign body. He was under conservative treatment with antibiotics. After a few days and due to persistence of pain complaints, predominantly on abdominal left quadrants he was admitted at our emergency department. On admission he denied fever and chills and referred regular bowel habits. On objective examination, he had no jaundice nor signs of anemia and had left quadrants tenderness on abdominal palpation. Laboratory tests showed elevation of the inflammatory parameters and CT scan revealed an area of fat stranding in the vicinity of a jejunal loop that shows thickening and blurring of its wall and adjacent adenopathy's, in the region of the left flank (Figures 1 & 2).

Figure 1: CT scan axial view showing an area of fat stranding in the vicinity of a jejunal loop that shows thickening and blurring of the wall and adjacent adenopathy's, in the region of the left flank.

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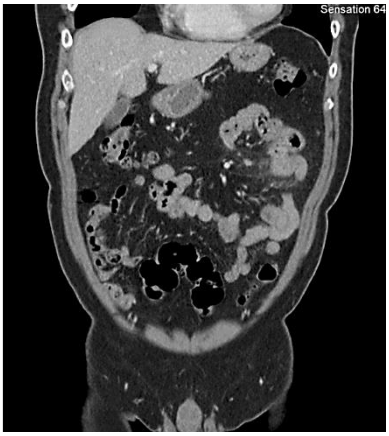

Figure 2: CT scan coronal view.

A presumptive diagnosis of small bowel perforation was made and patient was taken to the operating room. In the laparotomy, on the upper left upper quadrant, we found a mass consisting of perforated jejunal diverticula with thickened adjacent mesentery and fibrinous debris, located 15cm apart of angle of Treitz. The surgical option was a segmental enterectomy of 20 cm (Figure 3). The post operatory was uneventful and he was discharged on the 7th post-operative day. Histology confirmed macroscopic findings and showed a diverticula in the mesenteric border, complicated by acute diverticulitis and peritonitis.

Figure 3: Picture of the surgical specimen – jejunal segment with a diverticula within it mesenteric side.

Discussion

Prevalence of jejunal diverticula may be underestimated due to the non-specific signs and symptoms associated [5, 13]. It is an acquired herniation of the mucosa and submucosa through a weakened area of the muscularis layer of the small bowel wall [2-4, 6-8, 10]. The probability of finding diverticula decreases towards the ileocecal valve and these are much less common than colonic diverticula because of larger size, better intra-luminal flow and relatively sterile jejunal content [2, 6, 9, 13]. The higher prevalence in the jejunum is also due to larger vasa recta and anastomotic arcades arising from the superior mesenteric artery [3, 4, 6]. They are false diverticula located predominantly where the blood vessels penetrate the muscular wall of the mesenteric side of the bowel [1, 4-8, 13]. The true aetiology is likely multifactorial and it is thought to be a result of intestinal dyskinesia and disorders of the myenteric plexus, producing high pressure localized areas in the bowel wall [2-6, 8, 12]. These diverticula are associated with disorders such as progressive systemic sclerosis, visceral neuropathies, and myopathy [2, 14].

Generally, this disorder is clinically silent until complications appear [4]. Only 30% of the patients complains symptoms or signs referred as abdominal discomfort, nausea, occasional vomiting, malabsorption, constipation or diarrhea, dyspepsia, and anemia [1, 4-8, 11, 15]. Acute complications occur in only 10% of patients and are related to inflammation of the mucosa and bacterial overgrowth that leads to perforation and subsequent abscess, bowel obstruction or massive hemorrhage. Intussusception and volvulus can also occur [1, 4-6, 8, 15]. Perforation of jejunal diverticula occurs in 2 to 6% of the cases and is associated with high intraluminal pressure, foreign body impaction, blunt trauma, cocaine intoxication or anti-inflammatory or steroid drugs [12, 13]. It can result in the formation of an abscess and fistulous tracts causing bowel adhesions and even suppurative pylephlebitis [1, 2]. More frequently it causes a mesenteric abscess [12, 13]. Symptoms may mimic any other episode of acute abdomen and surgeons who are unfamiliar with the condition may misdiagnose or mismanage the disease [6, 11]. The diagnosis is challenging even in presence of symptomatic complications and there are no accurately complementary exams [1-5]. As a result, jejunal diverticulitis is often first diagnosed intraoperatively and diverticula are often overlooked [15, 16].

Abdominal radiograph can show signs of perforation, intestinal obstruction, or ileus. CT scan can show pneumoperitoneum, free fluid, fat stranding near de diverticula, dilated small bowel loops with thickened walls, abscesses or inflammatory masses [1-3, 6, 13, 15]. The differential diagnosis includes malignancy, impactation or perforation by foreign bodies. Patients with this disease may have however a CT scan with a chronic pneumoperitoneum as a result of micro perforation and air passage through the semipermeable membrane of the diverticula wall [11-13]. Endoscopic procedures, such as double-balloon enteroscopy and capsule endoscopy should not be used in the emergency setting in patients with small bowel obstruction or suspected perforation but can be useful in the management of diverticular bleeding [2-5, 8, 14, 15]. When in the presence of a stable patient with localized peritonitis conservative treatment is an option. CT-guided aspiration of localized intraperitoneal collections may be suitable and avoid an unnecessary surgery [1-4, 12, 15].

There is some evidence to support lavage and drainage alone in the setting of micro perforation only in high-risk patient groups because of the non-negligible risk of progression of the disease into a free perforation [5]. In patients with generalized peritonitis prompt laparotomy with segmental small bowel resection followed by primary anastomosis is standard [1, 2, 4, 5, 9, 11, 12, 15]. Jejunostomy may be reasonable in patients in shock who have severe comorbidities [13]. Unlike in large bowel diverticulitis, in patients with jejunal diverticulitis the adjacent tissues have normal appearance as they are spared [4, 5, 8, 12]. Resection should be limited to include only the segment containing the perforated diverticula to avoid post-operative complications such as short bowel syndrome [3, 4, 9, 14]. Invagination techniques and local excision alone are contraindicated due to higher rates of morbidity [1, 6]. Diverticulectomy alone has the potential to disturb blood flow and puts at risk the anastomosis [3, 5, 9]. Mortality rate in case of perforation is as high as 40% [1, 2, 13, 15]. Poor prognostic factors include advanced age of the patients and in the diagnosis and intervention [1].

Conclusion

Perforation of jejunal diverticula usually leads to chronic non-specific abdominal symptoms [4]. This disease should be considered in the differential diagnosis in elderly male patients presenting with an acute abdomen in the emergency department [6, 15]. The diagnosis is challenging and there are no accurately complementary exams [1-5]. CT scan should always be the modality of choice for investigating a suspect of small bowel diverticula [1-5]. There also are no guidelines in respect to the management of jejunal diverticulitis, nevertheless, in the acute setting, bowel resection with primary anastomosis is the treatment of choice [1-5]. Although the disease is extremely rare it is important to be aware of the mortality rates associated with delayed diagnosis and intervention [1, 6, 8, 13].

Conflicts of Interest

None.

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