CASE REPORT

SMALL BOWEL DIVERTICULOSIS AS A CAUSE OF ILEUS: A CASE REPORT

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Abstract
Small bowel diverticulosis (SBD) is a rare condition. In most cases it is asymptomatic, but sometimes it can be manifested with chronic non-specific or acute symptoms. Because of the absence of pathognomonic signs and symptoms and truly reliable diagnostic tests, SBD is hard to diagnose and this is usually done incidentally by radiographic examination or during laparotomy. For uncomplicated patients, those with chronic abdominal pain, syndromes of malabsorption related to jejunoileal diverticulosis, bacterial overgrowth or an episode of intestinal obstruction, as in our case, conservative management is the initial option for treatment. A case of a patient with obstructive symptoms of the gastrointestinal tract due to SBD that was conservatively treated and had a positive outcome is presented.

Key words: Small bowel, diverticulosis, ileus, management.

Introduction
Small bowel diverticulosis (SBD) represents multiple saclike mucosal herniations through weak points in the intestinal wall as a result of a motor dysfunction of the bowel. Coexisting diverticula in the colon are found in 20–70% of the patients with SBD, in the stomach and oesophagus in 2% of patients, that can indicate associated or common etiology [1–3]. Diverticula are very rare in the jejunum and ileum and the prevalence increases with age, peaking at the sixth and seventh decades [1, 4]. The clinical presentation is wide and diverse and includes chronic abdominal pain, malabsorption, haemorrhage, intestinal obstruction, bacterial overgrowth, abscess formation and sometimes perforation. This is why the identification of this disorder is quite difficult and the delay in correct diagnosis can sometimes lead to life-threatening complications. The diagnosis is usually made incidentally by radiographic examination or during laparotomy [1]. We present a case of small bowel diverticular disease, presented as small bowel obstruction with ileus that was conservatively treated and had a positive outcome.

A case report
A 65-year-old woman, with previous medical history of a few biliary attacks (some of them followed with yellowing of the skin, but always resolved by antibiotics), was admitted to the hospital complaining of constipation, abdominal pain and vomiting. Physical examination revealed distention and tenderness of the abdomen, and no palpable mass. Laboratory investigations showed a slightly elevated white blood cell count (WCC 12 × 10⁹/L) and a C-reactive protein of 40 mg/l. All other laboratory data were within the normal range. Ultrasound examination revealed an elevated white blood cell count (WCC 12 × 10⁹/L) and a C-reactive protein of 40 mg/l. All other laboratory data were within the normal range. Ultrasound examination revealed emphasized small bowel wall in certain segments. Abdominal x-ray was performed and demonstrated multiple air-fluid levels and bowel dilatation. Under suspicion of acute abdomen, she was transferred to the digestive surgery unit. The patient was treated with bowel rest, intravenous fluids (3000 ml cristalloid fluids) and broad spectrum IV antibiotics (ceftriaxon 2 g per day) which resulted in reduction, and a few days later in complete withdrawal of the symptoms. After three weeks colonoscopy was performed, with no pathological finding; however, the contrast examination of the small bowel revealed the presence of multiple jejunal diverticula without signs of stenosis or fistulisation. The patient is symptom-free and feels well 6 months later.
Discussion

Small bowel diverticulosis is a rare entity, with a reported prevalence on conventional barium studies of 0.3%–1.9% and at autopsy of 0.3%–1.3% [5–7]. Soemmering and Baillie first described small bowel diverticula in 1794, and Cooper in 1907 was the first to report the same lesion at autopsy [8, 9]. In 1906 Gordinier and Sampson were the first to report intestinal diverticula in a living patient when they described a case of multiple small-intestinal diverticula noted incidentally at laparotomy in a patient who had obstructive symptoms of the gastrointestinal tract [10, 11]. Although the aetiology of this condition is not known, it is thought to be a result of a motor dysfunction of the small bowel or myenteric plexus resulting in abnormality in peristalsis that generates increased intraluminal pressure. The final result is herniation of the mucosa and submucosa through the weakest points of the bowel (mesenteric side) [7, 12].

Small bowel diverticula are less common than colonic diverticula and 80% of them occur in the jejunum, 15% in the ileum and 5% in both [1].

The more frequent localization of small bowel diverticula in the proximal jejunum and distal ileum correlates with the greater diameter of vasa recta in these segments of intestine. Another additional factor is the relative absence of fat surrounding the ileal mesenteric vessel, that further weakens the intestinal wall at points of vascular penetration [11]. Small bowel diverticula can be classified according to their anatomy and according to their development. Anatomically they are divided into true diverticula, containing all the layers of the intestinal wall, and the more common, false diverticula, pseudodiverticula with lack of the muscular layer. According to their development, diverticula are classified as congenital (eg. Meckel’s diverticulum) and acquired [11].

Usually SBD is clinically silent and when symptoms occur they are results of some of its complications. When symptoms do occur, SBD is mostly presented with chronic abdominal pain with different localization and intensity (from mild abdominal distress and bloating after food intake to crampy, sharp pain). This presentation of wide and non-specific symptoms can be easily misdiagnosed as some other intra-abdominal acute conditions such as cholecystitis, appendicitis, perforated ulcer and others [1]. The complications occur secondarily and they are the result of dyskinesia, stasis and inflammation of the intestine, and they can be presented as haemorrhage, malabsorption, abscess formation or obstruction (ileus). These complications occur in 8%–30% of patients and usually require surgical intervention [1, 13].

The reported mortality for perforated small bowel diverticula is 21–40% [6, 14]. Because of the absence of pathognomonic symptoms and signs, SBD is usually diagnosed incidentally either by radiographic examination or upon laparotomy due to complications. On radiographic contrast examination SBD appears as one or more hemispheric air-contrast shadow or as a pedunculated collection of barium continuous with the intestinal lumen [Fig. 1–4]. Abdominal radiography can show multiple air-fluid levels and bowel dilatation, signs of intestinal obstruction or ileus [10]. CT findings in a case of SBD can reveal mass with air-fluid collection, thickening of the wall, inflammatory mass or localized abscess formation [15–17]. When complications of SBD occur diagnostic laparoscopy is useful in investigating the patient and confirming the suspected diagnosis. In the presence of laparoscopic findings such as perforation, abscesses, and mechanical obstruction, exploratory laparotomy is required with resection of the diseased bowel [10]. With the onset of symptoms, frequent small feedings and rest in a supine position for 1 hour after meals are also recommended [11]. For uncomplicated patients, those with chronic abdominal pain, bacterial overgrowth, syndromes of malabsorption related to jejunoileal diverticulosis or an episode of intestinal obstruction, as in our case, conservative management is the initial treatment option.

Figures 1, 2 – Small-bowel barium exam performed three weeks after acute onset revealed the presence of multiple jejunal diverticula, without signs of stenosis or fistulisation

Figures 3, 4 – Other figures clearly showing the pouching of the bowel wall – small bowel diverticula
Conclusion
Because of its non-specific signs and symptoms, small bowel diverticulosis presents a challenge in diagnosis and treatment. It should not be considered as an insignificant finding and the importance of this entity lies in its potentially life-threatening complications and death. For uncomplicated patients conservative management is the initial option of treatment that will reduce the symptoms and the risk of complications. In the presence of complications and unresponsive to conservative treatment, surgical treatment is crucial.

REFERENCE

Тенкоцревна дивертикулоза
Како причина за илеус:
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Тенкоцревната дивертикулоза е ретка состојба. Во повеќето случаи таа е асимптоматска, но некогаш може да се манифестира со хронични неспецифични или акутни симптоми. Поради отсуството на патогномонични знаци и симптоми и вистински рељевани дијагностички тестови, тенкоцревната дивертикулоза тешко се дијагностицира и тоа вообичаено се прави случајно со радиографско исследување или пак, во текот на лапаротомијата. Кај пациентите без компликации, односно оние со хронична абдоминална болка, малабсорбтивен синдром како резултат на јејунална дивертикулоза, прекумерен бактериски раст или со епизоди на интестинална опструкција, како што е во нашиот случај, конзервативниот метод наранчеството е иницијална опција за третман. Препорекува се случај на пациент со опслужуван симптоми на гастроинтестиналниот тракт како резултат на тенкоцревна дивертикулоза кој беше конзервативно третиран и имаше позитивен исход.

Клучни зборови: тенки црева, дивертикулоза, илеус, третман.