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Small-Bowel Diverticulosis Mimicking an Ileal Tumor: A Case Report and Review of the Literature

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ABSTRACT

Diverticular disease of the small intestine is rare, much less common than diverticular disease of the colon. The most common symptom is non-specific abdominal pain and a feeling of bloating sensation. Major complications include diverticulitis, gastrointestinal bleeding and acute perforation. Radiological imaging now allows precise diagnosis, and new endoscopic and interventional radiological techniques have made it possible to limit the urgent surgical indication. Conservative treatment is suitable for most asymptomatic patients. Surgery is still necessary in case of perforation or diverticulitis. We describe the clinical case of an 80-years-old female patient with left flank pain, abdominal *computed tomography* scan revealed an ileal tumor but diagnostic laparoscopy revealed an uncomplicated small bowel diverticular disease.

Introduction

Acquired diverticulosis of the small intestine in adults is rare. Acquired diverticula are impulse diverticula and results from intestinal dyskinesia. The most frequent clinical manifestation is poorly defined abdominal pain, which in half of the cases progresses in a chronic state. Complications, which are not exceptional, are potentially severe, due to the fact that diagnosis and treatment are often delayed.

Case report

We report the case of an 80-years-old patient with a medical history: hypertensive heart disease since 10 years under beta-blockers and antagonist of angiotensin II receptor, surgical: thyroidectomy in 2011 under levothyroxine, hospitalized for etiological assessment of pain in the left flank. This pain is a type of cramps, of moderate intensity, intermittent, without externalized digestive bleeding or transit disorder evolving for a month in a context of apyrexia and conservation of general condition. Clinical examination found a patient in good general condition (WHO: 1) and abdominal palpation revealed a moderate pain sensation in the left flank without a mass.

The abdominal ultrasound found a digestive thickening in the left flank. The abdominal computed tomography scan objectified an irregular tumor wall thickening of an ileal loop in the left flank, coming into contact with the anterior abdominal wall without a separation border and seems to be focally adhere with infiltration of the adjacent fat (figure 1), measuring 2 mm of thickness and spread over 25 mm with colonic diverticula without signs of complications.

In the biological assessment; white blood cells counts normal, there was no anemia or inflammatory syndrome. The carcinoembryonic antigen was normal.

The patient was admitted to the operating room and laparoscopic exploration found a jejunal diverticular lesions starting at 30 cm from the duodeno-jejunal angle up to 100 cm, the largest of which measures 3 cm in diameter. The exploration of the rest of the small intestine does not reveal other lesions up to the ileocecal valve. The macroscopic aspect of the appendix was normal. The colonic exploration found multiple uncomplicated small diverticula. The postoperative was without complications.

The patient was put on bi-antibiotic therapy with good clinical evolution.

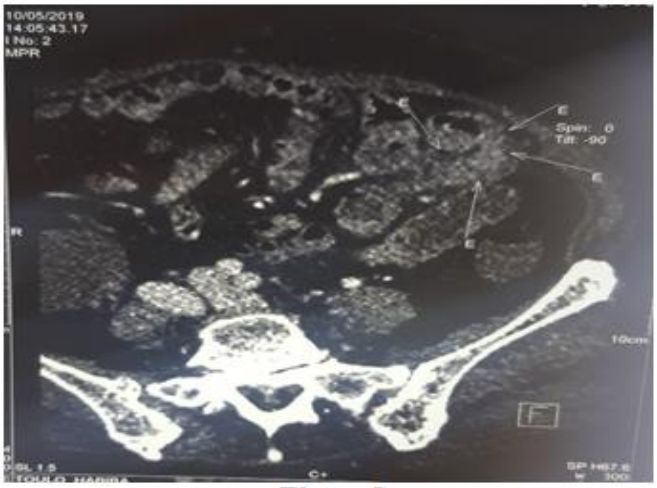

Figure 1

Discussion

Diverticulosis of the small intestine affects between 2 and 10% of the population, and is rarer than that of the colon. Duodenal diverticulum affect 6% of patients. Most of the duodenal diverticula are unique and located in the 2nd portion of the duodenum. In the rest of the small intestine (jejunum and ileum), diverticula are present in 0.06% to 1.3% of patients, most often occur in the jejunum (80%), ileum (15 %), or the two (5%). The higher incidence in the jejunum compared to the ileum is attributed to the larger diameter of the penetrating jejunal arteries. They are generally multiple (two thirds of cases) and their size varies from a few millimeters in diameter to 10 cm in length [1,2,3].

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They are rare before the age of 40, especially seen during the 6th or 7th decade. However, there is a predominance of jejuno-ileal diverticula in males, while duodenal diverticula occur equally in males and females [4,5].

The acquired diverticulum corresponds to a hernia of the mucosa, the submucosa and does not include a muscular membrane. They do not have a real muscular wall and are generally located on the mesenteric edge of the small intestine, localizing at points of weakness in the digestive wall, generally at the site of vessel penetration. This area has less fat and less longitudinal muscle than other areas [3,4,6].

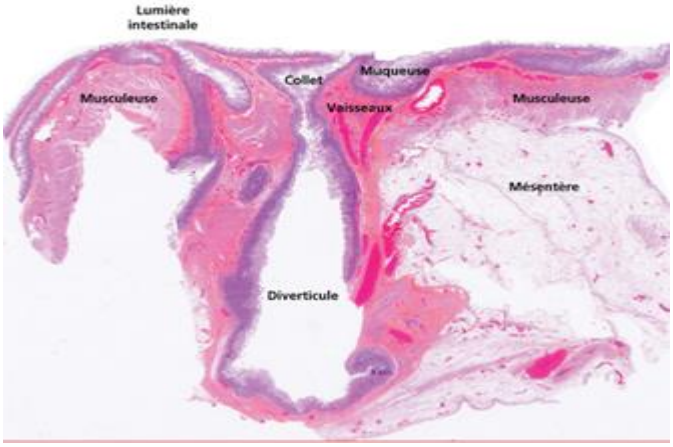

Figure 2.Histological section of a diverticulum of the small intestine.

Coexisting diverticula may be present in the colon in 35 to 75% of patients as is the case in our patient; in the duodenum in 15-42%, in the esophagus in 2%, in the stomach in 2% and in the bladder in 12% of the cases [5,8**]**. Rare cases associated with neuromuscular pathologies, Ehler Danlos syndrome, or scleroderma [6,7,8].

Most patients are asymptomatic or complain of non-specific abdominal symptoms including recurrent abdominal pain, early satiety, bloating, loud rumbling, and intermittent diarrhea [2,3].

Anemia due to iron deficiency and megaloblastic anemia have often been reported and often attributed to malabsorption, steatorrhea and vitamin deficiency [6,10].

Small intestine diverticula are usually diagnosed by barium x-rays of the small intestine; barium enema (Figure 3), and enteric computed tomography scan but are contraindicated in diverticulitis or acute perforation [2].

Figure 3

Abdominal computed tomography scan reveals the diverticulum as a rounded formation, with a cleaned wall, more or less thicken, and sitting in contact with a small loop (the diverticular neck is not visible on the scanner). Its content is generally airy and heterogeneous, in relation to the stasis of the intestinal contents; intra-lesional calcifications corresponding to enterolites are also possible. Sometimes the diverticulum, completely collapsed by the inflammation, is not identifiable and only mesenteric abnormalities are visible [4,8].

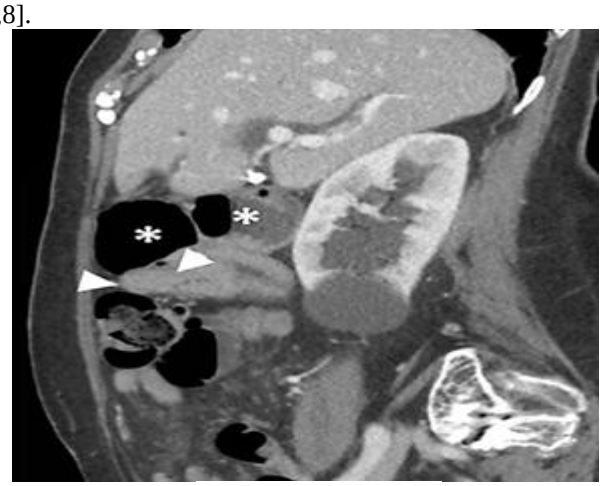

Figure 4. Sagittal *computed tomography* scan showing 2 giant diverticula (asterisk) emerging from the second part of the duodenum (arrowheads).

Eso-gastro-duodenal endoscopy can identify diverticula of the second part of the duodenum while double balloon enteroscopy seems useful in diagnosing diverticula as well as small intestine disorders, with intervention ability. It can be used to stop gastrointestinal bleeding from complicated diverticular disease [9,12].

Video capsule endoscopy is also a useful tool but it is contraindicated in disorders of intestinal obstruction or motility and should be avoided in cases of acute diverticulitis, perforation or obstruction of the small intestine. [6,10].

The differential diagnosis includes tumors, perforation, Crohn's disease, ulceration of the small intestine associated with the use of nonsteroidal anti-inflammatory drugs. Perforated tumors can be difficult to distinguish from jejunal diverticulitis. The tumor most likely to perforate would be lymphoma. However, lymphoma usually shows up on a CT scan as an area of segmental abnormality as opposed to a focal lesion. Discovery of gas mass associated with nearby diverticulum suggests small bowel diverticulitis [7,12].

However, complications can occur in 5-20% of cases. Complications mainly include diverticulitis, bleeding and perforation. Some patients may develop bacterial overgrowth responsible for malabsorption or small intestine volvulus which can cause obstruction [2,3].

Infectious complications are the most frequent (2.3-6.4%) and potentially the most serious. Diverticulitis results from stasis of intestinal contents in the diverticulum, with mucous edema obstructing the neck and microbial overgrowth. The evolution can be done in a subacute mode with constitution of an inflammatory pseudotumor or in a more serious way towards perforation with risk of partitioned or generalized peritonitis. At this stage, the mortality rate can reach 40%, in particular in the elderly, especially as the treatment is often delayed. Indeed, the symptomatology of a complicated diverticulum is generally not very specific and its diagnosis rarely mentioned; the clinical presentation is variable, sometimes discreet, most often misleading, simulating sigmoiditis, appendicitis, or even cholecystitis [4].

On computed tomography, diverticulitis in the small intestine usually presents as a focus of thickening of the wall of the intestine, the most forward on the mesenteric side of the intestine with inflammation and / or abscess formation adjacent [7].

Figure 5.Computed tomography appearance of diverticulitis without signs of complication.

Complications such as abdominal abscesses, fistulas and liver abscesses are possible [6]. In addition, other complications are more specific to the duodenal diverticulum in the peri-ampullary position. Indeed, intermittent compression of the main bile duct or of the bilio-pancreatic duct confluence may be the cause of cholestasis [3].

Conservative treatment is suitable for most asymptomatic patients [2,5].

Antibiotics may be prescribed for bacterial overgrowth syndrome with scan-guided drainage of abdominal abscesses [11].

Exploratory laparotomy with resection of the involved segment and enteroenterical anastomosis is the surgical treatment of choice in the presence of perforated small diverticular disease, hemorrhage or abscess formation after failure of a short period of digestive rest and antibiotics [7]. The extent of segmental resection depends on the length of the bowel affected by the diverticula. If the diverticula involve a long segment of the intestine, like that often happens, resection should be limited to the perforated or inflamed intestinal segment to avoid short bowel syndrome [11].

Figure 6. Operative part of segmental intestinal resection site of diverticulosis.

Other surgical approaches such as intussusception of diverticula, primary perforation closure and diverticulectomy should be avoided as they present high mortality rates [12].

Some authors consider that patients with chronic symptoms can be treated conservatively and when symptoms are persistent or refractory to treatment, resection is imperative [9].

Prophylactic resection for uncomplicated small bowel diverticulosis is not recommended [11].

Conclusion

Small-bowel diverticulosis is a rare entity. It deserves to be known because, although it is most often silent and discovered by fortunate during a laparotomy, it can also reveal itself with complications requiring rapid surgical treatment.

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