A Rare Cause of Abdominal Pain: Jejunal Diverticulosis

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ABSTRACT

Jejunal diverticulosis is a rare condition that remains asymptomatic and, thus, undiscovered in most patients. However, a few cases can develop acute and/or chronic complications that then shed light on their existence. Diagnoses of these complications may be delayed due to the attribution of symptoms to more common causes of abdominal pain. Thus, while jejunal diverticulosis is a rare entity, it is important for clinicians to gain increased awareness of its diagnosis and its potential complications.

In this clinical vignette, we review a case of a 76-year-old female with a past history of sigmoid diverticulitis, who presented with mid-epigastric pain and fever, as well as signs of a partial bowel obstruction. Computed tomography imaging demonstrated extensive jejunal diverticular disease and diverticulitis. She was treated conservatively with antibiotics and bowel rest.

Most complications of jejunal diverticulosis require surgery resecting the portion of the jejunum with diverticula. However, if recognized early, surgery may be avoided in lieu of conservative treatment. This concept of conservative treatment has a broad clinical impact across both medical and surgical specialties. It may allow for the avoidance of surgery, which can predispose some patients to even more harm.

CASE PRESENTATION

A 76-year-old East Indian female, with a history of sigmoid diverticulitis one year prior to presentation, presented to the hospital with the complaint of a sharp, non-radiating mid-epigastric pain worsened by oral intake, along with fever of 102°F, and two episodes of emesis after attempting to eat solid foods in the preceding three days.

Given the persistence of her symptoms without signs of improvement, she reported to the emergency room for further evaluation. In the Emergency Department, the patient had a temperature of 102°F, blood pressure of 141/49 mm Hg, and heart rate of 110 beats per minute. On physical exam, the patient had moderate abdominal distention with pain predominantly in the mid-epigastrium, with rebound tenderness. Laboratory data revealed a hemoglobin of 12.4 grams/dL and a white blood cell count of 20,000/uL with neutrophilic predominance. An acute abdominal series (chest radiograph with supine and erect abdominal radiographs) demonstrated a moderate small bowel ileus. Computed tomog-
raphy (CT) of the abdomen and pelvis showed extensive small bowel diverticular disease and jejunal diverticulitis with mucosal edema and mesenteric stranding (Figure 1). The proximal small bowel was moderately dilated, suggestive of a partial small bowel obstruction.

The patient’s oral intake was held, and a nasogastric tube was inserted to low intermittent suction. She was placed on broad-spectrum antibiotics with intravenous ciprofloxacin and metronidazole, which led to improvement of the patient’s symptoms within 48 hours. The patient was transitioned to oral ciprofloxacin and metronidazole, to complete a 14-day course as an outpatient. An outpatient follow-up in two weeks showed complete resolution of her symptoms and a repeat CT scan at three months showed radiographic resolution of her diverticulitis (Figure 2).

**DISCUSSION**

The literature reports the incidence of jejunal diverticulosis in up to 2.3% of the population found on small bowel contrast studies\(^1\) and in up to 4.6% found during autopsy case series.\(^2\) Jejunal diverticulosis is encountered more frequently in the elderly,\(^3\) with a mean age of about 70 years old.\(^4,5\) The current theory on the pathogenesis of small bowel diverticular formation is that it is a result of a motor dysfunction of the smooth muscle or dysfunction in the myenteric plexus of the small bowel.\(^6\) Uncoordinated contractions of the muscles result in local pressure, extruding the mucosa and submucosa through points of weakness, resulting in formation of diverticula, similar to the pathogenesis of esophageal and colonic diverticula. At least half of the patients with jejunal diverticula are likely to have concomitant colonic diverticula,\(^4,7\) similar to our patient. The size of the diverticula can range from a few millimeters to more than ten centimeters.\(^4,8\) They are usually larger and higher in number in the proximal jejunum compared to the distal small bowel.\(^4\)

Jejunal diverticulosis is generally not visible on plain radiograph images of the abdomen,\(^9\) though distended jejunal loops may suggest its diagnosis.\(^10\) CT or dedicated CT enterography will improve visualization of these small bowel diverticula.\(^11\) The CT images from our patient clearly exhibit the extensive jejunal diverticulosis with inflammatory changes in the left mid-abdomen (Figure 1).

Since jejunal diverticula are generally asymptomatic, about 60% are discovered incidentally upon imaging. However, 30% of patients present with vague abdominal symptoms.\(^12\) Reported symptoms include dull mid-epigastric pain,\(^9\) post-prandial pain, nausea, vomiting, abdominal bloating,\(^4,10\) and chronic diarrhea resulting from small bowel bacterial overgrowth.\(^9\) Unfortunately, the physical exam may be non-specific and the diagnosis heavily relies upon imaging studies.

There is a small subset of patients with jejunal diverticulosis that present with established com
plications and thus, present more acutely. Complications can be separated into acute and chronic complications. In a case series of 300 patients presenting with complications of jejunal diverticulosis, the most common complications reported were diverticulitis, with or without perforation, occurring in 2.3% to 6.4% of cases, hemorrhage occurring in 3.4% to 8.1% of cases, and obstruction occurring in 2.3% to 4.6% of cases.\(^{3,5,7}\) Chronic complications include chronic hemorrhage and malabsorption.\(^7\) Stasis within diverticula along with jejunal dyskinesia can lead to a bacterial overgrowth with resulting diarrhea and malabsorption in up to 10% of patients.\(^7\) Chronic malabsorption can present as an iron-deficiency anemia with microcytosis or a vitamin B12 deficiency with megaloblastosis.\(^8\) Due to its varying presentations, jejunal diverticulosis and its complications, while largely asymptomatic, have the potential to cause significant medical morbidity.

Treatment of jejunal diverticulitis depends on the patient’s clinical presentation. Conservative treatment, consisting of nothing by mouth, intravenous antibiotics, and serial monitoring, is sufficient if no life-threatening complications or emergencies exist,\(^13\) such as in our patient. Certain complications of jejunal diverticulosis presenting in a non–acute manner can receive conservative treatment as well. This was demonstrated by Novak et al., who reported two cases of localized perforated jejunal diverticulosis treated either with intravenous antibiotics or CT-guided abscess drainage.\(^14\) The most definitive and agreed upon treatment of complicated jejunal diverticulosis is resection of all affected jejunum with a primary anastomosis,\(^4,8\) which can alleviate symptoms of both acute and chronic complications. Complications requiring surgery have been reported in up to 10% of patients.\(^3\) While surgery is the most definitive treatment, old age or other comorbid conditions may preclude surgery as an option. Extensive diverticular disease of the small bowel is another contraindication to surgery, as removing large segments could lead to short bowel syndrome.

Excluding the stomach, small bowel diverticula are the rarest form of diverticular disease.\(^12\) However, it should not be excluded from the differential in patients presenting with chronic abdominal pain and bowel changes. A suggested triad of obscure pain, anemia, and dilated loops of bowel on barium radiograph can be used to evaluate jejunal diverticulosis.\(^15\) Management of patients with small bowel diverticular disease includes conservative management, replacement of micronutrient deficiencies, treatment of small bowel bacterial overgrowth, and expectant management for acute complications.

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**LEARNING POINTS**

1. Although rare, small bowel diverticulosis can be a cause of abdominal pain that should not be overlooked in a differential.

2. Complications of jejunal diverticulosis can vary and include infection, hemorrhage, obstruction, and malabsorption.
3. Treatment of complicated jejunal diverticulosis is often surgical; however, medical management should be attempted whenever possible to avoid surgical complications such as short bowel syndrome.

REFERENCES


