Non-operative successful management of a perforated small bowel diverticulum

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INTRODUCTION

Jejunoileal diverticula are rare. They are incidentally found in less than 0.5%-2.3% of small bowel contrast studies and less than 0.3%-4.5% of autopsy studies[1]. First described in 1794, they are thought to occur due to mucosal and submucosal herniation through weakened areas of the muscularis mucosa of the bowel, usually on the mesenteric border. Most small bowel diverticula are asymptomatic and can be observed without need for intervention. Six to ten percent of patients develop complications including diverticulitis, perforation, obstruction and/or hemorrhage. Conventional treatment for a perforated jejunoileal diverticulum consists of surgical resection of the involved segment with small bowel anastomosis. We describe here the case of a patient who presented with a perforated jejunal diverticulum and a peri-diverticular abscess, who was successfully treated non-operatively.

CASE REPORT

A 77-year-old male presented to the emergency room with a three day history of abdominal pain. The pain was sharp and constant in nature and localized just lateral and inferior to umbilicus. He endorsed that he continued to pass flatus and have normal bowel movements. His...
past medical history was pertinent for a remote surgical history of a gunshot wound to the abdomen requiring an exploratory laparotomy in 1968, the details of which were unknown by the patient. On review of systems, he denied diarrhea, vomiting, blood per rectum or signs of obstruction. On examination, his vital signs were stable, and he appeared alert, oriented and not in any acute distress. His abdomen had a well-healed midline laparotomy scar and was focally tender to palpation with guarding lateral to the scar in the right lower quadrant. There was no guarding or rebound tenderness. His laboratory studies showed a leukocytosis of 11.4 th/cmm with a neutrophilic predominance. Computed tomography (CT) demonstrated a focally thickened loop of small bowel in the anterior midabdomen with a small collection adjacent to the thickened small bowel measuring 2.8 cm \* 1 cm. There was no evidence of obstruction and the thickened loop appeared most consistent with a perforated small bowel diverticulum (Figure 1A). He was started on broad spectrum antibiotic coverage utilizing IV Ampicillin, Ciprofloxacin and Flagyl and was hydrated with IV fluids and treated with bowel rest. The collection was deemed too small for percutaneous drainage. His pain significantly improved over the next 3-4 d, and he was discharged on hospital day 5 on oral Ciprofloxacin and Flagyl for a 14 d total course of antibiotics. On follow up in clinic 1 wk later, his symptoms had completely resolved, and a repeat CT scan at that time revealed significantly decreased thickening of a focal loop of small bowel with near complete resolution of the adjacent inflammatory changes (Figure 1B). A CT enterography 6 wk later revealed a small bowel diverticulum with complete resolution of the inflammation (Figure 1C). At 1 year phone follow up, the patient remained asymptomatic and had no further episodes of pain.

DISCUSSION

Unlike colonic diverticula, the natural history of small bowel diverticula is not well studied, and most cases in the literature report on operative resection and re-

anastomosis\(^2\). In a small series of 4 cases of complicated jejunal diverticulitis (two cases of gastrointestinal hemorrhage, one case of perforation and one case of enterolith obstruction), all patients underwent surgical resection with good postoperative outcomes\(^1\). In another retrospective review of 208 patients with small bowel diverticulosis, jejunal diverticula occurred in 18% of patients, but were associated with 46% of complications (e.g., bleeding, perforation, obstruction)\(^3\).

Similar to our experience, 2 reported cases of perforated small bowel diverticulitis both initially managed medically with bowel rest and antibiotics have been described\(^4\). One patient later required surgical resection due to failure of medical therapy. Colvin et al\(^5\) similarly described a case of localized peritonitis from a jejunal diverticulum which was successfully managed with bowel decompression and antibiotics. Novak et al\(^6\) reported a series of 2 patients with small bowel perforations secondary to jejunal diverticula who were treated with a combination of antibiotics and percutaneous drainage.

We report here the successful non-operative management of a perforated jejunoileal diverticulum that presented with localized abdominal symptoms and signs. In our patient, intravenous antibiotics alone resulted in complete and long-term resolution of the patient’s symptoms, and are thus recommended as initial management for a perforated small bowel diverticulum with subsequent CT imaging follow-up.

In cases of diffuse peritonitis or pneumoperitoneum on imaging, the authors still recommend surgical exploration and resection.

COMMENTS

Case characteristics
77-year-old male with sharp, constant abdominal pain for 3 d. The patient had normal vital signs and his abdomen was tender to palpation in the lower quadrant.

Clinical Diagnosis
Perforated small bowel diverticulitis with adjacent small abscess.

Differential diagnosis
Common causes of abdominal pain in the right lower quadrant in a male
patient are appendicitis, colonic diverticulitis, and hernia; most of these can be differentiated by appropriate imaging.

**Laboratory diagnosis**
Complete blood count demonstrated mild leukocytosis (11.4 th/cmm) with neutrophilic predominance.

**Imaging diagnosis**
Computed tomography of the abdomen showed perforated small bowel diverticulum.

**Pathological diagnosis**
No pathological specimens were obtained in this case.

**Treatment**
This patient was treated with IV antibiotics and temporary bowel rest.

**Experiences and lessons**
Carefully selected patients with small bowel perforated diverticulitis can be successfully treated with IV antibiotics, bowel rest, and serial abdominal exams.

**Peer review**
This is a case report of rare gastrointestinal diseases; perforated jejunal diverticulitis in a patient whose medical treated was successfully resolved without surgery. The authors admitted that an initial treatment with antibiotic is necessary, but surgical resection is acquired if peritonitis became a risk. Although the knowledge is not novel, a careful evaluation of the case is meaningful because it can be highly risky and the patient response is case per case dependent.

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