Answer

Perforated Small-Bowel Diverticulum With Calcified Fecalith

Examination of the bowel revealed numerous proximal jejunal diverticula, including one that had obviously perforated and was associated with an abscess cavity (**Figure 2**A). After washout of the abdomen, a 90-cm segment of small bowel that contained 11 diverticula was resected, and the 2 ends were joined with a side-to-side functional end-to-end anastomosis. Pathologic examination of the small-bowel specimen revealed a calcified fecalith in the perforated diverticulum and partially digested food particles (Figure 2B).

Small-bowel diverticula are very rare, although the medical literature is scattered with case reports and small case series. The prevalence of these non-Meckelian small-bowel diverticula increases with age because they are considered to be acquired pulsion diverticula, and nonmechanical obstructive symptoms can be related to dyskinesia.[1] In nearly every case in the literature in which patients presented with perforated jejunal diverticula, they were unaware of the presence of diverticular disease and were previously asymptomatic. Although the management of perforated jejunal diverticula is nearly always surgical, there are reported cases of successful nonoperative management when patients presented with only localized abdominal pain.[2]

The diagnosis of perforated jejunal diverticula is often made in the operating room, as in the present case, because the diagnosis can be elusive, even with high-quality cross-sectional imaging that often accompanies a preoperative diagnosis of other intra-abdominal acute processes such as perforated appendicitis.[1,3] However, complications other than perforation can result from jejunal diverticular disease such as massive lower gastrointestinal bleeding, obstruction, or vague nonspecific symptoms.[4,5]

Small-bowel pulsion diverticular disease usually occurs in the jejunum and usually in multiple numbers.[1,3,6] Although there are reports of primary repair and closure of perforated jejunal diverticula,[6] resection of the involved segment seems to be the norm. In the present case, the diverticula were quite large (5-8 cm in diameter), pedunculated, and all contiguous in the proximal jejunum. Presentation with perforation secondary to enterolith has also been reported in several instances[7,8] and has also been associated with multiple diverticula in the proximal jejunum.

This case demonstrates the difficulty in diagnosing small-bowel diverticula even with advanced imaging. The presentation of non-Meckelian jejunal diverticula ranges from generalized peritonitis secondary to perforation to massive lower gastrointestinal bleeding or may present with obstructive symptoms. Although rare, the general surgeon should have some familiarity with small-bowel diverticular disease and its role in both acute and chronic abdominal pathology.

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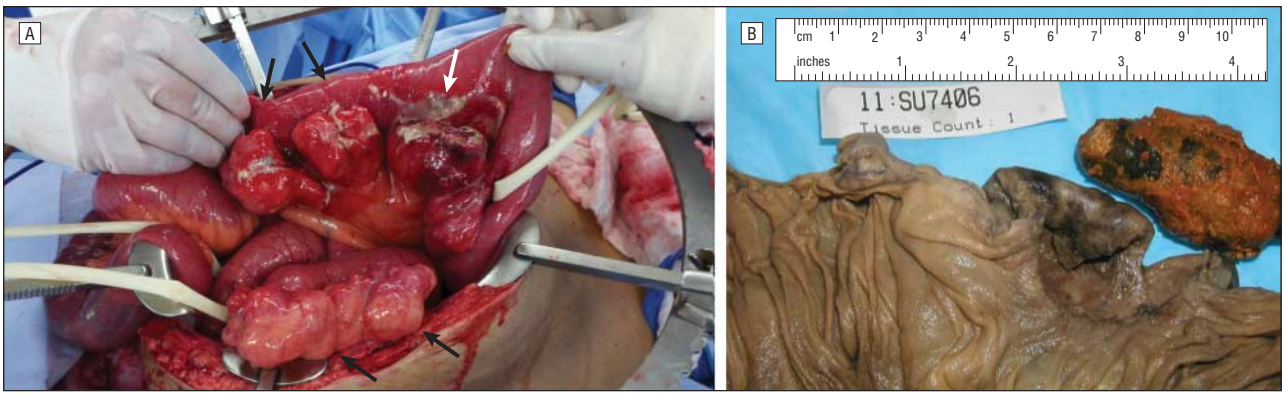

Figure 2. Eleven small-bowel diverticula found in proximal small bowel, one of which was firm and grossly perforated (A). White arrow shows perforated diverticulum, whereas black arrows denote nonperforated diverticula in same small-bowel segment. Pathologic examination revealed calcified fecalith in perforated diverticulum (B).