Case Report

Perforated solitary cecal diverticulum: An etiological challenge at emergency

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Abstract

A 20-year-old man was diagnosed and addressed intraoperatively by resection as a case of solitary cecal diverticulum with perforation, which was indicated by radiography and ultrasonography imaging before the operation. Histological examination confirmed perforated cecal diverticulum with colonic diverticulitis; and to prevent misdiagnosis, both computed tomography and diagnostic laparoscopy should be done. Copyright © 2016, Taiwan Society of Emergency Medicine. Published by Elsevier Taiwan LLC. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Keywords: cecal diverticulum; colonic diverticulitis; diverticular perforation

1. Introduction

Cecal diverticulum (CD) of the right colon is a common ailment in Asian countries, but a solitary CD is rarely observed. Most CDs arise from the anterior aspect of the cecum and have a gangrenous solitary mass with an opening with a congenital origin from the colonic wall. Furthermore, its progressive inflammation often causes perforation with acute, localized and painful peritonitis. Generally, lacking specific symptoms, its etiology is difficult and clinically it mimics an acute appendicitis, with abdominal pain in right side.\textsuperscript{1,2} Like appendicitis, it also causes fever and occasional pain in the iliac fossa, with additional signs of peritonitis, nausea, vomiting and neutrophil leukocytosis. However, CD is often diagnosed by radiography and ultrasonography (USG), but the diagnosis is established intraoperatively. Both appendicitis and CD are addressed by emergency laparotomy. However, a right hemicolecction is performed for CD less often on the primary anastomosis with loop ileostomy, for the correction. Here, we present a rare case of a 20-year-old man with solitary CD with perforation, with preoperative confirmation by radiography and USG.

2. Case report

A 20-year-old man presented with pain in and distension of the abdomen with constipation for 2 days, with a history of recurrent previous mild attacks on the right lower side. The abdomen was tender and rigid with peritonitis without any sign of hepatic dullness; the body temperature was slightly raised (37.11°C). Blood amylase (60 IU/L) and lipase (50 IU/L) activities were normal, which ruled out pancreatitis. The impression at the preoperative stage was suspicious of
appendicular perforation. Distended bowel was evident from an X-ray picture (Figure 1) with multiple air/fluid levels between the distended bowel loops, which was confirmed by USG. The case was planned for laparotomy. On opening the abdomen, ~500 mL of purulent fluid with some fecal leak was discernible, which was drained out totally. An antibiotic course was started 3 days before the operation at the emergency unit. Signs of infection in the inner viscera were seen, which was confirmed by the culture report, which indicated total leukocyte count of 12,000/mm³ (within normal range) with 80% neutrophilia. Probably, the leakage of fecal matter was fresh. The solitary CD was situated just above the ileocecal junction engorging the appendix, without any distal obstruction. During the operation, the right hemicolectomy for the primary anastomosis and ileostomy for diversion of the loop were done (Figure 2). The postoperative period was uneventful; biopsy of the incised material confirmed the inflammation from CD/diverticulitis.

3. Discussion

During embryonic development of the gut, a transient appendix develops from the tips of the cecum during Week 6. Rarely, the cecal wall nearing the site of the future development of a diverticulum remains thick and abnormal. However, histopathology of underlying cecal carcinoma remains different from that of CD. A true solitary CD contains all layers of bowel wall. This ailment is rare in children but common in adults; at times, fecolith impaction in children leads to cecal perforation. The management of pain in the right side of the abdomen without appendicitis is difficult, ranging from antibiotic treatment to aggressive resection, as done with the present case. A long history of abdominal pain without toxicity is a characteristic feature of CD and tenderness is marked with deep palpation, while vomiting is less frequent; these features differentiate CD from appendicitis. In a review of 881 CD cases, it was inferred that 3.6% of cases of colonic diverticulae were involved with the cecum; the average age of CD development was 43.6 years with a 3:2 male:female ratio. Solitary CD cases with inflammation, perforation and bleeding, similar to other diverticulae, are rare. As in the present case, solitary CDs in 85% of cases present with occasional nausea with tenderness and pain in the right iliac fossa and low-grade pyrexia, similar to appendicitis. In a prospective study of 934 cases with indeterminate right lower abdominal pain, USG had a sensitivity of 91.3% and specificity of 99.5% in differentiating right-sided diverticulitis from appendicitis. An antibiotic regimen could often correct the problem of inflammation, but aggressive resection for CD with perforation would be appropriate, especially for the emergency situation to address the leakage of fecal matter by perforation. Diverticulectomy or hemicolectomy could help. Moreover, in the absence of any carcinoma, resection or an inversion would be appropriate for extensive inflammation or CD.

In conclusion, this case was treated aggressively, as there was a little fecal leakage with extensive inflammation, and the patient had no postoperative complications. An inflamed solitary CD with perforation is rare, which is diagnosed differentially from appendicitis during laparotomy. However, to prevent misdiagnosis, both computed tomography and diagnostic laparoscopy should be done.

Conflicts of interest

None.
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References


