



Cocoon Peritonitis Secondary to Perforated Appendicitis

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ABSTRACT

A young man was admitted due to gastrointestinal obstruction and was diagnosed as having cocoon peritonitis secondary to perforated appendicitis. He suffered from small intestine partial obstruction because of multiple adhesion bands whose obstructive symptoms completely resolved after single balloon enteroscopy. So balloon enteroscopy could be offered as a therapeutic option for partial small intestine obstruction.

KEYWORDS:

GI obstruction, Balloon enteroscopy, Cocoon peritonitis.

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INTRODUCTION

Cocoon peritonitis is a rare condition that characterized by partially or totally encasement of the small bowel with fibrotic membrane and can extend to involve other organs like the large intestine, liver and stomach. Clinically, it presents with recurrent episodes of small bowel obstruction and can be classified as idiopathic or secondary. The secondary form has been reported in association with peritoneal dialysis, abdominal tuberculosis or as a side effect of some medications such as Beta-blockers. In this case report, we present a case of Cocoon peritonitis secondary to perforated appendicitis which managed by balloon enteroscopy.

CASE REPORT

The patient was a 24-year-old man with the complaint of abdominal pain and anorexia since 2 weeks earlier. The pain originated from epigastric and hypogastric regions and then radiated mainly to the right lower quadrant. 2 days after the onset of the pain, he developed fever, nausea, and vomiting 30 min after eating meal and non-bloody diarrhea. The patient was admitted to a regional hospital where he received intravenous antibiotics including ceftriaxone, metronidazole, and dexamethasone. At that center, ultrasonographic evaluation showed some fluid collection in the right lower quadrant and fullness of abdomen with gas without any clear evidence in favor of appendicitis. After few days, the patient was referred to our center because of unresponsiveness and deteriorating of the general condition.

Upon arrival, the patient complained of inability to defecate while

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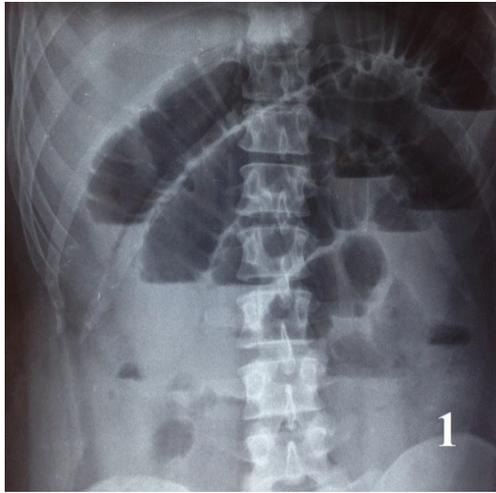


Fig.1: The dilated intestinal loops were with multiple air fluid levels on plain abdominal radiography.

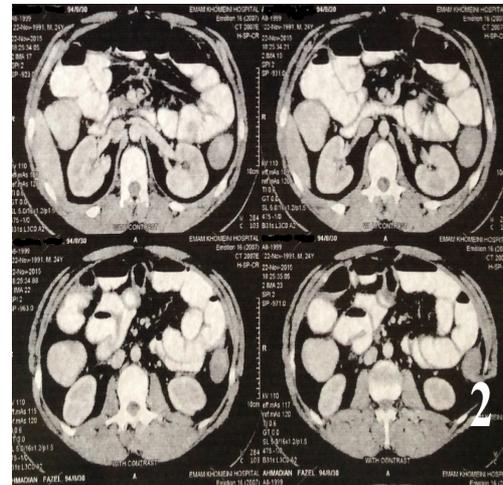


Fig.2: Abdominal computed tomography showing appendix diameter more than 10 mm and segmental dilatation of the small bowel.



Fig.3: Dilated segments of the small intestine interspersed between strictures.



Fig.4: Dilated segments of the small intestine.

having gas passage and vomiting immediately after eating. His laboratory results included Hb 12 g/dL, MCV 86 fL, Plt $286 \times 10^3/\mu\text{L}$, Cr 1.1 mg/dL and ESR 78 mm. He was admitted with the diagnosis of intestinal partial obstruction and another ultrasonography showed left side pleural effusion and normal abdominal findings. On plain abdominal radiography, the intestinal loops were dilated with multiple air fluid levels (figure 1). An abdominal computed tomography was requested, which revealed that the diameter of the appendix was more than 10 mm with some reactive lymph nodes, a hypodense tubular lesion 27×10 mm adjacent to the appendix and segmental

dilatation of the small bowel (figure 2). Antibiotic therapy was continued and upper and lower endoscopy was performed. His upper endoscopy was normal while on colonoscopy, there was a stricture due to external pressure effect with normal mucosa 30 cm from anal verge. Rest of the exam up to the terminal ileum was normal.

As the next step, his small bowel was evaluated by single balloon enteroscopy (Olympus Co., SIF-Q180 & ST-SB). During the single balloon enteroscopy there were multiple strictures due to external pressure with normal mucosa and dilated segments interspersed between the strictures (figures 3 & 4). The balloon

was passed few times through the strictures and the symptoms of the patient significantly subsided thereafter with the improvement of his general condition. The vomiting stopped, and he tolerated oral diet and ESR declined to 18 mm.

After performing single balloon enteroscopy, we requested a diagnostic laparoscopy with the suggestion of cocoon peritonitis. On laparoscopic evaluation, the surgeon reported a perforated appendix with collection around it and multiple adhesion bands that enveloped different parts of the small intestine. The appendix was excised and some of the remained strictures were relieved. Antibiotic therapy continued and 5 days later the patient was discharged from the hospital with the diagnosis of cocoon peritonitis secondary to perforated appendicitis.

DISCUSSION

Cocoon peritonitis is a rare condition of unknown etiology, which is characterized by a thick grayish-white fibrotic membrane, partially or totally encasing the small bowel and can extend to involve other organs such as the large intestine, liver, and stomach. Clinically, it presents with recurrent episodes of acute, subacute, or chronic small bowel obstruction, weight loss, nausea, and anorexia.¹ Cocoon peritonitis can be classified as idiopathic or secondary. The secondary form has been reported in association with continuous ambulatory peritoneal dialysis, abdominal tuberculosis, or as a side effect of some medications such as beta-blockers. The idiopathic form has been classically described in young adolescent females from the tropical and subtropical countries. The etiology of this entity has remained relatively unknown.²

Management of cocoon peritonitis usually require surgical treatment to dissect and excise the covering membrane and dense inter-bowel adhesions be freed. Resection of the bowel is indicated only if it is non-viable. No surgical treatment is required for asymptomatic patients.³

To the best of our knowledge it is the first case of cocoon peritonitis secondary to perforated appendicitis. In the present patient, most of the symptoms were relieved after balloon enteroscopy and the general condition improved dramatically. So balloon enteroscopy could be offered as

a therapeutic option for the management of small bowel obstruction secondary to encapsulating cocoon peritonitis.

CONFLICT OF INTEREST

The authors declare no conflict of interest related to this work.

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