



SHORT REPORT

Non-toxic megacolon due to transverse and sigmoid colon volvulus in a patient with ulcerative colitis

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Abstract

Intestinal volvulus in patients with inflammatory bowel disease is rare.

A 83-year-old woman diagnosed with ulcerative colitis five years ago was referred to our hospital due to abdominal distension. The patient had been diagnosed with pancolitis and dolichocolon and was started on mesalazine 1.5 g/day treatment resulting in long-term remission. Physical examination showed abdominal distention with no rebound; however on auscultation abdominal sounds were absent. Patient had no signs of toxicity. Temperature was 38.2 °C, heart rate was 82 bpm and respirations were 16/min. Laboratory investigation showed elevated white blood cell count (20,000/mm³) with hemoglobin at 13.2 g/dl and C-reactive protein at 310 mg/dl. Radiology was suggestive of megacolon and volvulus.

Patient underwent endoscopy, which revealed normal rectal mucosa; there were however present areas of bowel gangrene. Urgent laparotomy was performed which revealed double transverse and sigmoid colon volvulus. A left hemicolectomy and transectomy were performed.

A case of a patient with ulcerative colitis is being presented here, exhibiting a non-toxic megacolon, resulting from a double transverse and sigmoid volvulus probably stemming from congenital dolichocolon. This case is stressing the importance of prompt differential diagnosis in such cases of megacolon as any symptom misinterpretation may result in unfavorable outcomes.

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1. Introduction

Colonic volvulus accounts for 1–7% of cases of large bowel obstruction in the United States and Western Europe and is

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commoner in tropical and subtropical areas. The sigmoid colon is involved in 65–80% of the cases reported, followed by right colon in 15–30% of cases while transverse colon and splenic flexure volvulus are rare.¹

Intestinal volvulus in patients with inflammatory bowel disease is extremely rare. There are six reports^{2–7} of volvulus occurring in Crohn's disease patients; three of which were detected in the sigmoid.^{2–4} Only one case of volvulus of the cecum has been reported in ulcerative colitis.⁸

Intestinal obstruction in conjunction with toxic megacolon⁹ in patients with inflammatory bowel disease constitutes emergency situations carrying a potential unfavorable outcome when prompt treatment is delayed.

A rare case is herein reported of a patient with long-standing ulcerative colitis and 'non-toxic' megacolon who was diagnosed with a double transverse and sigmoid colon volvulus.

2. Case report

A 83-year-old woman diagnosed with ulcerative colitis was referred to the Department of Emergencies of the hospital exhibiting abdominal discomfort and distension. The patient had her last normal defecation 24 h prior and since then complained of inability to pass any stool or gas. Patient had been diagnosed with pancolitis and dolichocolon (long colon) five years before during hospitalization for bloody diarrhea and subsequent investigation. At that time, endoscopy and bowel biopsies were compatible with mild ulcerative colitis while any other chronic or acute bowel disease was ruled out after thorough investigation. Patient had been administered mesalazine monotherapy and achieved long-term remission with 1.5 g/day mesalazine maintenance treatment for these past five years. In addition, for several weeks preceding this

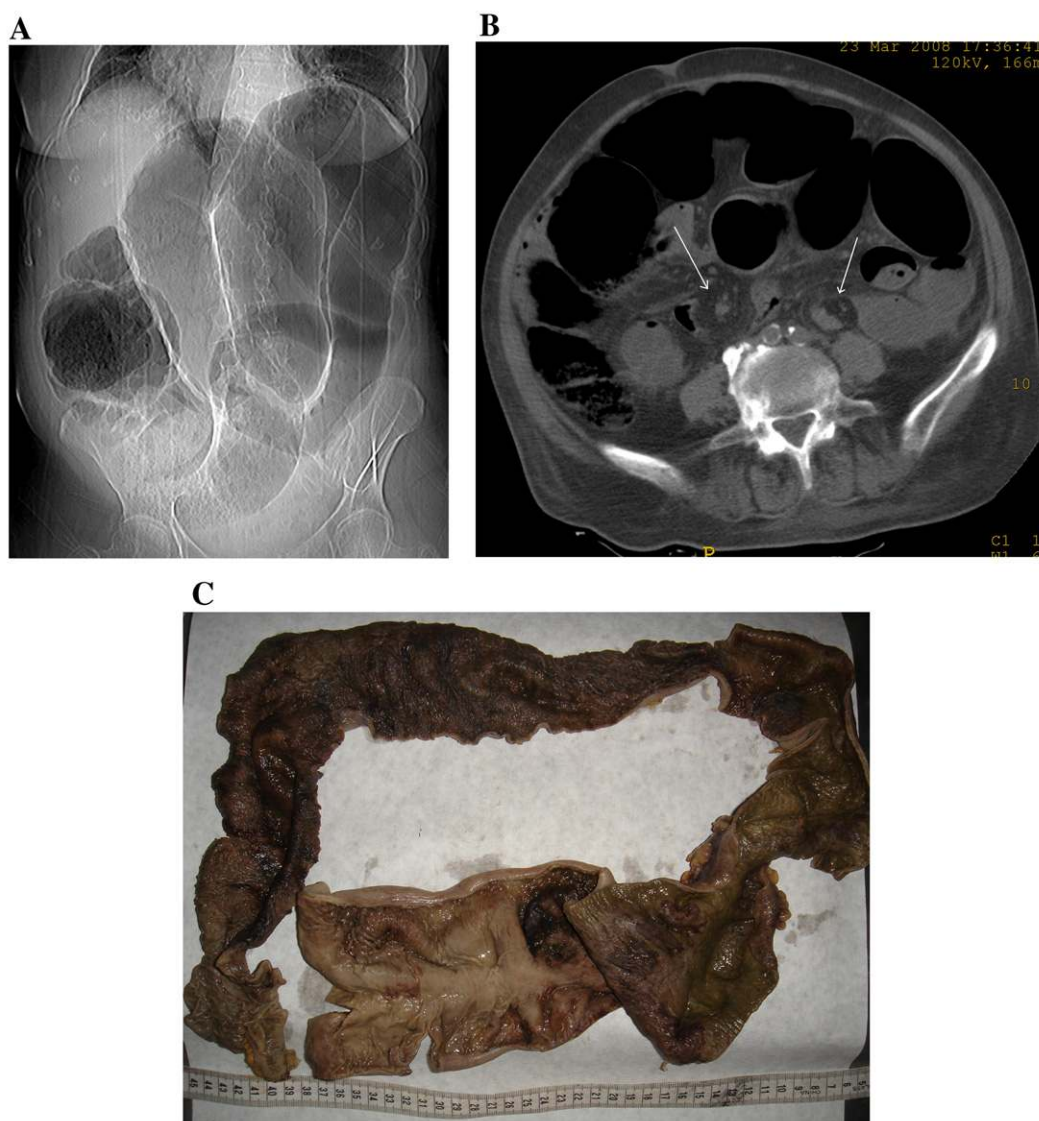


Figure 1 A and B. Computed tomography suggestive of double sigmoid and transverse colon volvulus in a patient with ulcerative colitis (arrows in B are showing the two wheels of bowel rotation in two areas, we decided to call this the 'motorcycle sign'). C. Large bowel removed on emergency in a patient with ulcerative colitis and double sigmoid and transverse colon volvulus.

admission, patient had had neither bowel abnormalities nor other type of complaints.

Physical examination showed remarkable abdominal distention and mild diffuse discomfort with no rebound. On auscultation abdominal sounds were absent. Patient exhibited no symptoms of toxicity such as dehydration, mental changes or hypotension. In detail, vital signs were as follows: blood pressure at 130/86 mmHg, temperature at 38.2 °C; heart rate was 82 bpm and respirations at 16/m. Digital examination of the rectum was negative for the presence of impacted stools or traces of blood. Arterial blood gases were normal. Laboratory investigation revealed elevated white blood cell count (20,000/mm³) with hemoglobin at 13.2 g/dl, C-reactive protein at 310 mg/dl, while biochemical profile was unremarkable with no electrolyte disturbance.

Radiology findings were compatible with megacolon (large bowel diameter up to 9.5 cm) with no signs of perforation; however, indications suggestive of sigmoid and transverse colon volvulus were present (Fig. 1A and B).

Patient underwent emergency endoscopy at the operating room which revealed normal rectal mucosa; however, areas of bowel edema and gangrene in the distal sigmoid were also discovered. Urgent laparotomy was performed, which confirmed dolichocolon and revealed double transverse and sigmoid colon volvulus with several ischemic lesions and gangrene. A left hemicolectomy and transectomy were performed.

Pathology of the resected bowel specimens showed ischemia and gangrene, located in the double bowel rotation areas (Fig. 1C) and confirmed endoscopic findings with absence of lesions suggestive of ulcerative colitis relapse.

3. Discussion

Double volvulus of the transverse and the sigmoid colon has been reported only twice^{10,11} but never in patients with inflammatory bowel disease. As per this case, the probability of volvulus should be considered in the differential diagnosis of any inflammatory bowel disease patient with signs of bowel obstruction or megacolon because of the danger of subsequent gangrene, perforation and peritonitis. While sigmoid volvulus is quite common, transverse colon volvulus is a rarely encountered disorder that is difficult to diagnose preoperatively.¹²

Volvulus is thought to be an idiopathic condition, probably with an anatomical basis and some cases are secondary to known conditions as follows: In general, high risk groups for volvulus include individuals with adhesions due to previous laparotomies, congenital malformations or absent ligamentous fixation of the colon, abnormal mesocolon or a common ileocolo-mesentery, complicated acquired megacolon including delayed presentation of Hirschprung's disease, and infectious conditions such as Chagas disease, especially in subtropical and tropical areas. Dolichocolon is a disorder of the colon, commonly encountered in the elderly, which is characterized by elongation (and also sometimes by dilation) of the colon, especially the sigmoid.

High-risk groups among inflammatory bowel disease patients seem to include those with reactivation of the ileal Crohn's disease contributing to the development of volvulus by causing fixation, torsion and dilatation of the

distal bowel. Patients diagnosed with dolichocolon as is concluded from the present case should also be included in the high risk group. Finally it is not clear whether sigmoid volvulus precedes chronically transverse colon volvulus this however seems to be the most probable hypothesis.¹¹

Preoperative colonoscopic derotation is beneficial in acute sigmoid volvulus. Correct identification of transverse colon volvulus is necessary in order to reduce high mortality rates. While a conservative treatment of sigmoid volvulus is recommended, it is inadequate in the case of transverse colon volvulus.¹³

In the absence of clinical, laboratory or radiological signs of bowel necrosis or perforation, colonoscopic volvulus derotation is recommended in all cases, followed by semi-elective single stage colonic resection. Emergency endoscopic decompression of the sigmoid volvulus is safe and effective as an initial treatment but has a high early recurrence rate.

The important issue of whether the additional information and potential value of endoscopy as compared to the risk for the patient is worth pursuing remains a topic still pending in the literature. It was decided to perform an endoscopy, as radiology was 'suggestive' but not firmly confirming this double sigmoid and transverse colon volvulus and it was readily understood that this was an extremely rare condition with a high probability of misdiagnosing. In addition, it was hoped that by restoring endoscopically the sigmoid volvulus, the patient could be operated on, in an improved general condition. Finally, symptoms had started in fewer than 24 h prior to the patient being referred to the hospital and any such volvulus could be potentially reversible; Similarly, the extent and duration of surgery could be curtailed resulting in fewer post-surgical complications.

However, surgery should not be delayed in the following instances: for patients in whom tube decompression is unsuccessful and complete obstruction persists more than 24 h, in those with gangrenous bowel or those in whom ischemia of the bowel cannot be ruled out and in patients with volvulus proximal to the sigmoid. When the bowel is not viable resection is mandatory while in patients with viable colon there are several options.¹

The megacolon present in this patient was deemed 'non-toxic' because patient did not meet the official clinical and laboratory criteria previously set for the nomination of a megacolon as 'toxic'.⁹ It is important to stress here that patient long-term bowel remission history, radiology and endoscopy criteria were the main determinants of the decision for emergency surgery. However, these parameters are not included in the initial panel of criteria for 'toxic megacolon', which could obviously mislead as to the severity of this case. We believe that together with patient history, radiology and endoscopy—whenever feasible and with every precaution taken—are of great importance in the differential diagnosis of megacolon cases and should be incorporated in the panel of clinical and laboratory determinants as it can early warn of severe or even life-threatening complications.

To conclude, these are the particulars of a case of a patient with ulcerative colitis presenting with 'non-toxic' megacolon resulting from a double transverse and sigmoid volvulus probably related to congenital dolichocolon. Despite the absence of several signs of toxicity, emergency endoscopy along with patient history was strongly suggestive of a life-threatening condition and patient was immediately operated.

The importance of prompt differential diagnosis in cases of megacolon in inflammatory bowel disease needs to be stressed here, as any symptom misinterpretation or any delay in surgery may result in unfavorable outcomes.

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