Descending Colon Volvulus Treated with Colopexy: An Alternative Option for a High-Risk Patient

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ABSTRACT

Volvulus refers to the twisting of the bowel around its own mesentery that supplies it, causing bowel obstruction. The volvulus usually involves sigmoid colon and caecum. Only 1.3-2.4% of cases involve the descending colon. We hereby report a case of a 71-year-old male presenting with complaints of obstipation, vomiting, abdominal distension, and generalised abdominal pain for six days. CT scan showed a distended descending colon twisted around its mesentery, creating a closed-loop obstruction. He was treated with laparotomy, derotation, and colopexy. Postoperatively, he remained stable. No immediate postoperative complications were noted. The patient was discharged from the hospital on the fifth postoperative day. An appropriate treatment option for colonic volvulus is derotation followed by resection of the colon. Alternatively, a less time-consuming approach, such as colopexy, might be a suitable treatment option for high-risk patients who cannot undergo prolonged anaesthesia.

Key Words: *Colonic volvulus, Descending colon volvulus, Colopexy*.

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INTRODUCTION

Volvulus is torsion of the bowel around its mesentery that supplies it, causing bowel obstruction, resulting in bowel ischaemia. Colonic volvulus accounts for about 15-20% of all large bowel obstructions.[1] In one study, approximately 2% of all cases of bowel obstructions requiring hospitalisation were due to colonic volvulus.[2] The location of colonic involvement varies, with the sigmoid colon and caecum being the most frequently affected, and the transverse colon and splenic flexure being the least affected.[3]

Volvulus of the descending colon is exceedingly rare, given the positional stability and retroperitoneal location of the organ, its lack of a mesocolon, and being enclosed by peritoneum on three sides. However, during embryogenesis, the primitive dorsal mesocolon may not merge with the parietal peritoneum, leaving a mobile descending mesocolon. This causes the descending colon to move freely, causing variation in location and increasing the risk of torsion.[4,5]

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CASE REPORT

A 71-year-old old male, with a past thoracic surgical history of lobectomy (no records available, presumably due to tuberculosis, according to the patient's recollection), presented to the emergency department with complaints of obstipation, vomiting, abdominal distension, and generalised abdominal pain for six days. He had no past abdominal surgical history.

On examination, the abdomen was distended, tense, and tender. A digital rectal examination showed a collapsed rectum with a few hard stool pellets. The gloved finger was stained with stool, and no blood was noticed. X-ray showed a dilated large bowel. He was admitted and resuscitated. CT scan of the abdomen (Figure 1) showed twisting of the mid part of the descending colon and its mesocolon with marked distension of the splenic flexure resulting in elevation of the left haemidiaphragm.

Findings were suggestive of descending colon volvulus. He underwent laparotomy, derotation of the large bowel, division of the band, and colopexy. Peroperatively, there was a grossly distended large bowel, mainly transverse colon and descending colon (Figure 2). The colon was twisted around a natural band with mesentery at the splenic flexure.

Sigmoid colon and rectum were normal. It was a closed-loop obstruction. The large bowel was healthy and viable. No dusky or necrosed areas were found. Two serosal tears were identified at the descending colon. Primary repair was done. The patient developed arrhythmia peroperatively; hence, a time-sensitive procedure was opted.

Postoperatively, the patient's recovery remained unremarkable. No postoperative complication was seen. His drain had minimal output and was removed. He was discharged on the fifth postoperative day. The patient remained well after one year of follow-up, and no recurrence was identified.

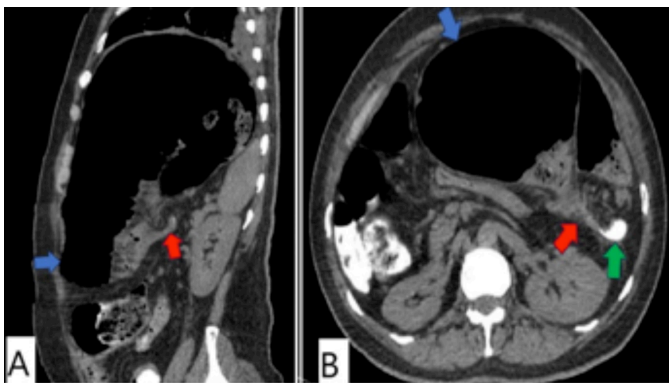

Figure 1: (A) Markedly dilated splenic flexure of the colon (blue arrow) with abrupt point of transition in the descending colon (red arrow). (B) Dilated large bowel segment (blue arrow) with a collapsed bowel (red arrow), and contrast in the collapsed segment (green arrow).

Figure 2: Grossly distended colon around a natural band.

DISCUSSION

Prompt diagnosis of colonic volvulus is critical; however, clinical signs alone are neither specific nor sensitive. Diagnosis is established by radiological imaging modalities. Contrast-enhanced CT is the diagnostic test of choice.[6-8] The whirl sign on CT denotes a tightly twisted bowel, mesentery, and vessels, with the tightness of the bowel representing the degree of rotation. The CT findings of this patient were a twist in the mid part of the descending colon. This torsion, coupled with the distension of splenic flexure, resulted in the elevation of the left hemidiaphragm. Marshak *et al*. also reported a similar finding of left hemidiaphragm elevation owing to the dilated descending colon loop.[9]

The management of colonic volvulus depends on the site of involvement as well as the severity and condition of the patient. The non-surgical method includes colonoscopic detorsion. Though useful as an initial management for uncomplicated volvulus, it is not suitable as a definitive treatment due to its high recurrence rates, reaching about 40-70%. Instead, it is considered a temporary measure preceding definitive surgical treatment.[3] Concerning surgical management, both resective and non-resective procedures can be used. The former has been regarded as the standard treatment in acute settings and preferred over the latter, attributable to its unlikeliness of recurrence. Colopexy and colostomy are the non-resective alternatives.[7] They are, however, less frequently utilised as they entail a high recurrence risk, reaching about 20-30% in the case of colopexy. Although resection is the conventional approach, its complications, such as anastomotic leak, paralytic ileus, and stenosis, add to morbidity and mortality.[10]

In the present patient, the emergent presentation required laparotomy. Detorsion coupled with colopexy was preferred over endoscopic detorsion as the deterioration in our patient's general health did not allow for conservative treatment. Our patient had a history of previous thoracic surgery and had a resected, smaller left lung. Hence, a short duration of surgery was advisable. In an already morbid patient who had a viable loop intraoperatively, resection did not seem justifiable. Thus, colopexy appeared to be the safer, short-term approach in this patient's case. The patient recovered uneventfully. On follow-up, no recurrence of the volvulus has been reported as of now.

Colonic volvulus is a rare entity. Diagnosis is based on clinical history, examination, and CT scan findings. The approach to managing colonic volvulus is contingent upon factors such as the location of the volvulus and the patient's overall health. Treatment options encompass both surgical and non-surgical interventions. Non-surgical methods involve employing colonoscopic detorsion, but due to high recurrence rates, it is usually followed by colonic resection or colopexy. A less invasive approach, i.e. colopexy or percutaneous endoscopic colostomy, can also be performed, particularly in high-risk patients.

PATIENT'S CONSENT:

Patient's consent was taken to publish this case report.

COMPETING INTEREST:

The authors declared no conflict of interest.

AUTHORS' CONTRIBUTION:

MHH: Reviewing and editing, data curation, and writing of the original draft.
EI: Data curation, writing of introduction, discussion, and manuscript revision.
MTUHS: Supervision in manuscript analysis and interpretation, and critical revision.
AS: Data provider, radiological analyser, and revision of the draft.
All authors approved the final version of the manuscript to be published.

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