



Transverse Colon Volvulus with Bowel Obstruction Management: A Case Report

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Abstract

Background: Very few cases of transverse colon volvulus have been reported in the literature. The condition is considered an emergency and needs urgent recognition and management before the affected patient develops peritonitis or bowel infarction. **Case presentation:** We report a case of a 70-year-old man with quadriplegia who experienced abdominal pain and constipation for 2 days. Abdominal radiography showed distended colon, and computed tomography (CT) revealed closed-loop obstruction with signs of bowel ischemia. **Conclusion:** Surgeons may not encounter such a case of transverse colon volvulus throughout their entire surgical career and early recognition is the cornerstone to a successful result.

Keywords: *Transverse colon, Volvulus, Ischemia.*

Introduction

Transverse colon volvulus is rare but usually has serious consequences if not treated as an emergency and may lead to bowel ischemia, peritonitis, and even death. Regarding the types of volvuli, the sigmoid colon is the most common site, accounting for up to 80% of cases, followed by the caecal and transverse colon 40% and 4%, respectively) [1]. Here, we report a case of a man with transverse colon volvulus who was treated at Prince Sultan Military Medical City in Riyadh.

Case presentation

The patient was a 70-year-old man with rheumatoid arthritis and osteoporosis. Furthermore, he had a more than 30-year history of quadriplegia due to a motor vehicle accident.

He presented to the emergency room (ER) with a history of progressive lower abdominal pain, nausea, and multiple episodes of vomiting in the previous 3 days. Furthermore, he had not passed stool for 2 days.

On examination, his vital signs were as follows: temperature, 37.2 °C; pulse 100 per minute; respiratory rate 20 per minute; and blood pressure, 99/75 mmHg. Local examination of the abdomen showed mild distention with central tenderness but no signs of peritonitis, and the abdomen was tympanic to percussion. Furthermore, intact hernial orifices were noted, and the findings of a digital rectal examination were unremarkable.

Abdominal x-ray showed diffused colonic dilatation with no specific coffee bean sign or inverted U sign (Figure 1).



Figure 1: Abdominal x-ray

Blood workup showed a white blood cell (WBC) count of 19.8×10^9 , C-reactive protein level of 25mg/l, and serum electrolyte levels within normal ranges.

Abdominal CT showed twisted inferior mesenteric vessels with two transitional zones, one at the splenic flexure and the other at the proximal transverse colon with decreased wall enhancement suggestive of bowel ischemia (Figure 2/Figure 3).

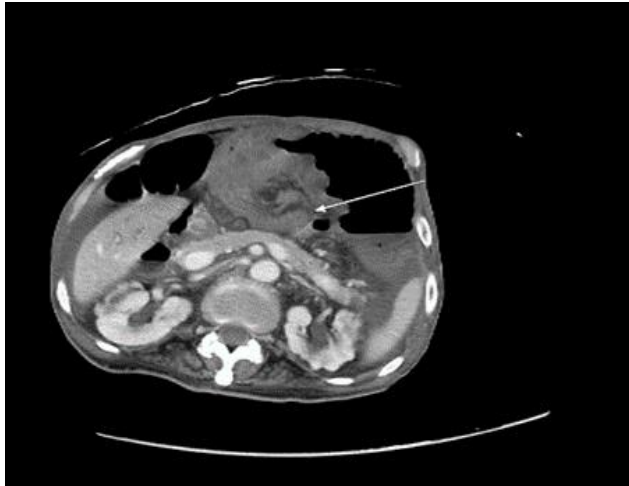


Figure 2: cross-sectional view with 'twirl' sign

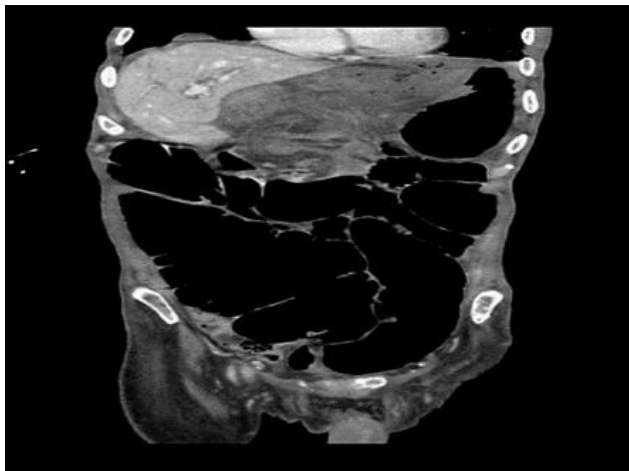


Figure 3: Coronal view CT

After resuscitating the patient with intravenous fluids, analgesics, and antibiotics, emergency laparotomy was performed. The intraoperative findings were transverse colon volvulus with distal ascending and transverse colon ischemia (Figure 4/ Figure 5). Hence, we proceeded with extended right hemicolectomy and a diverting ileostomy plus a distal mucous fistula. The patient received a total of two units of packed red blood cells (pRBCs) and four units of FFP during the procedure.

On day 1 postoperatively, the patient was extubated in the intensive care unit (ICU) and was doing fine, with stable vitals; the stoma started functioning on day 2 post-surgery.

He was discharged home on the sixth day.

The outpatient follow-up was uneventful, and histopathology results showed right and transverse colon transmural ischemic changes. In addition, the terminal ileum showed mild ischemic changes with viable margins.



Figure 4: Intraoperative gross image of the ischemic colon

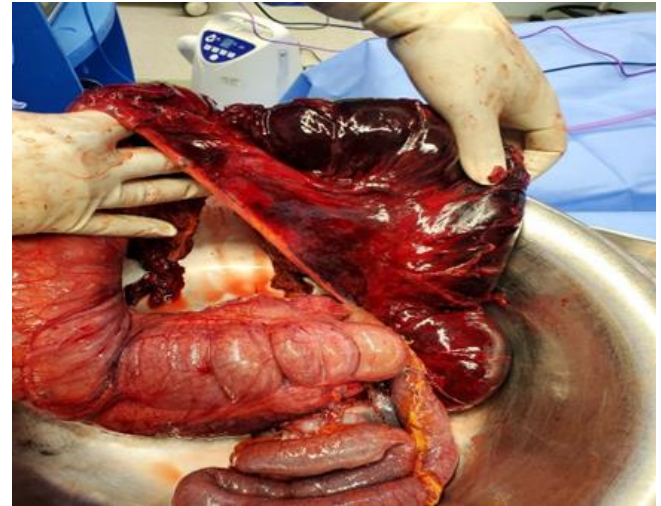


Figure 5: Gross image of the specimen after resection

Discussion

Volvulus is a Latin word used to describe the colon twisting around an axis and usually occurs due to redundancy of the colon [2]. Among the various types of volvuli, the sigmoid is the most common site, accounting for up to 80% of the cases, followed by the caecum (40%), and finally the transverse colon (up to 4% only) [1]. This phenomenon was first described in 1932, and it contributes less than 5% of all intestinal obstructions [3]. Transverse colon volvulus is rare but usually has serious consequences if not treated as an emergency, leading to bowel ischemia, peritonitis, and even death [1].

The transverse colon is normally fixed in position by both splenic and hepatic flexures. Additionally, it has a short mesentery, making it less prone to develop volvulus, but some congenital, mechanical, and physiological factors are thought to contribute to its development [4]. Malrotation of the midgut and abnormal mesenteric attachment is thought to be the most important congenital factors, while chronic constipation and pregnancy causing a redundant colon are physiological factors [4-2]. Examples of mechanical factors include previous surgery and distal obstruction due to a tumor or any other cause [4].

The clinical presentation of this condition is vague, but sudden abdominal pain with abdominal distention is the most common presentation, while chronic and gradual progressive pain is a less common presentation [5]. Our patient presented with sudden abdominal pain that progressed to more severe pain with distention.

There are no specific pathognomonic radiological features of transverse colon volvulus on abdominal radiographs, but this condition may be occasionally associated with Chilaiditi syndrome or multiple air-fluid levels, which are non-specific radiological features of transverse colon volvulus [6]. Due to the previously mentioned factors, pre-operative diagnosis is hardly achieved; therefore, a CT scan is highly recommended for early diagnosis thus proper management [1].

After making an intraoperative diagnosis and depending on the presence of contamination or gangrenous bowel, a decision on proceeding with right hemicolectomy or transverse colectomy with either primary anastomosis or exteriorizing both ends should be made [7]. In this case, we made the decision to perform an extended right hemicolectomy with a proximal diverting ileostomy and a distal mucus fistula because no primary anastomosis can be performed with this ischemic bowel.

Conclusion

Transverse colon volvulus is a rare entity but, early diagnosis and early intervention for volvulus is crucial to prevent irreversible damage.

Funding

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Conflict of interest

None

Ethical Approval

Not required as the patient's name and personal data not shown in the study.

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