



# Transverse Colon Volvulus: a Rare Cause of Intestinal Obstruction

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## Case Presentation

An urgent surgical referral was made for a middle-aged gentleman with a 1-day history of abdominal pain and significant past history of endovascular repair for Stanford A aortic dissection, cerebrovascular accidents and atrial fibrillation on warfarin. Examination revealed a distended abdomen with epigastric tenderness but no peritonism. Laboratory investigations were as follows: full blood count demonstrating a haemoglobin of 7.7 g/dL and elevated white cell count of  $21.1 \times 10^9/L$ , international normalized ratio (INR) of 2.9, blood gas analysis showing base excess of  $-8$  mmol/L and lactate of 5.7 mmol/L. A contrasted computed tomography (CT) scan revealed a loop of dilated large bowel in a U-shaped configuration (Fig. 1). An axial cut tracing the abnormal path of the middle colic artery suggests transverse colon volvulus (TCV). Grossly dilated transverse

colon with an associated mesenteric hematoma was seen intraoperatively (Fig. 3). The patient underwent transverse colectomy and temporary closure in view of intraoperative instability. Relook laparotomy, right hemicolectomy and ileo-colic anastomosis was performed 36 h later. Postoperative recovery was uneventful and the patient was discharged well 8 days after surgery.

## Discussion

TCV accounts for 3% of colonic volvulus and 0.02% of intestinal obstruction, but carries a mortality rate of 18–30%.<sup>1,2</sup> Non-specific pain may precede obstructive symptoms in the acute setting, making diagnosis challenging.<sup>1</sup> Chronic constipation, redundant colon and narrow mesenteric attachment are thought to be predisposing factors.<sup>1</sup> Lacking pathognomonic features, dilated large bowel in a U-shape configuration (Fig. 2), associated Chilaiditi syndrome and air-fluid levels in the transverse colon and cecum are indirect radiological signs of TCV.<sup>1,3</sup> Colectomy is the treatment of choice as gangrene often accompanies TCV and recurrence is common after conservative management, endoscopic decompression or colopexy.<sup>1</sup> The choice of transverse or extended right colectomy and requirement of stoma depend on intraoperative stability, degree of contamination and ability to achieve tension-free anastomosis and should be individualized to the patient (Fig. 3).

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Fig. 1 Dilated large bowel in a U-shaped configuration



Fig. 3 Dilated transverse colon secondary to volvulus

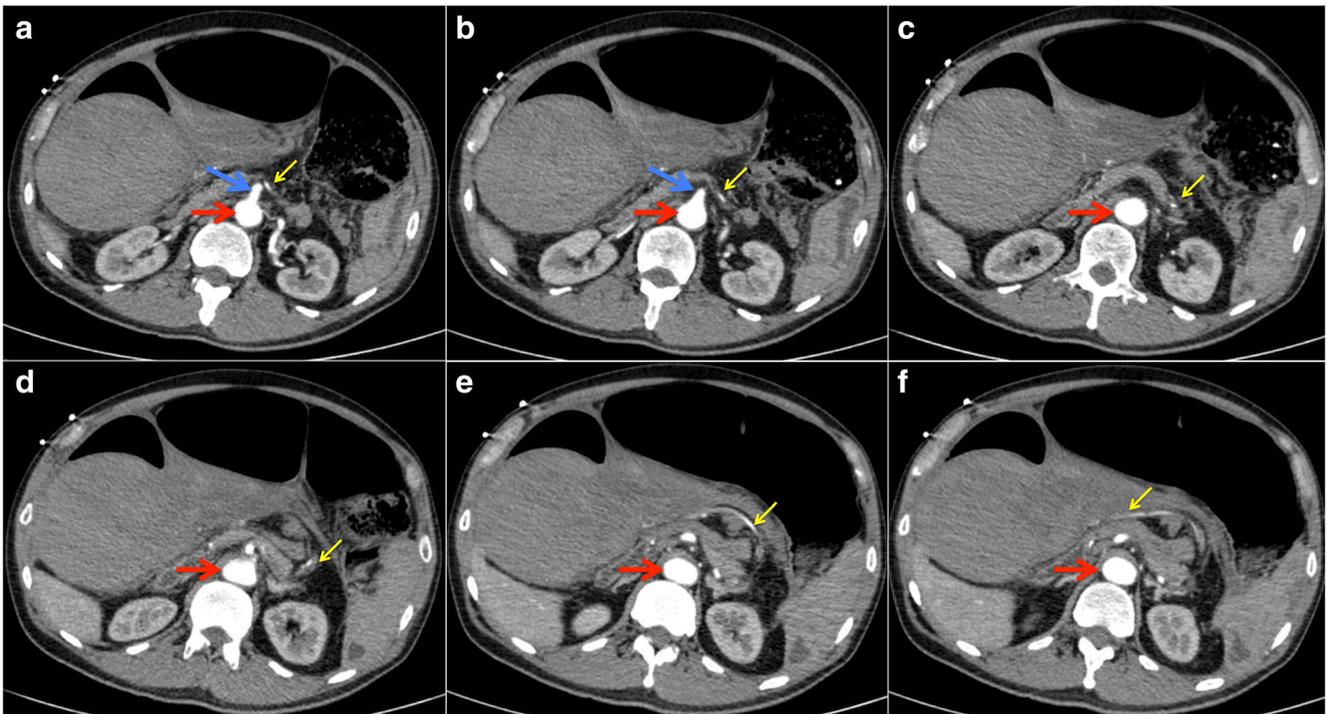


Fig. 2 CT images showing sequential axial cuts in a caudo-cephalad direction depicting the aorta (red arrow), superior mesenteric artery (blue arrow) and middle colic artery (yellow arrow)

## Compliance with Ethical Standards

**Conflict of Interest** The authors declare that they have no conflict of interest.

## References

1. Gingold D, Murrell Z. Management of Colonic Volvulus. *Clin Colon Rectal Surg* 2012;25(4):236–44.
2. Halabi WJ, Jafari MD, Kang CY, Celeste Y, Nguyen VQ, Carmichael JC, Mills S, Pigazzi A, Stamos MJ. Colonic Volvulus in the United

States: Trends, Outcomes, and Predictors of Mortality. *Ann Surg* 2014;259(2):293–301.

3. Matsushima K, Suzuki Y. Transverse colon volvulus and associated Chilaiditi's syndrome. *Am J Surg* 2006;192(2):203–4.

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