

# Concurrent large bowel obstruction secondary to idiopathic mesenteroaxial gastric volvulus

Ananya Anand , Jeff Choi , Joshua D Jaramillo, James Lau

Surgery, Stanford Medicine,  
Stanford, California, USA

**Correspondence to**  
Dr Ananya Anand; [ananya\\_anand@stanford.edu](mailto:ananya_anand@stanford.edu)

## CASE PRESENTATION

A patient in her 60s presented to the emergency room with sudden-onset severe epigastric pain associated with nausea and emesis. The patient's medical history was unremarkable; surgical history was notable only for a diagnostic laparoscopy without any additional intervention. Vital signs were within normal limits and physical examination was notable for abdominal distension and generalized tenderness without peritoneal signs. Laboratory values were notable for an elevated lactate of 2.9 mmol/L.

On CT of the abdomen and pelvis, the patient was found to have a mesenteroaxial gastric volvulus with the markedly distended stomach causing mass effect on a very redundant colon ([figure 1](#)). There was concern for large bowel obstruction with a transition point at the splenic flexure. There was evidence of mesenteric edema, but no evidence of ischemia, pneumatosis, or pneumoperitoneum.

## WHAT WOULD YOU DO?

- Nasogastric tube (NGT) decompression and conservative management
- Endoscopic gastric derotation and gastropexy
- Laparoscopic gastric derotation
- Exploratory laparotomy with derotation
- Exploratory laparotomy with derotation, consider possible partial gastrectomy

## WHAT WE DID AND WHY

### Answer: E

Given the acute gastric volvulus diagnosis, NGT was immediately placed with removal of copious gastric contents. The patient was brought to the operating room for an emergent exploratory laparotomy. On entry, we saw an extremely dilated stomach volvulized on the transgastric axis and causing a mechanical obstruction of the ascending and mid-transverse colon. The transverse colon was extremely redundant.

The stomach was detorsed; it was viable without ischemic regions, but the fundus was markedly redundant. There was no diaphragmatic defect or a paraesophageal hernia. We performed a partial gastrectomy to prevent recurrence of mesenteroaxial volvulus, and given the extent of right colonic dilation and redundancy, an extended right colectomy as well. Pathology of the resected stomach showed focal mucosal erosion and submucosal vascular congestion, and pathology of the resected colon did not show obstructive lesions. The patient had an unremarkable postoperative course and was discharged on postoperative day 3. By day of



**Figure 1** Mesenteroaxial gastric volvulus.

discharge, the patient was tolerating a regular diet and having bowel movements.

Acute gastric volvulus requires immediate intervention to prevent grave morbidities including strangulation, perforation, and necrosis. Reported mortality ranges from 30% to 50%.<sup>1</sup> Patients classically present with Borchardt's triad of epigastric pain, vomiting, and difficulty passing an NGT.<sup>2</sup> NGT should be placed immediately to reduce gastric wall tension and potential ischemia. Gastric volvulus is classified into three categories based on the stomach's axis of rotation: organoaxial (longitudinal axis), mesenteroaxial (transgastric axis), and combined.<sup>3</sup>

Acute idiopathic mesenteroaxial gastric volvulus in an adult is a rare presentation, with only a few cases reported in the literature.<sup>4-7</sup> To the best of our knowledge, this is the first reported case of idiopathic mesenteroaxial gastric volvulus causing a concurrent large bowel obstruction. Intraoperative decision must address the primary cause (eg, diaphragmatic defect, paraesophageal hernia), the volvulus itself, and recurrence prevention. Recurrence prevention techniques include anterior gastropexy (securing greater curvature of the stomach to the abdominal wall), gastrostomy tube placement (to prevent future torsion), or a partial gastrectomy. Intraoperatively, we first ruled out the common etiologies of gastric volvulus, then performed a partial gastrectomy as our patient's redundant fundus rendered unacceptably high recurrent rates.

Our case depicts a rare presentation of an idiopathic mesenteroaxial gastric volvulus with concurrent large bowel obstruction, reiterating the

© Author(s) (or their employer(s)) 2020. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

**To cite:** Anand A, Choi J, Jaramillo JD, et al. *Trauma Surg Acute Care Open* 2020;**5**:e000582.

importance of intraoperative decisions in addressing the acute pathology and its etiology and intervening pre-emptively.

**Contributors** AA and JC contributed to the conception and writing of the work. JC, JDJ, and JL contributed to the final revisions of the work.

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None declared.

**Patient consent for publication** Not required.

**Provenance and peer review** Not commissioned; internally peer reviewed.

**Open access** This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

#### ORCID iDs

Ananya Anand <http://orcid.org/0000-0001-9927-2417>

Jeff Choi <http://orcid.org/0000-0003-1639-8781>

#### REFERENCES

- 1 Chau B, Dufel S. Gastric volvulus. *Emerg Med J* 2007;24:446–7.
- 2 Gourgiotis S, Vougas V, Germanos S, Baratsis S. Acute gastric volvulus: diagnosis and management over 10 years. *Dig Surg* 2006;23:169–72.
- 3 Singleton AC. Chronic gastric volvulus. *Radiology* 1940;34:53–61.
- 4 Ahmed A. Acute mesenteroaxial gastric volvulus on computed tomography. *S Afr J Rad* 2013;17:21–3.
- 5 Urasaki Y, Nozawa S, Matsui J, Hashimoto K, Tanaka T, Fukuchi S, Otani H, et al. A case of acute gastric mesenteroaxial volvulus corrected by endoscopy. *Prog Dig Endosc* 2013;82:114–5.
- 6 Woon CY-L, Chung AY-F, Low AS-C, Wong W-K. Delayed diagnosis of intermittent mesenteroaxial volvulus of the stomach by computed tomography: a case report. *J Med Case Rep* 2008;2:343.
- 7 Jabbour G, Afifi I, Ellabib M, El-Menyar A, Al-Thani H. Spontaneous acute Mesenteroaxial gastric volvulus diagnosed by computed tomography scan in a young man. *Am J Case Rep* 2016;17:283–8.