International Surgery Journal
Gupta N et al. Int Surg J. 2023 Jun;10(6):1116-1118
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20231751

Case Report

Gastric volvulus and wandering spleen: a rare case report

Nihir Gupta, Radhey Shyam Meena*

Department of General Surgery, Government Medical College, Kota, Rajasthan, India

Received: 18 April 2023
Accepted: 15 May 2023

***Correspondence:**
Dr. Radhey Shyam Meena,
E-mail: rs_meenaa@yahoo.com

ABSTRACT

Gastric volvulus (GV) is a rare disease. The exact incidence of GV is unknown and patients with chronic presentation may never be diagnosed. The peak age group of incidence is in the fifth decade. GV can be classified as organo-axial and mesentero-axial. Clinical presentation of gastric volvulus depends on the rapidity of onset and the degree of rotation. This is an interesting rare case report of a patient presenting with abdominal pain since 48 hours, associated with dyspnoea, nausea and vomiting. Nasogastric tube placement was unsuccessful. An abdominal computed tomography scan revealed gastric volvulus with pneumoperitoneum. Emergency surgery was indicated and a typical gastrectomy was performed. Acute GV usually presents with Borchardt's triad. With the advent of CT and laparoscopic surgery, the gold standards for diagnosing and treating this disease are constantly evolving. Surgical treatment should be performed according to aetiology and patient's characteristics.

Keywords: Gastric volvulus, Borchardt's triad, Gastrectomy, Case report

INTRODUCTION

Gastric volvulus (GV) is a rare disease. The exact incidence of GV is unknown and patients with a chronic presentation may never be diagnosed. The peak age group of incidence is in the fifth decade. It was first described in 1866 by Berti based on the autopsy of a 61-year old woman.[1] The volvulus can be classified as organo-axial and mesentero-axial.

The clinical presentation of gastric volvulus depends on the degree of rotation and the rapidity of onset. In 30% of cases the volvulus occurs as a primary event, but it is more commonly secondary to another cause.[2] Clinical presentation may vary from occasional non-specific symptoms to life-threatening situations. The main consequence of the disorder is foregut obstruction that may be acute, recurrent, and intermittent or chronic.[3] Furthermore, there is a risk of strangulation which may result in necrosis, perforation and hypovolemic shock. As such, the mortality rates for acute volvulus range from 30% to 50% highlighting the importance of early diagnosis and treatment.[4]

CASE REPORT

A 35-year-old male presented to the emergency department with abdominal pain since 48 hrs that initially was epigastric and then became generalized. Associated symptoms were dyspnoea, nausea and vomiting. Upon arrival his vitals were recorded as blood pressure 80/40 mmHg (hypotension), pulse rate130 bpm (tachycardia), respiratory rate 28 rpm (tachypnoea), and SaO_2 85%. Electrocardiogram results showed no signs of acute myocardial ischemia.

The first examination revealed a distended and tympanic abdomen with diffuse pain on palpation and obvious signs of generalized peritoneal irritation. Nasogastric tube placement was unsuccessful. Patient had a past history of left thoracotomy and diaphragmatic plication for eventration of left hemidiaphragm with herniation of stomach and spleen. Crystalloid and colloid resuscitation

was done owing to symptoms of shock. Once the hemodynamic parameters improved, a plain abdominal X-ray was done which revealed a hugely distended viscus in upper abdomen, absence of gas in distal bowel and eventration of left dome of diaphragm (Figure 1). A computed tomography scan was ordered which revealed ample free fluid with organo-axial gastric volvulus along with signs of ischemia in the gastric wall and pneumoperitoneum (Figure 2).

Emergency surgery was indicated and the patient underwent laparotomy through a midline incision which revealed significant hemoperitoneum, organo-axial gastric volvulus with signs of ischemia and an impending perforation in fundus (Figure 3 and 4). Spleen was wandering, lying in the epigastrium and right hypochondrium region (Figure 5). The entire cavity was washed thoroughly. Stomach was de-rotated and atypical gastrectomy was performed, uprooting practically the entire necrotic area and followed by gastropexy.

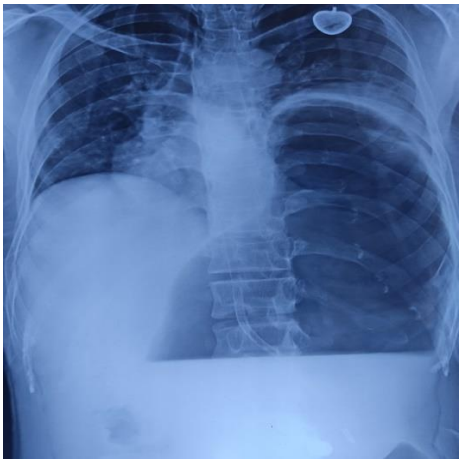

Figure 1: An abdominal X-ray showing distended viscus in upper abdomen, absence of gas in distal bowel and eventration of left dome of diaphragm.

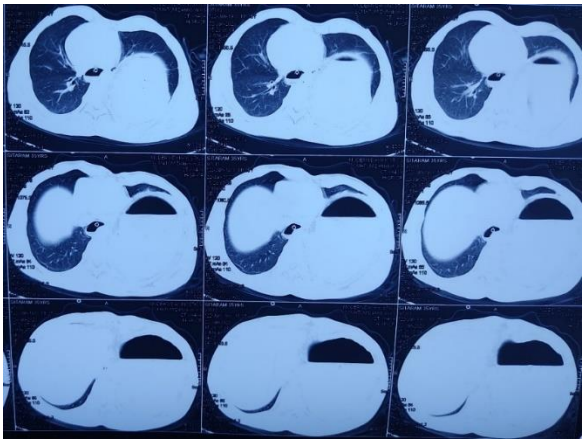

Figure 2: A computed tomography scan revealing ample free fluid with organo-axial gastric volvulus along with signs of ischemia in the gastric wall and pneumoperitoneum.

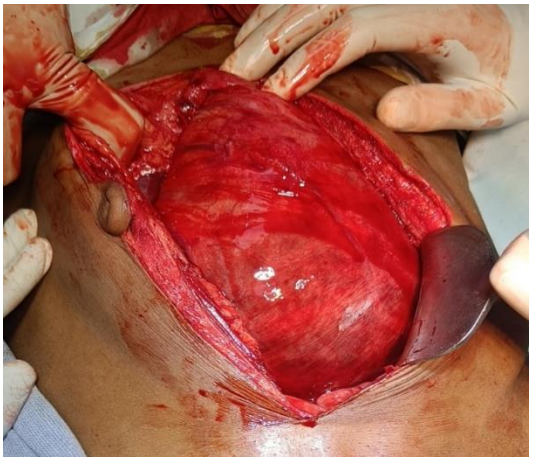

Figure 3: Intra-operative organo-axial gastric volvulus.

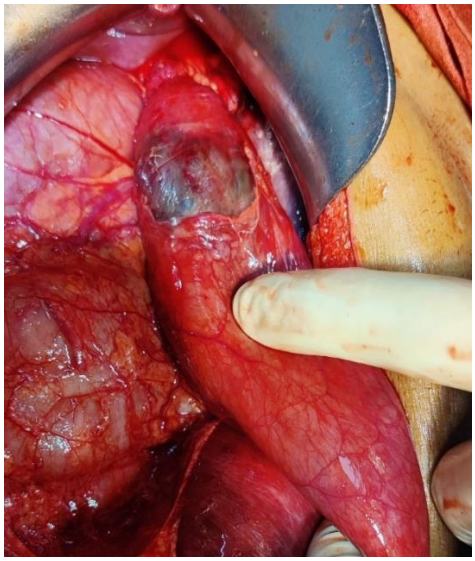

Figure 4: Intra-operative signs of ischemia and an impending perforation in fundus.

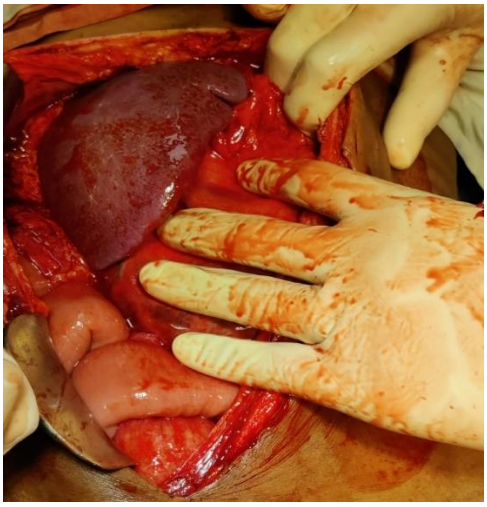

Figure 5: Intra-operative Wandering spleen in epigastrium and right hypochondrium region.

DISCUSSION

GV is defined as an abnormal rotation of the stomach by more than 180 degrees, which can create a closed-loop obstruction resulting in strangulation. Risk factors for gastric volvulus include: patient over 50 years of age, gastric ligament laxity, pyloric stenosis, gastroduodenal tumours, diaphragmatic injury and eventration, left lung resection, or pleural adhesions. The volvulus can be classified as organo-axial, where the stomach rotates around an axis that connects the gastroesophageal junction and the pylorus; mesentero-axial, where the rotation occurs around an axis that bisects both the lesser and greater curve; or mixed.

Mesentero-axial volvulus is more likely to be found in the paediatric population and is rarely described in adults. Strangulation is less likely to occur in mesentero-axial volvulus where spontaneous detorsions with recurrent acute episodes may occur.[5] Gastric volvulus is divided into two types: primary GV (25% to 30%) has been associated with the absence or laxity of the gastrocolic or gastrosplenic ligaments.[6] Secondary GV (70% to 75%) is always associated with an underlying condition such as paraesophageal and diaphragmatic hernias, connective tissue disorders, adhesions and anterior abdominal wall defects.[7] Acute GV usually presents with Borchardt's triad of vomiting, epigastric pain and an inability to pass a nasogastric tube. Chronic volvulus presents with broad-spectrum symptoms, like non-bilious vomiting, epigastric pain or distension, early satiety, retching and gastro-oesophageal reflux.

The diagnosis is frequently made by an abdominal radiograph and an upper gastrointestinal series which is considered the diagnostic tool of choice. CT scan provides more accurate diagnosis with specific details of the anatomical abnormalities. Paraesophageal hernia, diaphragmatic eventration and wandering spleen can be seen associated with gastric volvulus.[8] Gastric volvulus can sometimes be diagnosed through upper endoscopy and difficulty or inability for the endoscope to reach the pylorus can be encountered.

CONCLUSION

Acute GV is an abdominal emergency and early surgery is mandatory. Delayed diagnosis may result in strangulation, ischemia and necrosis with perforation leading to shock. Conservative management consists of endoscopic reduction or percutaneous endoscopic gastrostomy but it has more risk of perforation. The gold standard is open laparotomy with detorsion and prevention with anterior gastropexy. Gangrenous areas may demand subtotal or total gastrectomy. As for treatment of chronic GV, while surgery is the preferred treatment for most authors, others state that it can be managed conservatively with prokinetic agents and anti-secretory therapy.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Berti A. Singolareattortigliamentodell'esofago col duodenosequito da rapidamorte. Gazz Med Ital. 1866;9:139-41.
2. Chau B, Dufel S. Gastric volvulus. Emerg Med J. 2007;24(6):446-7.
3. McElreath DP, Olden KW, Aduli F. Hiccups: a subtle sign in the clinical diagnosis of gastric volvulus and a review of the literature. Dig Dis Sci. 2008;53(11):3033-6.
4. Teague WJ, Ackroyd R, Watson DI, Devitt PG. Changing patterns in the management of gastric volvulus over 14 years. Br J Surg. 2000;87(3):358-61.
5. Singleton AC. Chronic gastric volvulus. Radiology. 1940;34:53-61.
6. Woon CY, Chung AY, Low AS, Wong WK. Delayed diagnosis of intermittent mesenteroaxial volvulus of the stomach by computed tomography: a case report. J Med Case Rep. 2008;2:343.
7. Laurent S, Grayet D, Lavigne ChM. Acute and chronic gastric volvulus: radical different prognosis and management. Case report. Acta Chir Belg. 2010;110(1):76-9.
8. Zuiki T, Hosoya Y, Lefor AK, Tanaka H, Komatsubara T, Miyahara Y, et al. The management of gastric volvulus in elderly patients. Int J Surg Case Rep. 2016;29:88-93.

Cite this article as: Gupta N, Meena RS. Gastric volvulus and wandering spleen: a rare case report. Int Surg J 2023;10:1116-8.