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A RARE CASE OF ACUTE MESENTEROAXIAL GASTRIC VOLVULUS WITH SPLENIC INFARCT

Dr.B.Santhi	MBBS, MS(General Surgery), DGO, Professor and Head of the Department, Department of General Surgery, Government Kilpauk Medical College, Chennai-600010.
Dr.M.Uma	MBBS, MS(General Surgery), DGO, Assistant Professor, Department of General Surgery, Government Kilpauk Medical College, Chennai-600010.
Dr.R.Saradha*	MBBS, Postgraduate in General Surgery, Department of General Surgery, Government Kilpauk Medical College, Chennai-600010.*Corresponding Author

ABSTRACT Gastric volvulus is an uncommon clinical entity seen in both adults and pediatric patients. It occurs when the stomach is rotated atleast 180 degrees along its longitudinal or transverse axes. Gastric volvulus may present acutely or may present with intermittent, recurrent and chronic symptoms. In acute presentation, there is risk of strangulation of stomach leading to necrosis , perforation and shock. Hence, prompt diagnosis and treatment of acute gastric volvulus helps to decrease morbidity and mortality. We encountered a case of a 20 year old male patient who presented to the emergency department with acute onset of abdominal pain and distension. Following Contrast Enhanced Computed Tomography and upper GI endoscopy a diagnosis of acute strangulated gastric volvulus with eventeration of left hemidiaphragm was made and patient was posted for emergency laparotomy. Intraoperative findings included mesenteroaxial volvulus of the stomach with transmural necrosis of the fundus and proximal part of body of stomach along the greater curvature with eventeration of left hemidiaphragm and superior displacement of spleen with infarct of lower part of spleen.

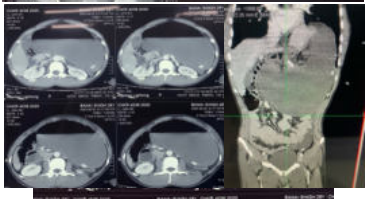
KEYWORDS : gastric volvulis, strangulation, eventeration, infarct, mesenteroaxial

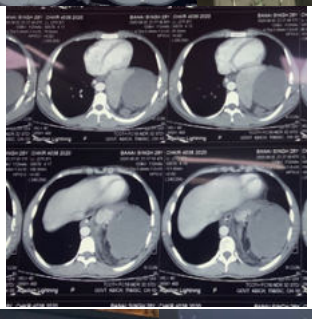
INTRODUCTION

Acute gastric volvulus was first described by Ambrose Pare in a patient with a strangulated diaphragmatic hernia following a sword wound. Berti in 1866 further detailed postmortem descriptions in a 60 year old woman. Gastric volvulus commonly occurs in children less than one year of age and in older adults with mean age being 70 years, with a male preponderance. It is a rare disease, often misdiagnosed or unrecognized leading to serious life threatening complications. The mortality for an acute volvulus ranges between 30% and 50%, thus indicating the importance of early diagnosis and treatment. Here we report a case of acute Gastric volvulus with strangulation and necrosis of stomach with eventeration of left hemidiaphragm and splenic infarct which was treated with timely surgical intervention.

PRESENTATION OF CASE:

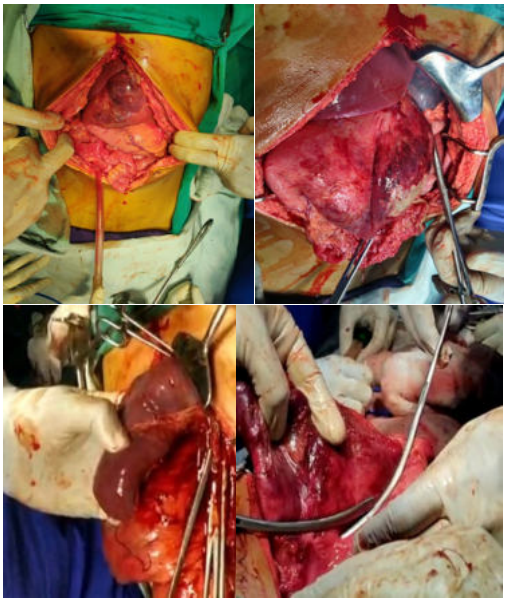
A 20 year old male patient presented to the emergency department with acute onset of abdominal pain and abdominal distension along with nausea since 24 hours. The patient did not have any pre-existing co morbid illness with no history of previous surgeries or any addictive habits. On clinical examination, he was found to have tachycardia with a pulse rate of 104/min and BP was 120/80mmHg , respiratory rate was 18 breaths/min and temperature was 98°F. His abdomen was uniformly distended with tenderness and guarding in the epigastric region. There was no organomegaly or any other palpable mass. Per rectal examination showed no significant abnormality. His baseline blood investigations were found to be normal except for leucocytosis with an elevated total count of 17100/cumm. Plain Xray chest and abdomen showed grossly distended stomach with eventeration of left hemidiaphragm . This was followed by a Contrast Enhanced Computed Tomography (CECT) of the abdomen which showed grossly distended stomach with collapsed small and large bowel loops. The antropyloric junction was seen just below the oesophagogastric junction which was suggestive of gastric volvulus. CT also showed eventeration of left hemidiaphragm with displacement of spleen superiorly and medially to the stomach in the paraspinal region at the level of heart.





An upper GI endoscopy was performed which showed reduced capacity of the stomach with inflammed , erythematous and ulcerated wall of the stomach with small areas of dark grey to black tissue seen - probably gangrenous wall of stomach . The scope could not be negotiated beyond the body of stomach and pylorus could not be visualized.

Based on the clinical presentation, CT findings and UGI scopy , patient was diagnosed to have acute gastric volvulus with probability of strangulation and necrosis of stomach and hence prepared for emergency laparotomy . Under general anaesthesia, a midline laparotomy was performed. The intraoperative findings included , mesenteroaxial volvulus of the stomach with transmural necrosis of fundus and proximal body of the stomach along the greater curvature along with eventeration of left hemidiaphragm. The spleen was found to be displaced supromedially with infarct involving lower pole of spleen. We proceeded with splenectomy followed by plication of left hemidiaphragm with nonabsorbable sutures. The necrosed portion of stomach wall was removed by a sleeve gastrectomy. A gastropexy was done by fixing the stomach to the anterior abdomen wall followed by a feeding jejunostomy . The patient recovered well post operatively and was discharged on 14th post operative day after administration of pneumococcal and meningococcal vaccines.



DISCUSSION

The term volvulus is derived from the latin word *volvere* meaning to turn or roll. Clinically, volvulus refers to a greater than 180 degrees twisting of a hollow organ about its mesentry resulting in luminal obstruction , impaired venous return and eventually ischemia. Though less common than volvulus of the caecum and sigmoid colon , acute gastric volvulus is a life threatening condition , when not recognized promptly can lead to necrosis of the stomach resulting in high morbidity and mortality. The correct orientation of the stomach is maintained by 4 anchoring ligaments namely gastrohepatic, gastrocolic, gastrolienal and gastrosplenic ligaments , along with the oesophagogastric junction and the retroperitoneal duodenum. Failure of the gastric attachments may predispose the stomach to volvulize.

Three classification systems exist for gastric volvulus and are often used in combination . Based on onset, gastric volvulus can be classified as acute or chronic. Singleton proposed the anatomic classification and it is composed of (1)organoaxial rotation, (2)mesenteroaxial rotation, (3)mixed. In organoaxial rotaion(70% of cases), the stomach rotates around its longitudinal axis – a transverse line between the pylorus and gastroesophageal junction. Mesenteroaxial rotation, which is less common (30%), occurs along a longitudinal line connecting the middle of lesser and greater curvatures and running parallel to the gastrohepatic omentum. Based on etiology, gastric volvulus can be either primary or secondary. Primary gastric volvulus occurs due to laxity or disruption of the ligamentous attachments of the stomach. It occurs below the diaphragm without any other intraabdominal pathology or diaphragmatic derangements. Primary volvulus is usually mesenteroaxial and common in children has been seen in association with congenital asplenia and wandering spleen. In most of the cases, gastric volvulus is secondary to another anatomic abnormality, commonly diaphragmatic defects. Most common cause ofsecondary gastric volvulus in adults is paraoesophageal hernia, whereas in children the most common cause is diaphragmmatic evnteration.

The clinical presentation varies based on the onset, anatomic orientation of the stomach, the degree of rotation and the amount of obstruction. The classical triad of Bouchardt includes severe epigastric pain and distension. Retching with inability to vomit and inability to pass a nasogastric tube. This triad can be seen in upto 70% of adult acute organoaxial gastric volvulus. In case of mesenteroaxial volvulus, the oesophagogastric junction is open and hence plascement of nasogastric tube should not be difficult. Ischemia leading to gangrene can occur in about 5% to 30% of cases and is more common in organoaxial than in mesenteroaxial volvulus. When gastric strangulation or perforation has occurred, signs of gastrointestinal bleeding and septic shock may be present. CT scan is the diagnostic modality of choice for acutely ill patients. Also, CT will detect other intra abdominal predisposing factors for gastric volvulus. In haemody namically stable patients, endoscopy can aid in diagnosis, with difficulty in passing the pylorus being the principal finding.

Acute gastric volvulus is a surgical emergency as mortality rates as high as 30% to 50% have been reported, with major cause of mortality being sepsis secondary to gastric strangulation. The goals of surgery are reduction of the volvulus, gastric fixation to prevent recurrence and repair of predisposing factors, if any. Partial gastrectomy, gastrojejunostomy, fundoantral gastrogastrostomy (Opolzer operation), Tanner gastropexy with colonic displacement and Grey's Ghementon gastropexy (transverse mesocolic defect created and sutured to anterior stomach) have been described as ways to stabilize the stomach. The most common procedure performed is the open anterior gastropexy, which can be easily accomplished by placement of a gastrostomy tube.

In selected cases of acute gastric volvulus without gastric necrosis, gastric decompression either by placement of a nasogastric tube or endoscopically may convert an emergency to an urgent operation or even avoid an operation altogether. After stomach has been reduced, gastropexy can be achieved by placement of a percutaneous endoscopic gastrostomy tube. Laparoscopic and combined laparoscopic and endoscopic approaches have the potential to combine minimally invasive techniques with repair of the diaphragmatic defect.

CONCLUSION

Acute gastric volvulus is an uncommon condition, which is a life threatening emergency due to risk of strangulation and gastric necrosis leading to high mortality and morbidity. A high index of clinical suspicion is often needed in patients presenting with acute epigastric pain associated with retching and dyspnoea. This condition requires immediate surgical intervention with detorsion of the volvulus, gastric fixation and correction of the predisposing factor.

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