

Gastric Volvulus with Torsion of Wandering Spleen: A Rare Case of Acute Abdomen

VIJAYA L PATIL¹, PRASAD SASNUR², SHRUTI G SHEELIN³, NAGARAJ BIRADAR⁴

ABSTRACT

Gastric volvulus with splenic torsion presenting as acute abdomen is a rare entity. Gastric volvulus is characterised by rotation of more than 180° either along long axis (organo-axial) or short axis (mesentrico-axial), resulting in partial or complete obstruction of the gastric lumen. If untreated, it results in strangulation, ischemia, necrosis, and finally gastric perforation with increased mortality. Wandering spleen is also a rare entity characterised by underdevelopment or absence of one or all of the ligaments that hold the spleen in its normal position, which may rarely lead to splenic torsion. It requires urgent diagnosis and treatment to overcome life threatening complications. Here we report a case of a 17-year-old female patient with acute gastric volvulus, presenting with perforative peritonitis with torsion of wandering spleen as seen in Contrast enhanced computed tomography of abdomen which showed pneumoperitoneum, raised left dome of diaphragm with organo-axial gastric volvulus, with non-visualisation of spleen in its normal position with ascites. Upper GI Endoscopy confirmed that visualised part of mucosa to be gangrenous, scope was partially negotiable till fundus. Patient was posted for emergency laparotomy. On laparotomy-spleen was seen anterior to fundus and gangrenous with visible torsion of splenic pedicle.

Keywords: Gastric lumen, Perforative peritonitis, Splenic torsion

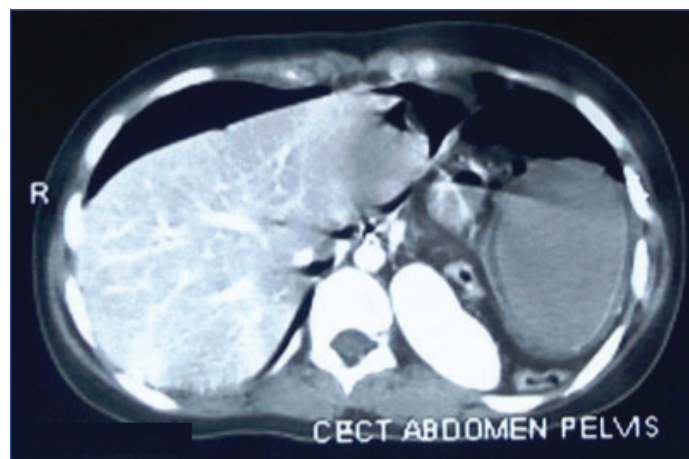
CASE REPORT

A 17-year-old female presented to emergency room with abdominal pain, abdominal distention, vomiting, etching of two days duration and one episode of melaena. She gave history of recurrent abdominal pain and vomiting since past one year.

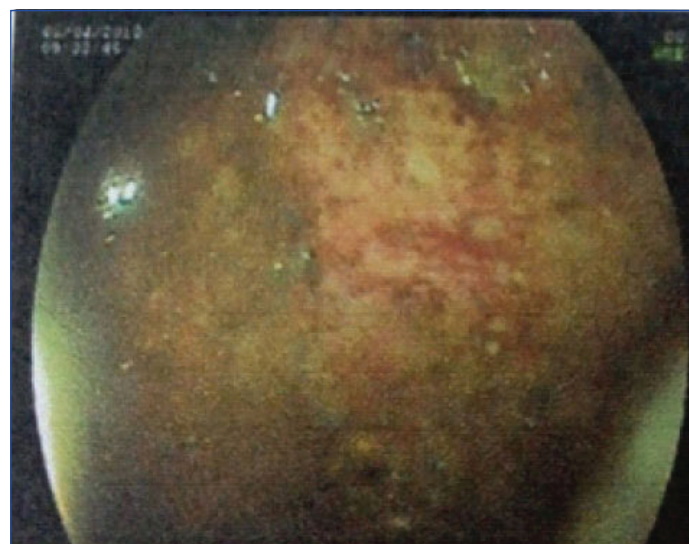
On examination, patient was in shock, BP-86/50mmHg, tachycardia (PR-138/min), tachypnea (RR-28/min). Abdominal examination revealed grossly distended abdomen, diffuse abdominal tenderness, guarding with absent bowel sounds. Patient was resuscitated in emergency room with intravenous fluids and was started on inotropic support with Inj Noradrenaline at 4 mL/hr and Inj Dopamine at 4 mL/hr.

Laboratory investigations revealed Haemoglobin 12.5 gm%, total count of 11,100 cells/cumm with predominant neutrophils 85%, Platelet count of 1,92,000 cells/cumm. Serum electrolytes, renal parameters, urine analysis were within normal range. X-ray of abdomen [Table/Fig-1] showed raised left dome of diaphragm, with huge dilated stomach. Ultrasound of abdomen showed massively dilated stomach, with spleen in ectopic position with whirl appearance and free fluid in abdomen. Contrast enhanced computed tomography of abdomen [Table/Fig-2] showed pneumoperitoneum, raised left dome of diaphragm with organoaxial gastric volvulus,

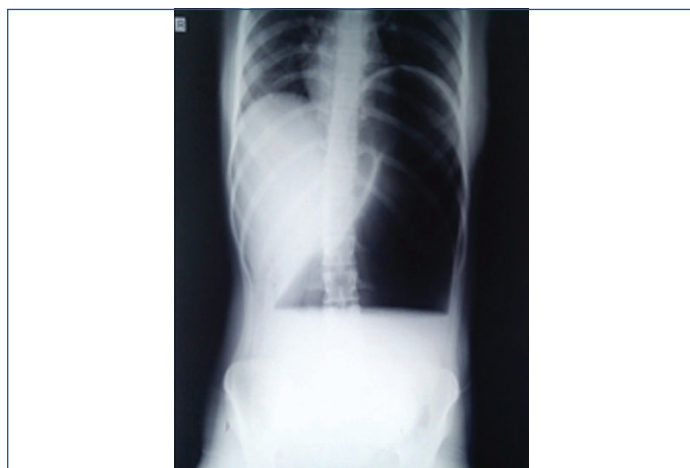
with non-visualisation of spleen in its normal position with ascites. Upper GI Endoscopy [Table/Fig-3] was confirmatory which showed,



[Table/Fig-2]: Axial view of contrast enhanced computed tomography scan of abdomen and pelvis.



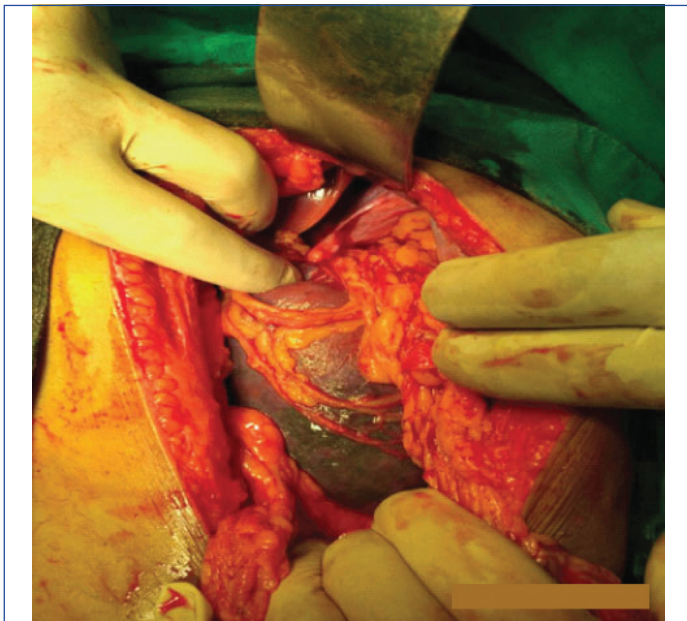
[Table/Fig-3]: Upper GI endoscopy showing necrosis of gastric mucosa.



[Table/Fig-1]: Erect X-ray abdomen showing huge distended stomach.

visualised part of mucosa to be gangrenous, scope was partially negotiable till fundus, not negotiated till duodenum.

With diagnosis of acute gastric volvulus and gastric perforative



[Table/Fig-4]: Laparotomy image showing wandering spleen with splenic infarction.



[Table/Fig-5]: Laparotomy image showing torsion of splenic pedicle.



[Table/Fig-6a]: Perforation (arrow) over posterior surface of body of stomach.



[Table/Fig-6b]: Laparotomy image showing perforation (arrow) over posterior surface of body of stomach.

peritonitis, patient was posted for emergency laparotomy. On laparotomy-spleen was seen anterior to fundus [Table/Fig-4], was gangrenous with visible torsion of splenic pedicle [Table/Fig-5], no ligamentous attachments to the spleen were seen, after splenectomy visualised stomach was distended with organoaxial volvulus and perforation of size 4x4 mm seen on posterior surface of body [Table/Fig-6a,b]. Stomach was decompressed, derotated and opened which showed whole of stomach mucosa to be gangrenous with no bleeding from cut edge.

On account of total gangrene of stomach with splenic torsion, splenectomy with total gastrectomy with Roux-n-Y oesophago-jejunosotomy with jejun-jejunostomy was done.

Postoperatively, patient was on inotropic support. On post-operative day five, she showed signs of pneumonia with septicaemia and succumbed to death due to cardiorespiratory failure.

DISCUSSION

An abnormal rotation of stomach of more than 180° is defined as gastric volvulus. It can be organo-axial, mesentrico-axial or combined. Organo-axial (59%) is more common than mesentrico-axial (29%), comprising 2/3rd of cases. Gastric volvulus was 1st described by Berti in 1866, it is an extremely rare condition presenting as acute abdomen [1,2].

If untreated, it results in strangulation, ischemia, necrosis and finally perforation [3]. Mortality rates can be 30-50% [4]. Wandering spleen is another rare condition with incidence of about 0.2% [5]. It mainly affects children, who make-up one-third of all cases with increased female preponderance [6]. In adults it is more common in women of reproductive age group.

It is characterised by excessive mobility of spleen and displacement from original position to another location caused by under-development or absence of gastro-splenic, spleno-renal, spleno-colic ligaments resulting in hyper mobile spleen [7]. In presence of elongated splenic pedicle, torsion may occur resulting in acute abdominal pain and may lead to splenic infarct which is a potentially fatal condition [8,9]. It has incidence of around 0.25% [3]. This condition has bimodal incidence which include children less than 10 years of age and women of childbearing age [4].

Mortality secondary to ischemia and gastric necrosis range about 42%-56% [10]. There exists a rare association between gastric volvulus and wandering spleen. These two entities share common

cause i.e., failure of fusion of dorsal mesentery with posterior body during foetal development which leads to failure/incomplete intra-peritoneal visceral ligaments [2,11].

Association of gastric volvulus with splenic torsion is extremely rare and is a diagnostic challenge for surgeons [12]. This index case is unique, being a female adolescent patient and there was torsion of wandering spleen along with gastric volvulus.

The diagnosis of this rare clinical entity is very challenging. Imaging plays an important role in diagnosis. Gastric volvulus presenting with acute abdomen requires immediate surgical intervention. The most approved surgical treatment is anterior gastropexy [7]. Subtotal or total gastrectomy is done when stomach appears gangrenous [2,11]. Splenopexy for wandering spleen is the ideal treatment, splenectomy is indicated if there is torsion/splenic infarction [13,14].

CONCLUSION(S)

Gastric volvulus is rarely associated with wandering spleen which may lead to splenic torsion. We should keep in mind the possibility of gastric volvulus and wandering spleen in young patients who present with recurrent episodes of abdominal pain where early diagnosis and timely intervention can prevent mortality.

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