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Acute Gastric Volvulus - A Case Report

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Summary:

A case of acute gastric volvulus (GV) in a young girl is reported. The patient reported with acute severe upper abdominal pain and distension but no hematemesis, melena and vomiting. Clinically, the condition was diagnosed as acute abdomen and per-operatively the condition was found to be an acute gastric volvulus without any other surrounding pathology. Total gastrectomy with roux-en-y esophago-jejunostomy was done. After resuscitative management immediate laparotomy or laparoscopy is the mainstay of management of acute GV. Its diagnostic difficulties, surgical management and outcome are discussed.

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Introduction

Gastric volvulus (GV) is an abnormal rotation of the stomach and the condition is very rare. The condition may be chronic or acute. The acute GV needs immediate attention and needs resuscitative management followed by operative management if required. Ligamentous laxity may be the main cause of volvulus but a number of other conditions may be associated with the development of this condition.

The case report

Miss TB, a 18 years young female patient was admitted in a private hospital of Savar area with complaints of pain in the epigastrium, right and left hypochondrium for five days. Initially, the pain was mild to moderate and spasmodic in nature but later the pain became severe and constant. The pain was not associated with vomiting, hematemesis, melena, jaundice or dyspnoea. There was history of inability of taking meal. There was past history of recurrent upper abdominal pain of short duration and used to subside spontaneously. On examination the patient was found in very poor general condition with moderate dehydration. Her pulse was 100/m and BP-90/50 mmHg. Upper abdomen was distended moderately with moderate tenderness and severe rigidity. Liver and spleen were not palpable. There was no obliteration of liver dullness and no visible peristalsis or ascites. Digital rectal examination was found normal. Preoperatively nasogastric tube could not be introduced in the stomach. A provisional diagnosis of acute abdomen was done keeping in mind of acute upper GI tract obstruction.

On laboratory Investigation

On investigation, all relevant biochemical parameters of blood was found within normal limits. Total WBC count was high with relative leucocytosis. Plain x-ray abdomen in erect position did not show any pneumoperitoneum or abnormal gas & fluid. In x-ray chest evidence of pneumonitis was found. Ultrasonography of abdomen was found normal.

The patient was operated upon (emergency laparotomy by a long midline incision) on the same day of admission after a period of six hours during which preoperative resuscitation was done. Per-operatively the stomach was found hugely distended and twisted at its two fixed points. Untwisting of the stomach was done but evidence of gangrenous condition of the whole stomach was detected. All efforts to improve the vascularity failed. Consequently, total gastrectomy with roux-en-y loop anastomosis by oesophago-jejunostomy was done. Abdomen was closed in layers keeping a drain in situ. Post-operatively the recovery was uneventful. Contrast x-ray of upper GIT was performed by gastrograffin on fifth postoperatively day and no leakage was found at the anastomotic site. Nasogastric feeding was stared on the fifth post-operative day. and nasogastric tube was removed on the seventh day of operation. Liquid nutritious diets were given up to the

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tenth day post operatively. Frequent small soft rice feeding started from the tenth day on wards. Post operative weight gain was satisfactory. General condition of the patients improved gradually. Haemodynamically she was stable and the patient was advised to report weekly for one month but the patient did not comply with the advice.

Discussion

Gastric volvulus is an abnormal rotation of the whole or part of the stomach. Berti first described the condition in 1866; he reported the postmortem findings in a 60 years old female. Subsequently he described the successful operative treatment of GV in two patients. In 1930, Buchanan classified the anatomical variations associated with this rare condition and aetiological factors clearly addressed by Tanner in 1968. Gastric volvulus is a rare condition that occurs when the stomach twists either in an orgnoaxial or mesenteroaxial direction. Organoaxial volvulus is most common in adults. In infants and children however meseneroaxial volvulus is common.

Although ligamentous laxity must be present thee are number of conditions that are associated with the development of volvulus and these are .

1. Abnormalities of the stomach.
   - Pyloric stenosis and duodenal obstruction
   - In infants, absence or attenuation of ligaments.
2. Abnormalities of surrounding viscerae-splenomegally, volvulus of transverse colon, and dislocation and hypoplasia of left lobe of liver.
3. Rotation of stomach to fill an abnormal space: para-oesophageal hernia, other forms of hiatus or diaphragmatic hernia and with congenital or acquired eventration of the diaphragm[1,2].

The clinical presentation of GV is entirely dependent on whether it is acute with complete obstruction and/or strangulation or chronic and associated with partial obstruction and no ischaemia. An acute event may occur in a stomach that has had chronic volvulus. The volvulus may be transient producing a few, if any symptoms or may lead to acute obstruction or even ischaemia and necrosis[1]. The peak incidence is in the fifth decade of life. Men and women are equally affected[2]. Acute GV occurs when the stomach or part of the stomach rotates more than 180 degrees creating a closed loop obstruction which ultimately leads to ischaemia and strangulation[3].

Borchardt's triad of acute epigastric pain. violent retching and inability to pass a nasogastric tube lead to strong clinical suspicion of acute GV[2]. The classical triad is often difficult to interpret in infants. In older patients, the condition can be difficult to distinguish from myocardial ischaemia. An ECG is often helpful. The plain radiography is often dramatic in both adults and children with a hugely dilated stomach and a double fluid level on the erect film. In patients with eventration or diaphragmatic hernia inverted stomach may be seen in the chest. Chronic or recurrent volvulus presents a clinical picture hat can be mistaken for gall bladder disease, gastritis or peptic ulcer disease[1].

Acute GV requires immediate pre-operative resuscitation followed by urgent laparotomy. The stomach must be derotated, gangrenous area resected and the stomach fixed with repair of any associated defects[1]. Laparotomy can be reserved for patients with either acute or chronic secondary GV[4]. Resection of the stomach and surrounding organs in particular the transverse colon, is required if they are non-viable. Once the stomach is reduced, the remainder of the procedure aims to prevent recurrence. In the present case stomach was gangrenous. So total gastrectomy was done followed by Roux-en-y oesophago-jejunostomy was done after proper resuscitation of the patient.

The treatment of chronic volvulus can be proceede more slowly with careful pre-operative evaluation and assessment of risk of surgery[1]. Acute or chronic GV can be treated successfully by either open or laparoscopic surgery.

Prophylactic gastropexy should be considered in wondering spleen[6,7]. Conservative treatment is both safe and effective in infants with chronic idiopathic GV. Routine gatropexy for all patients with a radiological diagnosis of GV appears to be over-treatment[4]. Laparoscopy not only identifies underlying predisposing conditions but also allows effective fixation for GV. Laparoscopic approach minimizes the access trauma and is superior for benign upper GI lesions[8].

Conditions predisposing to volvulus should be dealt with directly and this may be all that is required. In patients without any predisposing cause some form of gastropexy should be performed to prevent recurrence[1].

References

1. Peter J. Morris, Ronbald A Malt, Oxford Text Book of Surgery, Oxford Medical publication, Oxford- 1994. 953-55.
2. Tsang, T-K; Johnson, - Y-L; Pollack, -J; et. al. 1998 Dec; 43 (12): 2658-65.
3. Courtney M Townsend JR. MD. Text Book of Surgery. W B. Saunders Coy. Texus, USA 2001; 871.
4. Wolfgang, -R, Lee,-J-G. et. al. Gastronenterol. 2001 Apr; 32(4): 336-9.
5. Elhalaby, -E-A; Mashaly, -E-M. Pediatr ¾ Surg-Int. 2001 Nov; 17(8): 596-600.
6. Teague-WJ; Ackroyd-R, Watson-DI; et. al. Br-J-Surg. 2000 Mar; 87(3): 358-61.
7. Spector-JM, Chappell-J, J-Pediatr-Surg. 2000 Apr; 35(4): 641-2.
8. Siu,-W-T; Leong,-H-J; Li-M-K. Surg-Endosc. 1998 Nov; 12(11): 1356-7.