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Case Report

An unusual cause of vomiting: chronic gastric volvulus due to old diaphragmatic defect

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ABSTRACT

We here in report a very unusual case of a 40-year-old female lady who presented with the sole symptom of recurrent vomiting for the last 4 months. She was diagnosed to be a case of organoaxial gastric volvulus through a old diaphragmatic defect. She was successfully treated with anterior gastropexy and on 3 months follow-up she continues to be in a good state of health.

Keywords: Chronic gastric volvulus, Diaphragmatic hernia, Borchardt's triad, Vomiting, Organoaxial gastric volvulus, Anterior gastropexy

INTRODUCTION

Gastric volvulus is an uncommon entity and is rarely encountered in clinical practice. Most of these patients of acute gastric volvulus presents in the emergency and needs urgent surgical intervention to prevent gastric necrosis and perforation. At the other end of the spectrum, patients with chronic gastric volvulus tend to have a long clinical course. They may be asymptomatic or present with vague abdominal symptoms making diagnosis even more difficult. The Borchardt's triad may not be found in such cases of chronic gastric volvulus as was found in our patient. Diagnosis remains a clinical challenge as the condition may be mimicked by biliary tract disease or a chronic duodenal ulcer.

This condition may be idiopathic or secondary to various congenital or acquired conditions. Among the associated problems diaphragmatic defects predominate.[1-4] Chronic gastric volvulus through and old diaphragmatic defect is an unusual presentation as was our case where the patient was found to have a past history of spinal tuberculosis along with thoracic spine fixation 1 year back, probably leading to the diaphragmatic defect.

CASE REPORT

A 40 year old lady was referred to us with the chief complaint of the recurrent episode of vomiting since 4 months. She was apparently symptom free before that. The vomiting was insidious in onset, non-projectile, non-bilious and spontaneous in nature. It was acidic in taste and without any foul odour. It mainly contained undigested food material taken in the previous meal. Initially, the frequency of vomiting was 5-6 episodes/day which latter aggravated to 8/10 episodes daily. There was no associated symptom of dyspepsia, heartburn, abdominal pain, abdominal fullness after meals, and anorexia or early satiety with meals. Her bowel and bladder habit was normal. However, she had a weight loss of 4 kg during the illness. Her past medical history revealed that she underwent treatment for spinal tuberculosis with antitubercular drugs and also underwent thoracic spine fixation for vertebral collapse. On physical examination, she was dehydrated. However, she was hemodynamically stable. Abdominal examination did not reveal any tenderness or lump. Rest of her systemic examination was within normal limits.

She was resuscitated with intravenous (IV) fluids. Repeated attempts at nasogastric tube insertion failed. Subsequent workup with an upper gastrointestinal endoscopy revealed inability to reach the pylorus of the stomach along with recoiling of the scope on the further attempt at advancement. The gastric mucosa was normal. A diagnosis of chronic gastric volvulus was made. A barium study of stomach and duodenum further showed organoaxial gastric volvulus (Figures 1a and b). Patient was taken up for laparotomy. Abdomen was opened via midline incision. On exploration, stomach was found to herniated via a defect in the left dome of diaphragm (Figure 2). The stomach was pulled out into the abdominal cavity, derotated, viability assessed and was fixed in position with an anterior gastropexy. The diaphragmatic defect was 7 cm × 8 cm in size and irregular in shape (Figure 3). It was repaired primarily using prolene sutures (Figure 4). Post-operatively she was managed with IV fluids, antibiotics and nasogastric aspiration. Her recovery was smooth, and she was discharged on the 7th day. She has been fine on 2 months follow-up.

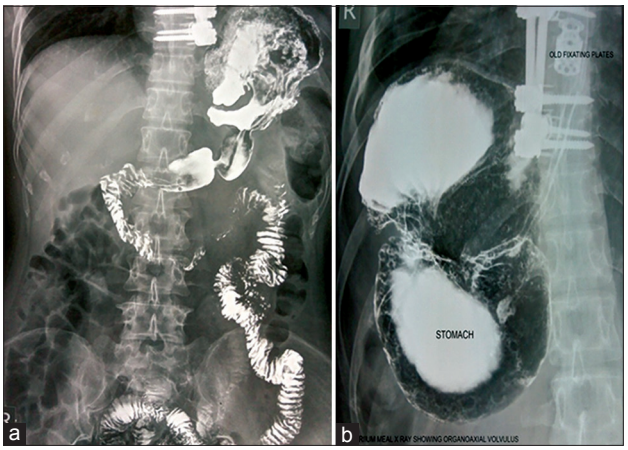

Figure 1: (a and b) Barium meal X-ray of stomach and duodenum showing organoaxial volvulus.

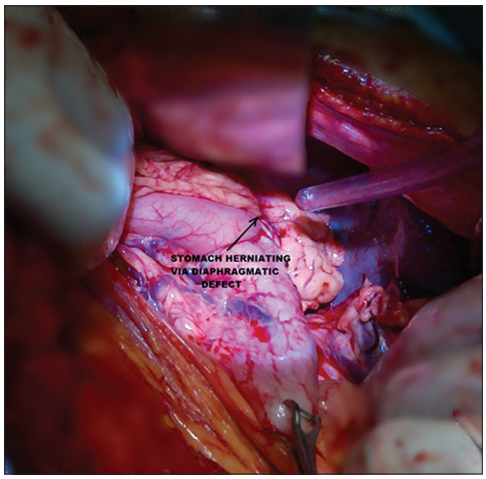

Figure 2: Stomach herniating through a defect in the left dome of diaphragm.

DISCUSSION

Gastric volvulus was first described by Berti in 1866 in a female autopsied patient,[1] and the first operation was performed by Berg in 1897. Since then around 400 cases have been described in the literature.

The stomach can undergo volvulus either in the organoaxial (along the long axis of the organ) or mesenterioaxial predisposition.[2-4] The former is associated with various predisposing factors like eventration of the diaphragm, hiatus hernia, asplenia, absence of ligaments, etc. A mesenteroaxial volvulus is less common and occurs when the stomach rotates from right to left or left to right along the axis from the lesser to a greater curvature. A combined organoaxial and mesenteroaxial rotation is least frequent.

A gastric volvulus can also be classified into an acute or chronic subtype. The acute subtype often presents with the classical Borchardt's triad (sudden onset epigastric

Figure 3: Stomach being reduced into the abdominal cavity.

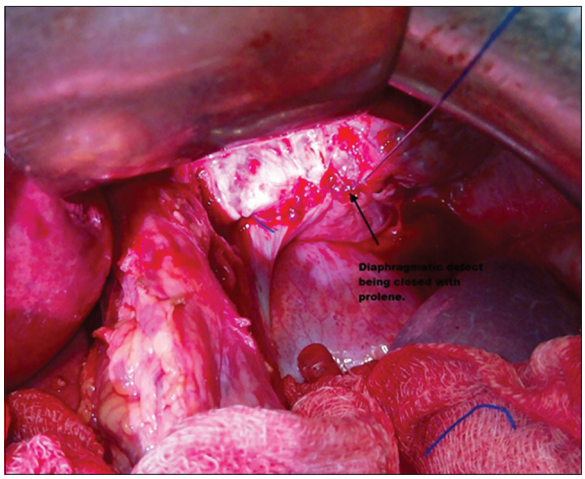

Figure 4: Diaphragmatic defect being repaired with prolene suture.

pain and distention, vomiting followed by retching without vomiting, and difficulty or inability to pass a nasogastric tube) which is a sine qua non of the disease. A chronic gastric volvulus can be asymptomatic or intermittent, varying from vague to severe abdominal pain. Therefore, the clinical picture of a chronic gastric volvulus may be difficult to distinguish from a biliary disease, peptic ulcer or gastritis.[5] Based on the etiology, a gastric volvulus can also be divided into primary and secondary. A primary gastric volvulus which accounts for one-third of the cases occurs without diaphragmatic derangement or intra-abdominal pathology. Abnormal lengthening of gastrocolic, gastrohepatic, gastrophrenic, and gastrosplenic ligaments is a major etiologic factor.[6,7] A secondary gastric volvulus accounts for two-thirds of cases and is associated with diaphragmatic defects or intra-abdominal pathology such as a paraesophageal hiatal hernia, elevation of the diaphragm, trauma to the diaphragm, gastric ulcer or neoplasm, phrenic nerve injury causing diaphragmatic paralysis, and extrinsic pressure on the stomach from enlarged abdominal organs or adhesions within the abdomen.[6,7] Our case was probably due to a missed diaphragmatic trauma that occurred while thoracic spine fixation 1 year back. This type of late presentation of missed diaphragmatic defect is well recognized and has been reported in the literature.[8]

Today gastric volvulus can be diagnosed confidently based on endoscopic finding supplemented by result of barium swallow study. The latter may show obstruction at the gastroesophageal junction giving a Bird's Beak appearance. Plain X-rays can also be helpful as they often demonstrate air fluid levels within the thorax. Gastric volvulus is generally treated surgically that in most cases require an anterior gastropexy after the stomach is reduced into the abdomen. Associated diaphragmatic defect can be primarily closed using sutures. Recently, endoscopic reduction of the gastric volvulus has been reported[9-11] and reports of percutaneous endoscopic gastropexy[12] and laparoscopic gastropexy[13] for gastric volvulus have increased.

CONCLUSION

This case demonstrates the atypical presentation of chronic gastric volvulus with only complaint of recurrent episodes of vomiting without any abdominal or constitutional symptoms. This case report highlights the fact that previous diaphragmatic trauma can be easily overlooked which can give rise to such a situation. Hence, relevant history must be sought in details in such clinically demanding situations. Since gastric volvulus is a rare condition, diagnosis requires high suspicion. Prompt diagnosis and timely surgery often yield favorable results as in our case.

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