Gastric volvulus

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Introduction

Gastric volvulus, *volvere* (Latin) meaning ‘to roll’, is rare clinical entity, first described by Berti (1866) [1]. It is defined as an abnormal rotation of the stomach of more than 180°, creating a closed-loop obstruction, resulting finally in incarceration and strangulation [2]. The stomach is turned along its transverse (organoaxial) or longitudinal (mesenteroaxial) axis [3]. It is seen both in children and elderly patients, but the majority of cases are observed in the fifth decade of life with equal sex distribution. The acute presentation of gastric volvulus is dramatic, not often missed and usually quoted in the literature and case citations. The subacute or chronic type however is frequently not recognized early in its presentation because it is accompanied by vague and non-specific symptomatology suggestive of other abdominal processes.

We are reporting this case to present the spectrum of clinical and imaging findings, correlate the type of chronic gastric volvulus with clinical outcome, and identify imaging findings to aid in early diagnosis.

Case

A 60-year-male patient was hospitalized for recurrent vague upper abdominal discomfort, epigastric pain, abdominal fullness and vomiting. He had taken medical treatment for the same since 2 weeks but still had no relief. Initially pep-

tic ulcer was suspected and proton-pump inhibitors started and all routine investigations done. Haematological findings were within normal limits, X-ray abdomen showed eventration of left hemi diaphragm with distended gastric bubble one in mediastinum and in upper abdomen (Fig. 1), ultrasonography abdomen no abnormality noted. In barium studies inverted stomach along the mesenteric axis with pylorus above the cardia; duodenal cap seen above the cardia with loss of normal C-loop curvature; in jejunum, ileum

Fig. 1 Plane X-ray abdomen in erect position, showing eventration of left hemi diaphragm with distended gastric bubble one in mediastinum and in upper abdomen

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Fig. 2 Barium meal follow-through (A) inverted stomach along the mesenteric axis with pylorus above the cardia (B) duodenal cap seen above the cardia with loss of normal C-loop curvature

and ileo-caecal junction normal pattern with no evidence of obstruction noted; appendix and colon appears normal (Fig. 2). So the diagnosis of chronic gastric volvulus of stomach with malrotation of duodeno-jejunal loops made. We reviewed literature and kept on him on medical management as no acute symptoms were present. Although he is doing well at 6 months follow up with relief in his symptoms. However he had been counselled for surgery if required in future.

Discussion

Gastric volvulus a rare clinical entity, first described by Berti (1866) [1]. It is an abnormal rotation of the stomach of more than 180° , along its axis [3]. Three types of volvulus have been described according to the axis of rotation. (i) Organoaxial (59%) axis of rotation passes through the pylorus and the oesophagogastric junction (the long axis of the stomach). This is the commonest type. (ii) Mesenterioaxial (29%) torsion occurs around the short axis, which is at right angles to the long axis, passing through the greater and lesser curves. (iii) Combined is a mixture of the previous two types. It can be classified as sub-diaphragmatic or primary volvulus, which is not associated with diaphragmatic disorders, or supradiaphragmatic or secondary volvulus, which is associated with diaphragmatic pathologies.

In almost 75% of cases the volvulus is secondary to para-esophageal hiatus hernia, traumatic diaphragmatic hernia, eventration of the diaphragm, abdominal bands or adhesions; most common is hiatal hernia, but the principal predisposing factor is ligamentous laxity [4, 5]. Chronic

gastric volvulus may present with vague abdominal symptoms or postprandial pain, abdominal distension, belching, vomiting, or gastrointestinal bleeding.

It is a diagnostic emergency and therapeutic challenge in acute forms, as it presents with Borchardt triad: Upper abdominal pain, vomiting and difficulty to pass a nasogastric tube; and may lead to gastric strangulation with a high risk of ischemia and necrosis. Chronic form presents with non-bilious emesis, epigastric distension. It is suspected when erect chest radiograph images show a high air-fluid level in the chest, but diagnosis can be made by barium-meal examination. Great care must be taken to exclude other upper abdominal abnormalities as volvulus may also be produced during a barium-meal examination [6]. Nonetheless, a computed tomography scan now provides a comprehensive description of the thoracic lesion, including stomach vitality.

Many patients have only minimal symptoms and require no treatment. When the symptoms are disabling, surgical treatment should be directed depending on the underlying etiology of the volvulus [6]. Specifically volvulus reduction, reintegration of the stomach into the abdominal cavity in cases of intrathoracic migration, and correction of causal factors. Resection of the hernial sac and the role of gastropexy for preventing recurrence remain controversial. Advances in laparoscopic surgery have made possible a laparoscopic approach to most cases of chronic gastric volvulus [5].

Conclusion

Chronic gastric volvulus is an uncommon cause of recurrent abdominal pain. Its diagnosis must be suspected in patients where no real organic aetiology can be found in adults. It can be managed with conservative management and surgery if present in its acute form.

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