CASE REPORT

Gastric diverticulum: A case report with a brief literature review

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Abstract

Gastric diverticula are the rarest type of diverticula detected in the gastrointestinal tract. With possible forms of congenital or acquired origin, it shows no gender predominance and is commonest in the ages of 50-70 years. Here, we report a case of gastric diverticulum detected in a 48-year-old female presenting with symptoms of dyspepsia and early satiety. The gastric diverticulum was detected during upper gastrointestinal endoscopy, which was further defined by an upper gastrointestinal contrast study. The patient recovered after two weeks of treatment with a proton pump inhibitor and a prokinetic, counselled regarding possible complications and advised to be reviewed if symptoms recur. Although gastric diverticula are rare, this can worsen with ulceration, bleeding, perforation, and malignant transformation. This emphasizes how crucial it is to identify and comprehend this condition in order to provide patients with the proper care and follow-up.

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Introduction

A gastric diverticulum is an outpouching of the stomach wall, reported in 0.01-0.11% routine upper gastrointestinal endoscopies (1,2). It is one of the least common forms of gastrointestinal diverticula, in comparison to 10-70% in the colon (3), 0.02-22% in the duodenum, and 0.02-7.1% in jejunoileal region of the small intestine found on imaging considering the acquired form (4). The well-known congenital Meckel's diverticula of the ileum, has an incidence of 2% on imaging, while there is very limited data on other congenital gastrointestinal diverticula (4), except for rare case reports (5,6). Detection of gastric diverticula are usually as incidental findings during routine diagnostic tests (1). With equal prevalence among men and women, it is commonest in the age group 50-70 years (1,2). Here we report a case of gastric diverticulum detected in a patient investigated for dyspeptic symptoms.

Case report

A 48-year-old female presented to a surgical unit of National Hospital Kandy, Sri Lanka with dyspeptic symptoms including epigastric pain and discomfort and early satiety of two weeks duration. She did not complain of other abdominal symptoms such as belching, anorexia, or dysphagia. She was of average build with no apparent clinical features of nutritional deficiency. On upper gastrointestinal endoscopy, conducted up to the second part of the duodenum, a diverticulum was noted at the gastric fundus (Figure 1). No significant inflammation or other findings were observed. Upper gastrointestinal contrast study was performed on which a well-defined contrast filled out-pouch was noted in the posterior wall of gastric fundus close to the cardia, directed posteriorly and medially (Figure 2 and Figure 3). The dimensions were 18x28x11 mm and the neck was 12 mm in diameter. No other diverticula, strictures or gastro oesophageal reflux were demonstrated.

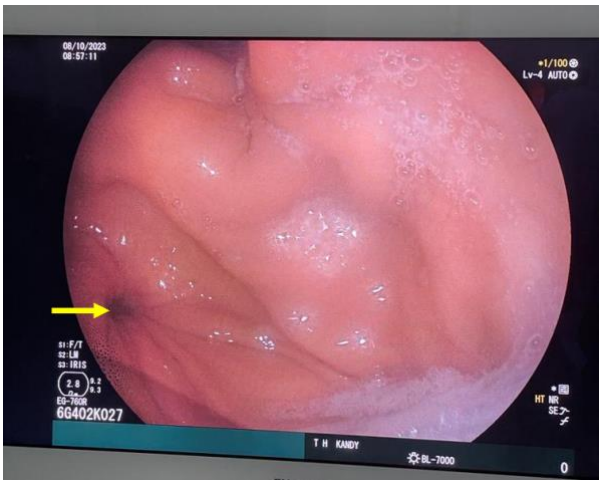

Figure 1. Endoscopic image showing the region of the fundus of the stomach. The gastric diverticulum is indicated by the yellow arrow.

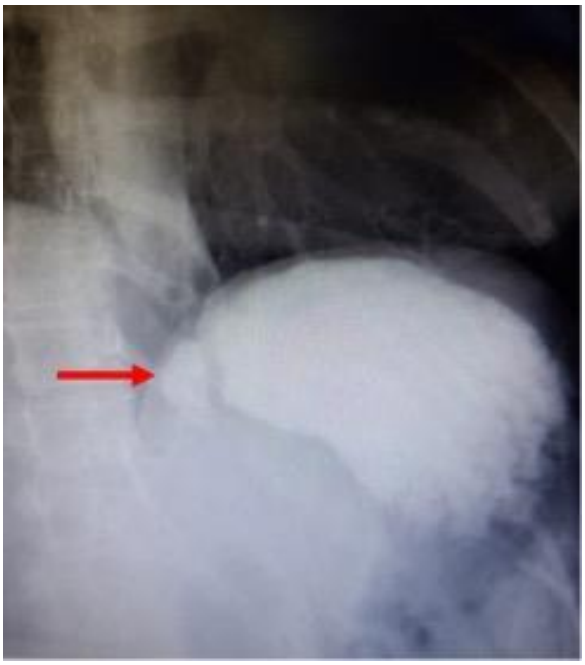

Figure 2. Upper gastrointestinal contrast study of the stomach (anteroposterior view) showing the gastric diverticulum (red arrow).

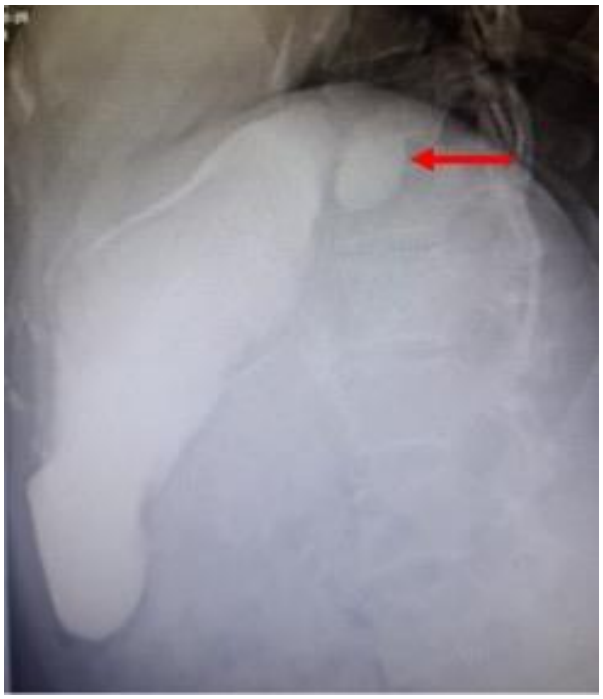

Figure 3. Upper gastrointestinal contrast study of the stomach (lateral view) showing the gastric diverticulum (red arrow).

The patient was treated conservatively with a proton pump inhibitor and a prokinetic for a two-week duration after which her symptoms settled. She was counselled regarding her condition and advised to be reviewed if symptoms recur.

Discussion

Gastric diverticula can be congenital or acquired, with the congenital form, comprising all gastric wall layers, predominantly observed in the posterior wall of the gastric fundus (1,2,7), as evident in this case, a presentation not previously documented within the Sri Lankan population. There are different hypotheses on the embryological origin of congenital gastric diverticula. One of them state that the gastric fundus could herniate through an area of the dorsal mesentery before its fusion with the posterior body wall (2). Another hypothesis is that diverticula could occur due to the splitting of the longitudinal muscular fibres at the level of the cardia, where large vessels are found within the muscular coat, leaving only the circular muscle layers and therefore a weak point allowing the diverticula to form during the foetal period (7,8). Others include the traction caused by the Grassi's nerve (branch of the posterior vagal trunk) and the persistence of a foetal occurrence (8).

Conversely, acquired diverticula, also known as pseudodiverticula, do not include all the layers and typically emerge in or near the gastric antrum (7). They often arise as a consequence of underlying conditions such as peptic ulcer disease, pancreatitis, cholecystitis, cancer, gastric outlet obstruction, and gastroesophageal reflux disease (1). Notably, a case of acquired diverticula arising from the pylorus associated with gastric outlet obstruction has been reported in Sri Lanka previously, which was treated surgically with gastrojejunostomy and jejunojejunostomy to bypass the obstruction (9).

Most congenital gastric diverticula have a diameter of the neck measuring between 10-30 mm (7), which conforms with our finding of 12 mm. Gastric diverticula of wider necks are less susceptible to complications most probably as they are less likely to trap food and digestive secretions (7). Size greater than 40 mm has been suggested as an indicator for surgical intervention. However, since size has not been consistently linked to symptoms, this recommendation is doubted due to insufficient evidence (8).

Gastric diverticula are mostly asymptomatic, though a variety of abdominal symptoms may occur including epigastric pain or discomfort, dyspepsia, early satiety, belching, anorexia, and dysphagia. Ulceration, bleeding, perforation, and malignant transformation are known complications (1). Retention of food and gastric juices within the diverticulum is believed to be the cause of symptoms and complications (7).

Diagnosis of gastric diverticula can be made through upper gastrointestinal endoscopy, upper gastrointestinal contrast studies and computed tomography (CT) scans (1). Our case was diagnosed using the former two investigations, while a CT scan was not performed mainly due to the limitation of resources. Upper gastrointestinal endoscopy remains the gold standard method in diagnosis of gastric diverticula (1). While contrast studies may fail especially with narrow necked diverticula, CT scans are known to misdiagnosed gastric diverticula as adrenal masses (1,7).

Asymptomatic individuals do not need any treatment. Symptomatic cases could initially be treated with proton pump inhibitors, histamine receptor antagonists or antacids (1). Proven cases of gastric diverticulum have been reported to be successfully treated conservatively with medication (10–12), similar to the case reported by us. However, it should be kept in mind that the pathological condition remains which may lead to the recurrence of symptoms or complications (2). Development of malignancy within gastric diverticula have been reported previously (13,14). Acute life-threatening complications such as ulceration, perforation, haemorrhagic shock and torsion have been described in literature (8). This emphasizes the value of patient education and adequate follow up even in uncomplicated cases. Some authors have suggested routine surveillance along with periodic history and physical evaluation (7). Refractory cases or occurrence of complications may necessitate endoscopic, transthoracic, laparoscopic or surgical resection (1,7,8).

This rare finding gave us insights on the importance of recognizing gastric diverticula and understanding associated complications which is essential for optimizing patient care.

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