A case report of large gastric diverticulum with literature review

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ABSTRACT

INTRODUCTION: A gastric diverticulum is a rare form of diverticular disease due to outpouching of the gastric wall. It is equally presented within both sexes and commonly occurs in fifth and sixth decades of life. Patients mostly asymptomatic but may present with mild gastric symptoms. Surgical treatment is largely dependent on the patient’s symptoms, and a laparoscopic approach is usually recommended for surgery.

CASE PRESENTATION: A 77-year-old gentleman presented to the outpatient clinic with a one-month history of passing black stools. He was arranged for an oesophagogastroduodenoscopy (OGD) which revealed a gastric body polyp and a diverticulum in the fundus of the stomach.

DISCUSSION: Gastric diverticulum is defined as an outpouching of the gastric wall. They are uncommon, with an incidence between 0.01–0.11%. Predisposing factors include: areas of weakness caused by splitting of the longitudinal muscle fibres, an absence of peritoneal membrane and perforating arterioles. The management of patients with gastric diverticulum depend largely on their symptoms. There is no specific treatment required for an asymptomatic diverticulum.

CONCLUSION: Gastric diverticula are rare conditions which are largely asymptomatic but may present with varying signs and symptoms and may require surgical intervention.

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1. Introduction

Gastric diverticulum is defined as an outpouching of the gastric wall [1]. They are uncommon, with an incidence between 0.01–0.11% [2]. There is an equal incidence between males and females, and usually occurs in patients between 50 and 60 years old. Predisposing factors include: areas of weakness caused by splitting of the longitudinal muscle fibres, an absence of peritoneal membrane and perforating arterioles [3].

Patients are often asymptomatic, and usually present as incidental findings on endoscopic or radiological studies. Treatment methods are variable depending on the patient’s symptoms.

Here we present a case of a large gastric diverticulum, with discussion of the presentation, investigations and management options of this condition. This case report was prepared according to the SCARE guidelines [6].

2. Case report

A 77-year-old gentleman presented to the outpatient clinic with a one-month history of passing black stools. There was no history of abdominal pain, nausea, vomiting, dysphagia, haematemesis, fresh per-rectal bleeding, anorexia, weight loss or symptoms of anaemia. He was arranged for an oesophagogastroduodenoscopy (OGD) which revealed a gastric body polyp and a diverticulum in the fundus of the stomach (Figs. 1 and 2). Histology of the gastric polyp revealed a fundic gland polyp. A CLO test (Campylobacter-like organism test) was performed which was negative. A Computed Tomography (CT) of the abdomen and pelvis was performed, which revealed a large 8.2 × 5.1 cm diverticulum arising from the posterior wall of the gastric fundus (Figs. 2–4). The patient was reassured and given an appointment for subsequent follow up.

3. Discussion

Patients often present with vague and variable symptoms. In a literature review conducted by Rashid et al. [3], presentations include: Incidental findings endoscopically or radiologically, halitosis (likely attributed to retention of food residue in the diverticulum), upper gastrointestinal (UGI) bleed, upper abdominal pain, reflux, bloating and anorexia. Complications of a gastric diverticulum may present as massive UGI bleeding, ulceration, diverticulitis or perforation (due to food retention and release of gastric juices.

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within the mucosal sac). Only 2 cases of invasion with adenocarcinoma have been reported [5,6].

Seventy-five percent of true gastric diverticula are located in the posterior wall of the fundus of the stomach, 2 cm below the gastro-oesophageal junction and 3 cm from the lesser curve, with a size range between 3 and 11 cm [4]. They are classified into congenital and acquired diverticulum. Congenital diverticulum are “true diverticulum” involving all layers of the gastric wall, and are thought to more commonly occur along the posterior wall of the gastric fundus, attributed to the embryonal origin due to a defect in fusion of the dorsal and ventral mesentery with the consequent formation of a diverticulum. This is compared to an acquired diverticulum which are “false diverticulum” lacking the muscular or serosal layer, which tends to occur in the antrum, and may be attributed to causes such as peptic ulcer disease, malignancy, pancreatitis, gastric outlet obstruction or post Roux-en-Y gastric reconstruction.

As patients often present with vague symptoms, a high clinical suspicion is required to guide investigations. The most reliable tests include endoscopy or radiological imaging with an UGI contrast study or a CT scan with oral contrast, demonstrating the presence of a mucosal sac. However, methods of detection may fail, hence a combined approach should be used. Reports have recommended to confirm the diagnosis with an UGI endoscopy, as this modality confirms the location and size of the diverticular neck, rules out other pathology, and provides an opportunity for biopsy of any concurrent pathology [4]. Symptoms may also be replicated with distention of the diverticulum during the scope. CT scans have been proven to mistake gastric diverticula for adrenal masses.

It is also important to rule out other causes of the patient’s symptoms. A study by Palmer et al. showed that 30 out of 49 patients with a gastric diverticulum had other gastrointestinal diseases causing their symptoms [1].

The management of patients with gastric diverticulum depend largely on their symptoms. There is no specific treatment required for an asymptomatic diverticulum [3]. However, routine surveillance with interval physical examinations is recommended to watch for potential complications, especially for diverticula >4 cm. A course of proton pump inhibitors (PPIs) may help resolve symp-
toms of dyspepsia and epigastric pain, but is often a temporary solution and does not solve the underlying pathology.

Surgical treatment is recommended for large, symptomatic or complicated (perforation, bleeding or malignancy) diverticula. Palmer et al. [1] found that 6 out of 9 patients with symptoms who underwent open surgery showed good outcomes post operatively [1]. Surgical options include laparoscopic and open resection. Since the late 1990s after the first laparoscopic resection of a gastric diverticulum was performed, it has now become the favorable approach, and is considered safe and feasible. As described in a case report by Donkervoort et al., the posterior aspect of the gastric fundus can be accessed laparoscopically by dividing the gastrocolic ligament [5]. A simple diverticulectomy is then performed with a laparoscopic cutting stapler. It is important to note that the diverticulum may be difficult to locate intra-operatively as it is often collapsed and may be hidden in the splenic bed, hence resulting in reported cases of resecting the wrong part of the stomach. In such cases, it is recommended that the surgical procedure be combined with intra-operative endoscopy which allows for distension of the diverticular sac and accurate localization.

4. Conclusion

Gastric diverticula are rare conditions which are largely asymptomatic but may present with varying signs and symptoms. Workup includes both endoscopy and radiological imaging. Treatment is largely dependent on the patient’s symptoms, and a laparoscopic approach is usually recommended for surgery.

Conflict of interest

None.

Funding

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Ethical approval

This is case report and we had no ethical approval obtained from the ethical committee or hospital authority as it is not need by our institution.

Consent

Written consent was taken from patient by institutions, that all pictures and video can be used for the purpose of academic / research and education where patient identify will not be revealed.

Author contribution

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