INTRODUCTION

Gastritis cystica polyposa (GCP) is an uncommon lesion that usually develops at the gastroenterostomy site. A 57-year-old man visited a hospital with a complaint of melena. He did not have any surgical history or past medical history. Endoscopy was performed to evaluate the cause of melena, and a polypoid cystic mass in the stomach was found on an endoscopy and endoscopic ultrasonography. The polypoid cystic mass did not show any enhancing solid portion on a computed tomography. The gastric lesion was conclusively confirmed as GCP through endoscopic submucosal dissection. We report a rare case of GCP that occurred in an unoperated stomach.

CASE REPORT

A 57-year-old man was referred to our hospital for further evaluation of a gastric mass that was detected by endoscopy. The patient had no significant symptoms other than melena. There was nothing unusual observed on the physical examination, and routine laboratory test results were normal. He had no specific family or past medical history. On review of endoscopic pictures from the previous hospital that the patient had visited, a polypoid mass with ulceration was found in the gastric antrum, and the gastric mass was covered with erythematous gastric mucosa (Fig. 1A). Submucosal hemorrhages were noted in the adjacent gastric mucosa. Fifty-one days after the first endoscopy, the patient underwent endoscopy for the second time. A polypoid mass, which measured 24 mm in diameter, was found on the greater curvature of the stomach (Fig. 1B). Erythema of gastric mucosa that covered the surface of the
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A polypoid mass exhibited improvement and the ulcer previously detected on the mass was nearly healed (Fig. 1B). Adjacent submucosal hemorrhages were almost resolved. Endoscopic ultrasonography (EUS) was performed and it revealed a well-de-marcated, anechoic mass with narrow stalk in the submucosal layer of the stomach (Fig. 1C). No solid component or mural nodule was found within this cystic mass on EUS. Contrast-enhanced computed tomography (CT) was performed, and the

Fig. 1. A 57-year-old man with gastritis cystica polyposa in the unoperated stomach, which was confirmed by an endoscopic mucosal dissection.
A. The initial endoscopic image shows a polypoid mass of 2.4 cm in size with mucosal ulceration and erythema on the mass. Submucosal hemorrhage is shown in the adjacent gastric mucosa.
B. Erythema of gastric mucosa and ulceration on the surface of the polypoid mass are improved on the follow-up endoscopic image.
C. EUS image shows a unilocular, cystic mass in the submucosal layer without any solid component. The mass has a narrow stalk (arrows).
D, E. The axial (D) and coronal (E) images of contrast-enhanced CT show a polypoid, cystic mass (arrows) with a well-defined margin on the greater curvature of the stomach. Intact gastric mucosa is seen overlying the mass.
F. The gross specimen shows a polypoid mass with a submucosal stroma measuring 2 × 1.8 × 2.5 cm. Cross-sectioning of the specimen reveals a unilocular cyst with a background of pale brown mucoid submucosal stroma.
G. On microscopic examination, there is a large submucosal cyst (arrowheads) lined with gastric epithelium. Some elongated gastric glands (arrows) penetrate the muscularis mucosa (Hematoxylin-Eosin stain, × 12.5).
Note.—EUS = endoscopic ultrasonography
mass appeared to be a polypoid, cystic mass with a well-defined margin on the greater curvature of the stomach on CT (Fig. 1D, E). There was no enhancing portion within the mass. Neither perigastric infiltration nor lymphadenopathy was found around the mass. The cystic mass was considered to be a submucosal lesion of benign nature, through EUS and CT. Lesions of benign cystic nature in gastric submucosa were considered for the differential diagnoses, such as duplication cyst, cystic lymphangioma, and pseudocyst originating from the heteropic pancreas. In addition, we included gastrointestinal stromal tumor (GIST) or schwannoma, with cystic degeneration as tumorous conditions, as another possible differential diagnoses. Endoscopic submucosal dissection (ESD) was done, and the cystic mass was completely excised. Observed as a gross specimen, the lesion was soft with pale-brown color and its dimensions measured were 2 × 1.8 × 2.5 cm (Fig. 1F). The mass was located in the submucosal layer and an empty space was observed within the mass (Fig. 1F). Upon microscopic examination, the mass was a large submucosal cyst, lined with the gastric surface epithelium. The large submucosal cyst did not have any smooth muscle, which is needed for the diagnosis of duplication cyst. Separated from the submucosal cyst, some elongated gastric glands penetrated the muscularis mucosa (Fig. 1G). With the above observations, the cystic mass and elongated gastric glands can be conclusively diagnosed as gastritis cystica polyposa.

**DISCUSSION**

Gastritis cystica polyposa is a rare polypoid lesion, which usually occurs at the gastroenterostomy site (2, 3). It was first described by Littler and Gleibermann (6) in 1972. Several synonyms have been used, such as multiple polypoid cystic gastritis, gastric cystic polyposis, stomal polypoid hypertrophic gastritis, and gastritis cystica profunda (3, 7). Histologically, it is characterized by the elongation of the gastric foveolae with hyperplasia and cystic dilatation of the gastric glands extending into the gastric submucosal layer (1). GCP is most frequently seen on the gastric side of the anastomosis (2, 3). The pathogenesis of GCP is thought to occur as the epithelial elements, after surgery, migrate into the submucosa by increased mucosal mobility and by chronic mucosal damage due to bile reflux (7). However, some literature recently reported cases of GCP developing in patients with no surgical history (2, 4, 7). To date, fewer than 10 cases have been reported, which developed in patients without a prior history of stomach surgery (2, 4, 5, 7, 8). The pathogenesis of GCP development in the unoperated stomach is thought to be caused by chronic ischemia and inflammation. Despite of various pathogenesis suggested for both the operated and the unoperated stomachs, the actual pathogenesis of GCP is not fully understood.

In most cases, GCP is incidentally found by endoscopy or CT. GCP can appear to mimic a giant gastric fold, submucosal tumor, or isolated polyp on endoscopy. GCP usually appears as a well-defined, polypoid mass in the submucosal layer endoscopically and radiologically (1). There are only a few reports describing the imaging findings of GCP in the past literature (1, 2). In 1994, Wu et al. (2) reported CT findings of GCP, a homogenously enhancing polypoid lesion or heterogeneously-enhancing wall thickening, with or without small cystic components. Park et al. (7) reported a GCP case that revealed a multilocular cystic mass with a thick peripheral wall on CT. In our case, GCP was a well-defined, cystic mass without any internal solid portion observed in the submucosal layer on CT and EUS. GCP reported by Tomizuka et al. (9) was similar to our case in regard to cystic mass, but was dissimilar in that it had lobulated contours and uneven wall. Our case was also different from the case described by Wu et al. (2) because the mass in our case had no enhancing solid portion. CT and EUS can demonstrate the morphologic appearance of a gastric mass lesion and reveal the cystic character of the lesion in the case of GCP (7); however, such findings are not specific for GCP. It is difficult to differentiate GCP from the other cystic lesions of the stomach because of a substantial overlap of radiologic findings among them. Many cystic lesions of benign nature can arise from the stomach, including duplication cyst, cystic lymphangioma, heterotopic pancreas, or gastritis cystica polyposa (1). Solid tumors, such as schwannoma or GIST with cystic change and mucinous adenocarcinoma, originating from the stomach can also mimic a GCP (1). It is occasionally difficult to differentiate GCP from gastric cancer. There are some reports describing the association of GCP with early or small cancerous lesions (5, 7, 8). One of the difficulties is that it is still not clear whether GCP is a precancerous lesion or not. However, if GCP is confirmed histologically, complete excision
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is necessary (5). When GCP has no malignant portions, ESD is the proper management method in comparison to wedge resection or more extensive gastrectomy (7). The extent of surgery depends on each individual case.

This case was an unusual GCP that developed in the unoperated stomach. GCP in this case appeared as a polypoid, cystic mass with overlying gastric mucosa on EUS and CT. GCP would be considered as a possible differential diagnosis for a cystic mass of the stomach.

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