

CASE REPORT

# Gastric duplication cyst: a rare entity

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## Abstract

Gastric duplication cysts are an uncommon finding, especially in the adult population. Presenting symptoms can be non-specific, but can include abdominal pain, nausea and emesis. In this report, we present a 28-year-old female diagnosed with a communicating gastric cyst with both gastric and duodenal mucosa, along with pancreatic tissue and no evidence of dysplasia or malignancy. The clinical picture, diagnosis and treatment are described and compared to findings in the literature.

## INTRODUCTION

A gastrointestinal duplication is defined as a spherical structure, with a muscular coat lined by a mucous membrane [1]. They can be found anywhere in the gastrointestinal tract, from the base of the tongue to the anus, most commonly occurring in the ileum (35%). Gastric duplication cysts are a rare phenomenon and account for only 2–9% of all gastrointestinal duplications [1]. The majority is circular, non-communicating and surrounded by a smooth muscular coat. They can be found anywhere in the stomach, with the majority being located on the greater curvature. Gastric duplication cysts are rarely diagnosed in the adult population and occur more commonly in young children, who may present with symptoms of abdominal pain, gastric outlet obstruction or a palpable abdominal mass [2, 3]. Clinically important ectopic tissues can include gastric, duodenal and pancreatic tissues, as demonstrated in our case report.

## CASE PRESENTATION

A 28-year-old female presented to our clinic with a 4-month history of right upper quadrant and epigastric pain exacerbated by food. The patient also reported increased postprandial fullness followed by multiple episodes of nausea and emesis. Physical examination, routine blood tests and plain chest radiographs were unremarkable. A computerized tomography (CT)



Figure 1: An abdominal CT scan demonstrating a cystic mass within the stomach (black arrow)

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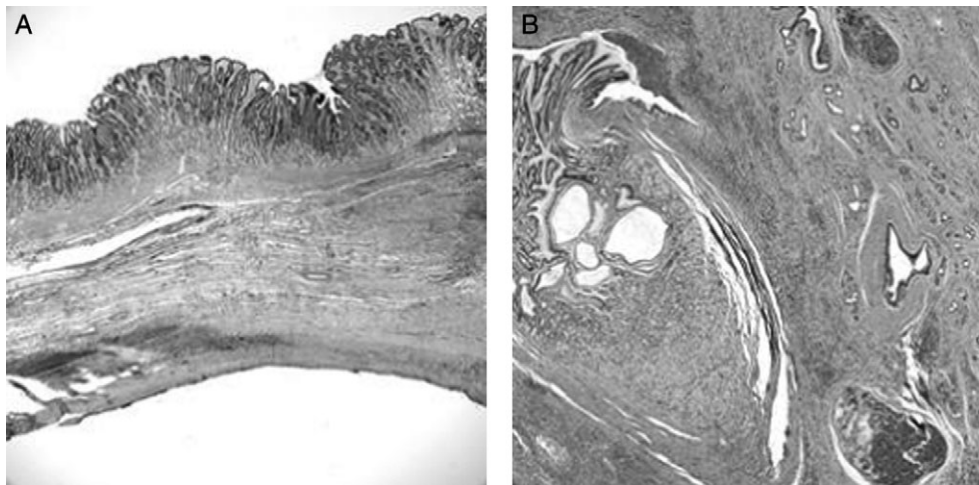


Figure 2: Histological section showing both gastric and duodenal tissues located within the cyst (A), along with pancreatic tissue (B)

scan of the abdomen and pelvis showed a large cystic mass within the antrum of the stomach (Fig. 1). This was confirmed with an esophagogastroduodenoscopy; however, there was concern that this mass was extending past the pylorus into the duodenum, causing a gastric outlet obstruction. The remaining mucosa of the stomach appeared normal. A decision was made to proceed with surgery.

The patient underwent an exploratory laparotomy. The mass was contained within the gastric antrum and did not involve other visceral or solid organs. A distal gastrectomy was performed. Pathologic evaluation at this time determined no cystic progression distal to the pylorus. Reconstruction consisting of a roux-en-Y retrocolic gastrojejunostomy was completed.

Histopathologic examination of the lesion demonstrated a 6-cm cyst with gastric mucosa and well-developed pancreatic tissue, including acinar and ductal elements (Fig. 2). The cyst lumen was focally lined by duodenal type mucosa and was negative for dysplasia or malignancy.

## DISCUSSION

Duplication of the gastrointestinal tract is a rare congenital anomaly. The stomach accounts for 2–9% of all duplications diagnosed, which is the least common site followed by esophagus colon and ileum [1]. Most cases will occur in females compared to males (8:1), with the majority of cases being diagnosed in the pediatric population within the first 3 months of life and rarely after 12 years of age [2, 3]. Preoperative workup can include abdominal ultrasound, CT scan, magnetic resonance imaging and more recently endoscopic ultrasound [4, 5]. Although gastric duplication cysts are a rare entity, they can present with a multitude of symptoms.

Adult patients can present with abdominal pain, nausea, vomiting, dysphagia, dyspepsia, abdominal distention and potentially anemia [6]. Weight loss can also occur secondarily to abdominal pain and distention as seen in our patient. A very small subset of patients can remain asymptomatic. Hemorrhage, perforation, malignancy or complete gastric outlet obstruction can occur based on location or type of ectopic tissue present.

Although gastric duplication cysts can be found anywhere in the stomach, the most common location is the distal greater curvature. They may communicate with the gastric lumen as described in our case; however, the majority is non-communicating with a cystic configuration [1, 7]. Another

distinctive feature is that any type of gastrointestinal mucosa can line the cyst. Both gastric and pancreatic ectopic tissues can be seen, which are the most common and tend to be the most clinically significant, as patients can develop complications, such as bleeding, peptic ulcer disease or pancreatitis [8]. Even more rare are complex duplications, which can present with gastric mucosa and islands of heterotopic tissues such as respiratory, duodenal and pancreatic tissue [9].

Multiple treatment modalities have been reported in the literature including enucleation, formation of cystgastrostomy and even endoscopic removal. The mainstay of treatment is surgical excision of the cyst [2]. Complete excision is recommended not only for symptomatic relief as seen with a gastric outlet obstruction, but also because of the risk of malignant degeneration. Though rarely reported, there have been at least 14 cases of adenocarcinoma diagnosed in gastric duplication cysts after resection in the English literature [10]. If malignant transformation is suspected, surgical resection is the treatment of choice.

Gastric duplication cysts are a rare entity, which can contain various heterotopic tissues, such as duodenal or pancreatic islands. Surgical excision should be performed in patients who can tolerate surgery when the cyst is symptomatic or the risk of malignant degeneration is of concern. Gastric duplication cysts should be contained in the list of differentials when evaluating submucosal gastric masses.

## CONFLICT OF INTEREST STATEMENT

None declared.

## DISCLOSURE INFORMATION

Nothing to disclose. Verbal and written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the editor of this journal.

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