

## Case Report

# Bronchogenic cyst in the hepatogastric ligament masquerading as an esophageal mesenchymal tumor: a case report

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**Abstract:** Lesions occur in hepatogastric gap is common, but most of these lesions are from stomach, lower esophagus and pancreas lesions extending or transferring to the gap. Lesions occurred in the hepatogastric ligament are rare, especially bronchogenic cysts in the hepatogastric ligament. So far, there were no relevant cases reported. Here, we report a case of bronchogenic cyst in the hepatogastric ligament that masquerading as an esophageal mesenchymal tumor. A 24-year-old young man presented with abdominal bloating was diagnosed as esophageal mesenchymal tumor in previous hospital by gastroscopy, endoscopic ultrasonography (EUS) and computed tomography (CT) examination. For the sake of endoscopic submucosal dissection (ESD), the man was transferred to our hospital. During surgery, we found no lesions in lower esophagus, but external pressure ridge lesions in the distal esophagus right side wall. Then laparoscopic surgery and pathology confirmed as bronchogenic cyst in the hepatogastric ligament. We report what is, to the best of our knowledge, the first case of a bronchogenic cyst in the hepatogastric ligament masquerading as an esophageal mesenchymal tumor.

**Keywords:** Hepatogastric ligament, bronchogenic cyst, esophageal mesenchymal tumor

## Introduction

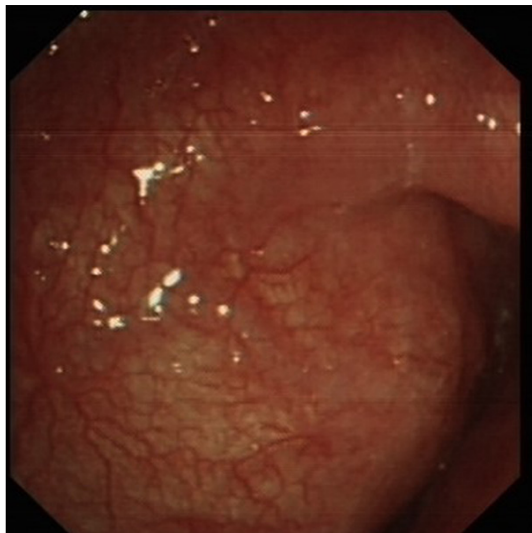
Lesions occur in hepatogastric gap is common, but cases reported are from stomach, lower esophagus, and pancreas tumor metastasis [1-3]. Lesions occur in the hepatogastric ligament are rare, especially bronchogenic cysts in the hepatogastric ligament. So far, there are no relevant cases reported. Anatomically, hepatogastric ligament is the ligament that connects the liver and stomach, containing the left gastric artery, vein and liver and stomach lymph nodes. It is also a direct path of gastric invasion to left lobe of the liver, lesions could occur in any component of the ligament, but up to now, there are no cases reported. Here, we report a case of bronchogenic cyst in the hepatogastric ligament that masquerading as an esophageal mesenchymal tumor, and laparoscopic surgery and pathology confirmed as bronchogenic cyst finally. Bronchogenic cysts are benign cystic congenital aberrations resulting from an abnor-

mal budding of the tracheobronchial tree between 26 and 40 days of embryogenesis. They are usually discovered in the thorax, especially in the mediastinum. Rarely, they can develop below the diaphragm, and a retroperitoneal position is exceptionally unusual [4]. Since now, cases reported about bronchogenic cyst in retroperitoneal are limited, especially for bronchogenic cysts that occurred in the hepatogastric ligament, up to now, there are no cases reported, here we report the first case of a bronchogenic cyst in the hepatogastric ligament.

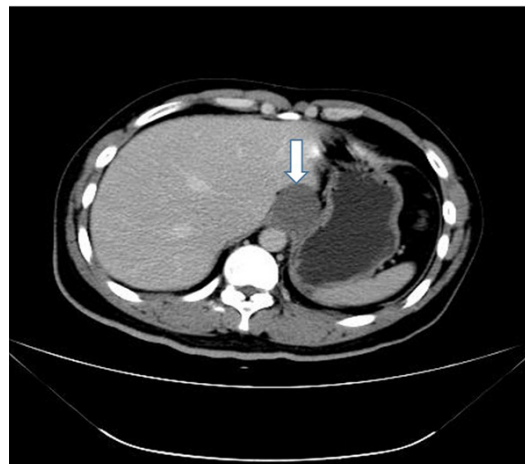
## Case presentation

A 24-year-old young man presented reporting several weeks of abdominal distention was diagnosed as esophageal mesenchymal tumor in previous hospital. Gastroscopy showed a protruding mass that measured 3.8×2.9 cm in diameter and was located 38 cm from the upper incisors (**Figure 1**). The surface mucosa of the lesion was slightly smoothly. EUS demon-

## Bronchogenic cyst in the hepatogastric ligament



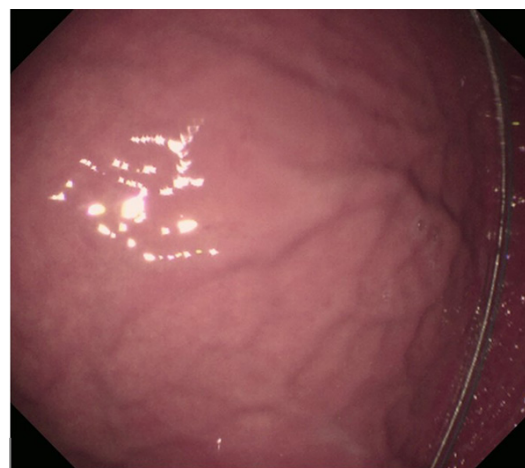
**Figure 1.** Gastroscopy showed a protruding mass that measured 3.8×2.9 cm in diameter and was located 38 cm from the upper incisors.



**Figure 3.** Computed tomography revealed a mass that measured in diameter of about 3.8\*2.6 cm between the liver and stomach, with unclear boundaries near the esophagus.



**Figure 2.** EUS demonstrated a hypoechoic and homogeneous lesion that originated from the muscularis mucosa (MM) below the epithelial layer.



**Figure 4.** Gastroscopy showed external pressure ridge lesions in the distal esophagus right side wall.

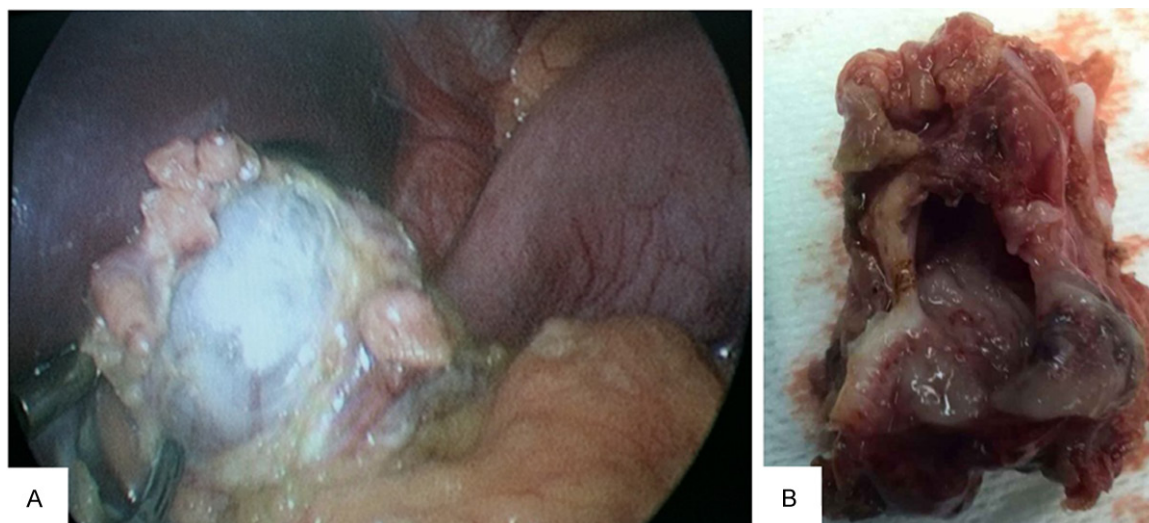
strated a hypoechoic and homogeneous lesion that originated from the muscularis mucosa (MM) below the epithelial layer, with the size of about 3.8 cm\*2.9 cm, growing in cavity and external cavity (**Figure 2**). Computed tomography revealed a mass that measured in diameter of about 3.8\*2.6 cm between the liver and stomach, with unclear boundaries near the esophagus (**Figure 3**). Then the man was transferred to our hospital for ESD. During ESD, we found no lesions in lower esophagus, but external pressure ridge lesions in the distal esophagus right side wall (**Figure 4**). At laparoscopy, a thick-walled cystic mass was seen in the hepa-

togastric ligament, which was closed to the cardia and proximal lesser curvature, the mass was completely removed at the base and wedge of the stomach wall, and the cyst fluid leaked out when in operation (**Figure 5**). Pathology confirmed bronchogenic cyst (**Figure 6**).

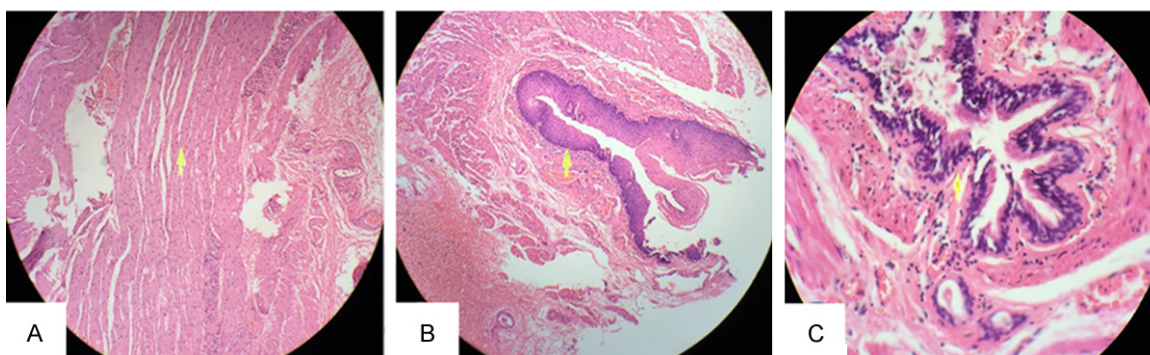
### Discussion

Lesions occur in hepatogastric gap are common, but most of these lesions are from stomach, lower esophagus and pancreas lesions extending or transferring to the gap, especially for pancreatic cysts, abscess caused by contusion gauze residual after biliary tract and stom-

## Bronchogenic cyst in the hepatogastric ligament



**Figure 5.** (A) Laparoscopy operative photograph showed a thick-walled cystic mass in the Hepatogastric ligament (A) and a gross specimen of a thick-walled cyst, with cyst fluid outflow (B).



**Figure 6.** Pathology showed the mass containing smooth muscle cells (A), squamous epithelial cells (B) and was lined by pseudostratified ciliated columnar epithelium (C).

ach surgery, exogenous esophageal mesenchymal tumors and so on [1-3]. Lesions occur in the hepatogastric ligament are rare, especially for bronchogenic cysts, so far, there are no relevant cases reported. Bronchogenic cysts are an unusual type of congenital lesion that often occur in the mediastinum, are less common in the lung parenchyma, pleura and diaphragm [5], and are rare in the retroperitoneal space [6]. Bronchogenic cysts located in retroperitoneal are named as retroperitoneal bronchogenic cysts (RBCs), and which are regarded as a rare type of congenital dysplasia disease that stems from the primitive foregut. Thus far, the exact pathogenesis of RBCs remains unknown [7]. Furthermore, patients with an RBC commonly lack characteristic symptoms and do not demonstrate signs of the disease until the

development of a secondary infection or perforated cysts, or until the cysts become large enough to compress the adjacent organs [8]. Due to an atypical clinical manifestation, RBCs are often incidentally detected and diagnosed by imaging modalities, such as computed tomography and magnetic resonance imaging. However, they are easily misdiagnosed as teratomas, pseudomyxoma peritonei, lymphocoeles, hemorrhagic cysts, or neoplasms derived from the pancreas, adrenal system or urinary system due to their non-specific imaging features [9]. Surgical resection is the only therapeutic strategy currently used for the treatment of patients with RBCs [10-13]. In the case we reported, the cyst masqueraded as an esophageal mesenchymal tumor, which indicated us that there are still some difficulties for

## Bronchogenic cyst in the hepatogastric ligament

the diagnosis of this type of cysts, especially the cysts occur in the hepatogastric ligament. And due to its anatomical location factors, their discrimination with esophagus mesenchymal, exogenous hepatocellular carcinoma and omental sac neurogenic tumors are essential. By hepatocellular carcinoma liver exogenous clinical manifestations, laboratory examination, clinical symptoms and signs, fast-forward and rewind during enhanced CT scan, it is not difficult to diagnose [14]. And gastric stromal tumors are derived from mesenchymal tissue [15], but because of defections of gastroscopy, EUS and CT, lesions in lower esophagus are generally difficult to discriminate, especially when the cyst develop adjacent to lower esophagus. The omentum sac neurogenic tumors are a subtype of schwannomas [16, 17], located in the deep structure, such as after mediastinum, retroperitoneal and pelvic, because of the lack of typical clinical manifestations and imaging characteristics, are also easily been misdiagnosed. In short, bronchogenic cysts in the hepatogastric ligament is clinical rare cases, so far, there are no cases reported. Here, we report a case of bronchogenic cyst in the hepatogastric ligament, and the lesion was masquerading as a esophageal mesenchymal tumor, which indicated us that there are still some difficulties for the diagnosis of bronchogenic cysts, especially when the cysts occur in the hepatogastric ligament, more and more research and cases are needed to further identify the incidence, clinical manifestations and imaging characteristics and treatment of cysts that occurred in the hepatogastric ligament.

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### Disclosure of conflict of interest

None.

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