Case Report

A Rare Case of Gastroenteric Cyst Across the Chest and Abdomen Through the Left Diaphragm

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Received: 15 March, 2019; Accepted: 01 July, 2019; Published: 30 July, 2019

Abstract

The gastroenteric cyst is a rare developmental malformation, especially in the adult population. Majority of the cysts are located in the posterior mediastinum with right side more common than the left side. Usually, the lesions are identified in infancy and without symptoms. In this report, we present a rare case with two remarkable features. First, the cyst was across the chest and abdomen through the left diaphragm. Second, the patient was 46 years of age at the time of detection with upper abdominal pain. The clinical manifestations, diagnosis, and management are described and compared to findings in the literature.

Keywords: Gastroenteric cyst; Across the chest and abdomen; Calcification

Introduction

Gastroenteric cyst is a rare developmental cyst. There have been reported cases of the disease as early as 70 years ago with only 27 published reports in the literature thus far. The majority of the cases are asymptomatic and identified in infancy. Histologically, gastroenteric cysts are derived from gastrointestinal epithelial cells [1-3] and rarely contain other tissues, such as pancreatic tissue or respiratory epithelial cells [2,4]. The cysts are usually located in the posterior mediastinum, with right side more common than the left side [2]. To our knowledge, this is the first case of the gastroenteric cyst across the chest and abdomen through the diaphragm reported in the English literature.

Case presentation

A 46-year-old man presented to our hospital with the history of experiencing severe upper abdominal pain for six days. The patient did not complain of metastatic pain, abdominal distension, diarrhea, nausea and vomiting, and fever.

He had no other pertinent medical history.

On physical examination, he was afebrile and had normal respiratory, cardiovascular and abdominal examinations. Chest and abdominal enhancement computerized tomography (CT) imaging showed there was a cystic mass, with size 8.2 × 5.3 × 4.4 cm, across the chest and abdomen through the left diaphragm. The upper pole was at the level of the inferior vena cava into the right atrium; the lower pole reached the upper edge of the celiac trunk. There was a suspected pedicle connecting the lower pole and the descending aorta. About 1/3 of the cyst body was in the chest, while 2/3 in the abdomen (Figure 1). The cyst was close to the descending aorta and diaphragm. The left diaphragm appeared non-continuous. There were several circular calcified lesions in the cyst. Enhanced CT scan showed visible enhancement in the cyst wall.

No abnormal findings were found in pertinent preoperative laboratory evaluation.

For a definitive diagnosis, the patient underwent an exploratory laparotomy via the abdominal midline incision. After the gastrocolic ligament and posterior parietal peritoneum were cut, a visible mass was located between
Discussion

Gastroenteric cysts are benign lesions caused by congenital dysplasia, mostly located in the posterior mediastinum of thoracic cavity [1-3]. In our patient, the observation in operation was consistent with the findings from the preoperative CT scan that the gastroenteric cyst crossed the chest and abdomen through the left diaphragm. To our knowledge, this is the first case reported in the English literature in the world.

Although preoperative imaging can provide morphological description and location, the definitive diagnosis of gastroenteric cysts depends on postoperative pathological examination. In our case, besides the common pathological feature gastrointestinal type mucosa—calcification was found in the wall and within the cyst, a rare lesion in gastroenteric cysts.

Majority of the gastroenteric cyst cases are asymptomatic and usually identified in infancy. The presence or absence of clinical symptoms is related to the location and size of the cyst and the degree of compression on surrounding organs. Compression of the cyst on esophagus causes dysphagia, while compression on nerves causes pain. Reisli et al. reported a patient with funnel chest complicated with massive mediastinal gastrointestinal cyst, which compressed the thoracic duct [3]. This is an adult patient with 46 years of age at the time of detection. He experienced upper abdominal pain, which may be due to adhesion to the diaphragm.

On histologic examination, it was revealed that the cyst lumen was lined with gastrointestinal mucosa (Figure 2). The wall of the cyst had calcifications. Dysplastic or malignant lesions were not found. Based on these findings, the lesion was definitively diagnosed as a gastroenteric cyst. The patient recovered well and was discharged from the hospital.
Due to the possibility of malignant transformation of the lesion [5], surgical excision of gastrointestinal cysts is the best approach. Once completely removed, it seldom relapses. Surgery for gastroenteric cysts located in the thorax is easy to be performed usually. In our case, the cyst crossed the chest and abdomen through the left diaphragm with 2/3 located in the abdomen. Therefore, we selected the middle incision of the upper abdomen for the surgical approach. The cyst was adjacent to the vital organs, including the thoracic aorta, the left adrenal gland, and the left diaphragm. Furthermore, the cyst was tightly adhered to the adjacent organs, with a pedicle cord between the lower pole and the descending aorta, consistent with the finding from the CT scan. Thus, the surgery was challenging. In this case, the gastroenteric cyst was excised entirely, and the diaphragm was repaired carefully. The postoperative recovery was well, and the patient was discharged successfully. We followed up the patient regularly. No early and long-term complications were observed.

In summary, we reported the first case, to our knowledge, of a patient presenting with a congenital gastroenteric cyst across the chest and abdomen through the left diaphragm. Complete excision was successfully performed in this case despite the complex anatomical structure.

References