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Case report

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Gastropericardial fistula: a case report

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ABSTRACT

Rationale: Gastropericardial fistula is a rare condition in which the patient presented with chest pain, dyspnea, tachycardia, pneumo/hydropericardium, or pericarditis. Alcohol intake or previous history of gastroesophageal surgery made the patient susceptible to fistula formation.
Patient concerns: An 80-year-old male complained of sudden onset of dyspnea and respiratory distress. Nausea, hematemesis, and constipation were noted on clinical examination.
Diagnosis: Herniation of the gastric fundus and massive pneumopericardium due to formation of fistula in the lesser curvature.
Interventions: Urgent surgery was performed.
Outcomes: The patient was discharged without any complication.
Lessons: Although the lethal form of this condition is rare, gastroepicardial fistula should be included in the differential diagnosis workup of cases with stomach cardia and fundus ulceration.

1. Introduction

Gastroepicardial fistula is an abnormal connection between pericardial space and stomach. It can be caused by a gastroesophageal surgery, ulcers in gastric wall or neoplasia. Agents like alcohol and nonsteroidal anti-inflammatory drugs are factors that lead to ulcer formation after fundoplication surgery. In this rare condition, patients usually have acute onset of chest pain, breathlessness, tachycardia, and signs of pneumopericardium, pericarditis, and cardiac tamponade[1-4]. Regardless of varied presentations, imaging modalities are beneficial for early diagnosis and management of the disease[5]. In this report, we presented a gastropericardial fistula in an old man without prior history of surgery. The fistula was diagnosed by imaging measures and surgery was planned for correction of the defect.

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2. Case report

The case was reported after receiving informed consent from the patient. An 80-year-old male with a ten-year history of hypertension presented with sudden onset dyspnea and respiratory distress. Nausea, hematemesis, and constipation were noted on clinical examination. He didn't complain of any respiratory or gastric disease, but he presented a history of trauma due to an accident 20 years ago. On arrival, the patient had a blood pressure crisis at 160/100 mm Hg (range 120/80 mm Hg) which was resistant to the treatment. Contrast chest radiography demonstrated the pneumopericardium (Figure 1A). Computed tomography (CT

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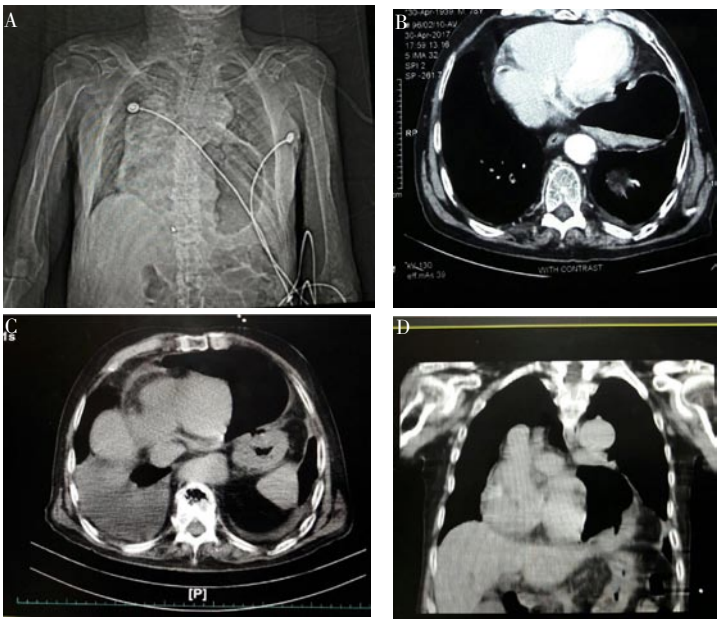

Figure 1. Contrast radiography and CT scan of the patient. A: Chest radiography showing massive pneumopericardium; B: Early chest CT scan showing a gastric ulcer on the lesser curvature near the pericardium (2 months before onset of signs and symptoms); C: Chest CT scan, axial view, showing gastropericardial fistula with massive pneumopericardium. Note the shifting of the heart and mediastinum to the right ; D: Coronal view of chest CT showing paraesophageal hernia of the gastric fundus.

scan) of two months ago showed a diaphragmatic hernia with herniation of the gastric fundus and a penetrating ulcer near the pericardium (Figure 1B). Further CT scan revealed a paraesophageal hernia of fundus with gastropericardial fistula and massive pneumopericardium which resulted in a contralateral shifting of the heart and mediastinum (Figure 1C). Bilateral pleural effusion with the right side dominated, and collapse consolidation in the left lung were noted (Figure 1D).

Thus, the patient was candidate for urgent surgery and was referred to a consultant cardiac surgeon. In the operation room, under general anesthesia and sterile condition, the abdomen and thorax were opened with laparotomy and distal median sternotomy incision. By the opening of the chest, there was a remarkable massive purulent pericarditis with gastropericardial fistula. Herniation of necrotic fundus was also noted. Pericardial fluid and abscess were removed. Proximal gastrectomy with the abolition of the fistula and reduction of the stomach into the abdomen were performed. Finally the pericardium was closed and the hernia was repaired. The sternum and abdominal wall were closed properly. The patient was mechanically ventilated and transferred to the intensive care unit. Without eating after surgery, the patient remained on antibiotics for 48 h. This course was uneventful and the patient was discharged on post-operative day 12.

3. Discussion

Despite the fact that most patients with gastropericardial fistula have a history of gastric or esophageal surgery, our patient didn't report any history of surgery. The fistula may associated with various signs, including dyspnea or chest pain, but the combination of these signs with pneumopericardium or hydropneumopericardium should raise the suspicion for gastropericardial fistula[6]. Factors like tolerance to H2-antagonists, long-term use of non-steroidal anti-inflammatory drugs or anticoagulants, and persistence of Helicobacter pylori infection that are related to poor healing of peptic ulcers can promote the disease[2]. In most cases, pneumopericardium is diagnosed with chest radiography. But, contrast radiography has been proved efficient in the cases of hiatal or other types of diaphragmatic hernia. CT scan is useful when the etiology of the pneumopericardium is unknown. Thickening of pericardium due to pericarditis, tear-drop shaped tapering gas pointing toward the heart, and air or fluid filled fistulous tract are notable investigations of CT scan. Gastroscopy as a valuable tool can be used with CT to identify the exact location of fistulous tract, especially when the tract is not detected with CT. The beating heart may be seen through the crater of the ulcer. By using this method, biopsies can be taken from the tissue to rule out the presence of cancer[6-8]. Symptoms of atypical chest pain, hemorrhage, GI obstruction, or shoulder tip pain may be related to fistula formation, especially in patients who have had previous esophagogastric or diaphragmatic surgery. Drainage of the fluid alone may not be sufficient and further interventions, including esophagectomy, gastrectomy, redo fundoplication, and placement of pericardial flap may be required [9].

Conflict of interest statement

The authors report no conflict of interest.

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