Mixed-type hiatal hernia mimicking pulmonary cystic lesion
Published on 01.12.2002

DOI: 10.1594/EURORAD/CASE.1975
ISSN: 1563-4086
Section: Chest imaging
Imaging Technique: CT
Case Type: Clinical Cases
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Patient: 60 years, female

Clinical History:
The patient presented with an intermittent history of chest/epigastric pain, shortness of breath, and nausea/vomiting during or shortly after meals.

Imaging Findings:
The patient presented with an intermittent history of chest/epigastric pain, shortness of breath, and nausea/vomiting during or shortly after meals. All biochemical laboratory study results were negative, and physical examination findings were unremarkable. Abdominal ultrasonography (not shown) and posteroanterior chest radiography (Fig. 1) were performed for evaluation of the thorax. Radiography revealed a smoothly margined cystic lesion and an irregular mass at the bottom of the cyst in the left paracardiac area. The mass extended from the mediastinal area to the left paracardiac area.
Computed tomography (CT) of the thorax was subsequently performed, and this essentially confirmed the radiographic findings. CT showed a 5cm x 6cm x 6cm cystic mass and a closely related 4cm x 4cm x 4cm solid mass in the left posterior mediastinum (Figs 2a-c).

Hiatus hernia produces a mass of soft-tissue density with an eccentric junction with the hernia fundus segment. There is a 180° mesentero-axial rotation of a large portion of stomach, so that the great curvature is upward, within the posterior mediastinum. There are numerous coarse thick gastric folds within the suprahiatal pouch and an increase in fat surrounding the distal oesophagus. The oesophagogastric junction is above the diaphragm.

The patient refused surgery.

Discussion:
Hiatus hernias are divided into three types:

1. An axial hernia (sliding) exists when a loculus of stomach and the gastric cardia pass through the hiatus into the thorax.
2. A paraoesophageal hernia exists when a portion of the stomach herniates through the hiatus but the cardia remains normally located.
3. Occasionally a hiatus hernia is demonstrated with both sliding and paraoesophageal components, giving rise to the term mixed hiatus hernia (1).

About 99% of hiatus hernias are axial. Only about 1% are paraoesophageal. Hiatus hernia indicates stretching or rupture of the phrenicooesophageal membranes (2). Aetiology is uncertain. They are rarely seen and may be associated with previous trauma. Although a congenital weakness of the oesophageal hiatus may be partly
responsible for the development of hiatus hernia, there is little doubt that acquired factors play a significant role, the most important being obesity and pregnancy. The prevalence increases with age (3). Because the hernia is related to the oesophageal hiatus, the stomach is by far the most common herniated structure.

Plain radiographs of the chest often show a retrocardiac mass, usually containing air or an air-fluid level. Differential diagnosis of a cystic lesion with an air-fluid level on chest film includes lung abscess, bronchogenic cyst, cystic brochiectasis, oesophageal diverticulum, and hiatal hernia (4). Occasionally large hernias are located predominantly on one side of the hemithorax and mimic a lung abscess cavity on radiography (3).

In cases in which most of the stomach has herniated through the hiatus, the stomach may undergo volvulus within the mediastinum and present as a large mass, sometimes containing a double air-fluid level. This must be differentiated from mediastinal cysts, hydatid cyst with rupture and cystic adenoid malformation. Most mediastinal cysts are of congenital origin and include foregut-duplication cyst (bronchogenic, duplication, and neurenteric cysts), pleuroperticardial cyst and thymic cyst. It must also be differentiated from eventration of the diaphragm and from diaphragmatic hernia (foramen of Bochdalek and Morgagni) (3).

Most patients with oesophageal hiatus hernia do not report symptoms; the abnormality is discovered on a screening chest radiograph or examination of the upper gastrointestinal tract for unrelated complaints. When present, symptoms consist of retrosternal burning and pain, typically occurring after meals and accentuated when the patient lies down. The symptoms are usually chronic because of gastroesophageal reflux or gastric outlet obstruction. The gastroesophageal junction is located high above the oesophageal hiatus (4). The intrathoracic, extrapleural stomach may be dilated or obstructed.

Definitive diagnosis sometimes requires barium study of the oesophagogastric junction or the use of CT (5). Elective repair is offered as the treatment of choice in oesophageal hernia. Surgical techniques include hernia reduction, crural closure, and fundoplication (1).

**Differential Diagnosis List:** Mixed-type hiatal hernia mimicking pulmonary cystic lesion

**Final Diagnosis:** Mixed-type hiatal hernia mimicking pulmonary cystic lesion

**References:**


**Figure 1**

*Description:* PA chest X-ray showing a smoothly marginated cystic lesion and an irregular mass present at the bottom of the cyst in the left paracardiac area. *Origin:*
Description: Mediastinal window, CT slice showing a 5cm x 6cm x 6cm cystic mass and a closely related 4cm x 4cm x 4cm solid mass in the left posterior mediastinum. Origin:
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