

Hiatal Hernia: An Uncommon Presentation of Chest Pain

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Abstract

Chest pain presents a diagnostic challenge with a long list of differential diagnosis. Chest pain due to gastrointestinal causes includes esophagitis, GERD, gastritis, esophageal spasms and rarely pancreatitis, cholecystitis and peptic ulcer disease. Here we present an uncommon cause of chest pain: hiatal hernia (HH). HH can be life threatening if not diagnosed and treated early. This case report reviews the different types of HH with symptoms and signs, diagnosis and therapeutic options.

CASE PRESENTATION

An 81-year-old female presented with complaints of loss of appetite, nausea, vomiting, and constant pain in the chest and epigastric region. She denied any significant past medical history and also denied any recent history of fevers, cough or shortness of breath. Physical examination showed decreased bowel sounds. Patient was admitted to cardiac telemetry to rule out myocardial infarction.

Electrocardiogram (ECG) showed normal sinus rhythm with minimal ST depression in lateral leads. Laboratory tests were unremarkable including serial cardiac enzymes. Chest x-ray revealed a large hiatal hernia (HH) (Figure 1).

Figure 1

Figure 1: Retro cardiac double bubble sign

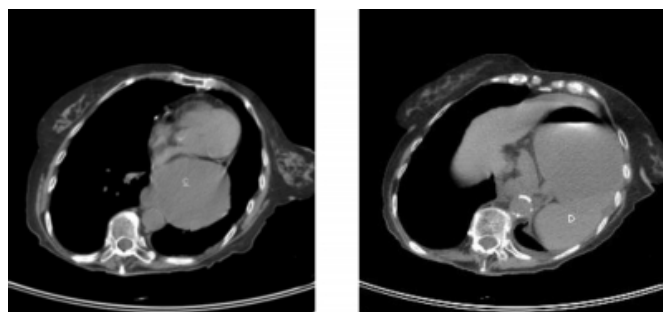


Subsequently, a CT scan of the abdomen with contrast was done which showed marked distention and distortion of the

stomach with herniation of a portion of the stomach into the lower thorax, representing a combination of hernia through the esophageal hiatus and obstruction at the level of the hernia with gastric outlet obstruction (Figure 2).

Figure 2

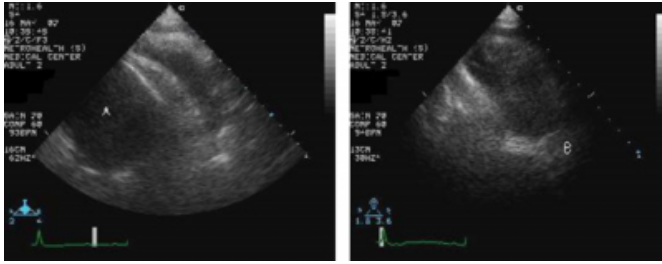
Figure 2: Marked distention and distortion of the stomach with herniation of a portion of the stomach into the lower thorax, representing a combination of hernia through the esophageal hiatus and obstruction at the level of the hernia with gastric outlet obstruction



2D echocardiogram revealed a normal functioning left ventricle with an ejection fraction of 70%. A 6.5 cm fluid filled mass in the thorax, outside and posterior to the heart was noted (Figure 3).

Figure 3

Figure 3: Echocardiographic images showing 6.5 cm fluid filled mass in the thorax, outside and posterior to the heart



Upper gastrointestinal (GI) series showed a mesenteroaxial gastric volvulus along with HH. The patient underwent a laparoscopic repair and a Nissen fundoplication. After an uneventful recovery, patient was discharged home in a stable condition.

DISCUSSION

Hiatal hernias (HH) are incidentally noted on radiographic studies. A single fluid level in an erect chest x-ray or the presence of a retro cardiac “double fluid level” can be suggestive of hiatal hernia or an intrathoracic stomach with organoaxial or mesenteroaxial rotation. Images from an upper gastrointestinal barium series best display the anatomy (2)

There are four main types of HH (1). Type one (95%) HH is called the sliding or axial hernia where the esophageal junction is displaced into the chest because of diffuse weakening and stretching of the phrenicoesophageal membrane (PEM) (1). Type two HH is called the paraesophageal hernia or rolling hernia caused due to a focal defect anterior and lateral aspect of the PEM. Fundus acts as a lead point and along with the stomach, migrates upwards leading to an intrathoracic stomach. The gastric cardia and the esophageal junction remain below the diaphragm (1). Type three is a “mixed” or “compound” HH, combining the features of the type 2 and the type 1 hernias. Herniation is usually large and invariably associated with gastric rotation (1). Type 4 HH is associated with marked widening of the

diaphragmatic hiatus leading to herniation of colon, omentum, small bowel, and liver into the chest (1).

Patients with small paraesophageal hernia are usually asymptomatic. As the disease progresses, food and air may distend the herniated gastric segment, causing discomfort and chest pain that is usually most marked after a meal. They have been implicated in causing cardiac decompensation, dyspnea, postprandial syncope, and electrocardiogram abnormalities. Gastric volvulus, gangrene, perforation and recurrent pneumonia are serious but less common complications (1).

Echocardiograms report them as a posterior mediastinal mass encroaching on the left atrium. Infusion of echocardiographic contrast to exclude a communication between the heart chambers and the mass, or ingestion of a carbonated beverage to demonstrate the hiatal hernia by replacing a portion of the solid-appearing mass with an echo-free space, have been used to differentiate a cardiac from an extra cardiac mass (4)

The treatment of a symptomatic patient is usually an elective laparoscopic approach which is associated with reduced morbidity (3). Reduction of the hernia into the abdomen, excision of the hernia, closure of the large diaphragmatic hiatus, and gastropexy are the general principles of surgical repair (2).

References

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