Case Report

An unusually large paraesophageal hernia mimicking a Bochdalek hernia

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Abstract: Hiatal hernias are due to defects in the esophageal hiatus in the diaphragm and can be classified into sliding or paraesophageal hernias. A 31-year-old male raised a suspicion of a Bochdalek hernia but at surgery had a large paraesophageal hernia. Bochdalek hernia, a congenital diaphragmatic hernia presents in adulthood asymptomatically or with vague abdominal symptoms. It is paramount to confirm the diagnosis and rule out any fatal complications with imaging studies. Prompt surgical management with large complicated hernias, such as in our case presentation would ensure the most favorable outcome.

Keywords: Congenital; paraesophageal hernia; thoracotomy

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Introduction

Large paraesophageal hernias are rare and potentially fatal defects of the esophageal hiatus that can present with non-specific symptoms. We present a case of a 31-year-old male diagnosed intraoperatively with a large right-sided paraesophageal hernia. The patient's presentation and the anatomy of the hernia on computer tomography (CT) were unique, initially raising suspicion of a right-sided Bochdalek hernia.

Case presentation

A 31-year-old male presented to the Emergency Department with acute epigastric pain and shortness of breath on a background of asthma. He had a 2-week history of a burning chest pain with associated vomiting. On examination, he was tachycardic with diminished breath sounds in the right hemi-thorax. Plain chest X-ray (CXR) showed large bowel in the right hemi-thorax (*Figure 1A*) and the CT reported herniation of the entire stomach and omental fat into the right thorax, along with a herniated loop of transverse colon (*Figure 1B,2A*).

A diagnostic video-assisted thoracoscopic surgery (VATS) was performed but had to be converted to a thoracotomy given the patient's habitus and complex nature of the hernia. The right thoracotomy identified a large hernia sac which was mobilized from the lung and chest wall. The sac was opened, adhesions freed to enable reduction of the omentum, stomach and large bowel into the abdominal space. The pleura was tacked over the defect and his chest wall closed with 2 intercostal catheters placed for drainage. An extrapleural catheter was placed for analgesia.

The patient was then positioned supine and a laparoscopic retrocrural diaphragmatic repair was performed. On inspection, the esophageal hiatus was normal and the esophagus was isolated by tape sling. The hernia sac was not excised, instead maintained below the diaphragm. Difficulties ensued in properly delineating the hernia sac which was found between the right crus and pre-aortic retro-peritoneum.

The space posterior to the crura was repaired using simple interrupted sutures. Extubation and post-operative recovery was unremarkable.

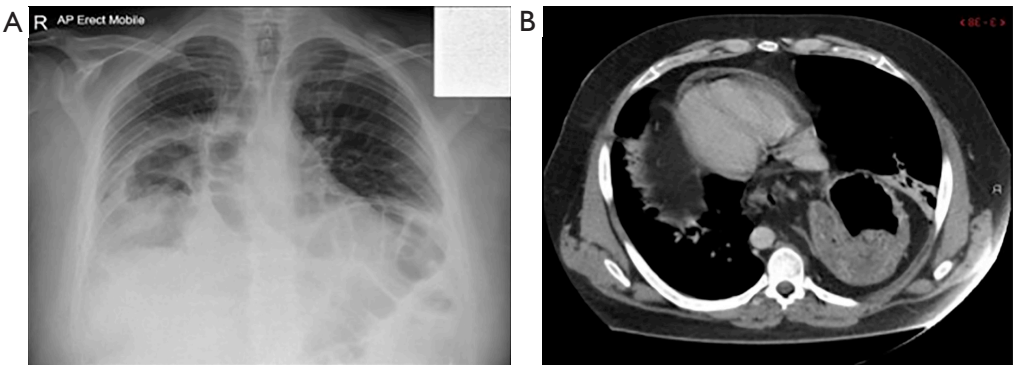

Figure 1 Radiographic imaging prior to surgical repair. (A) Chest X-ray prior to surgery showing loops of bowel in thoracic cavity and right lung compression; (B) axial computed tomography scan showing dilated bowel loops within the hernia sac.

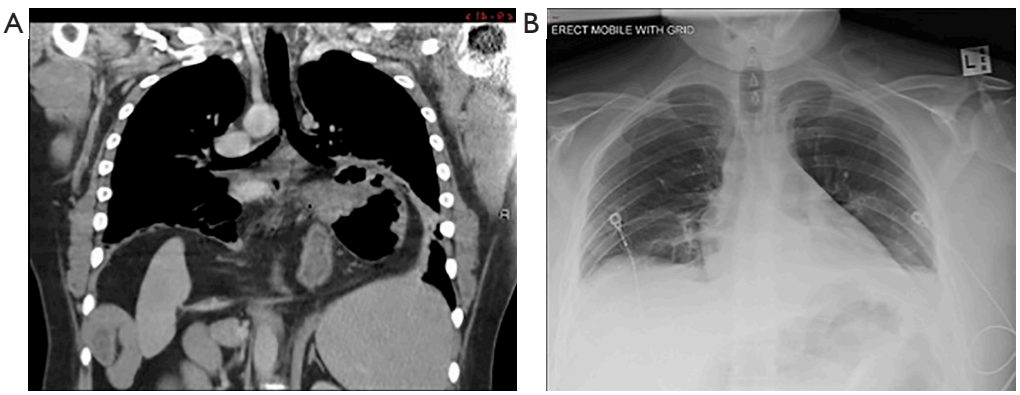

Figure 2 A coronal comparison pre and post hernia repair. (A) Coronal computed tomography scan indicating the size of herniation; (B) chest X-ray post-surgical repair.

Discussion

Hiatus hernias are a protrusion of intra-abdominal contents into the thoracic cavity via a defect in the diaphragmatic hiatus. They are classified into four different subtypes: type I (sliding hiatal hernia) and types II, III, IV which refer to paraesophageal hernias of increasing severity (1).

In type 1 hernias, the gastroesophageal junction (GOJ) moves into the posterior mediastinum via the esophageal hiatus without forming a hernia sac (1). Conversely, there is an upward dislocation of the gastric fundus into the thoracic cavity alongside a normally positioned GOJ in types II–IV. Type IV hernias are characterized by a large defect that causes herniation of the stomach and other intra-abdominal organs such as colon, small bowel, spleen or pancreas (2). Paraesophageal hernias can become complicated with intrathoracic incarceration of abdominal organs, perforation and gastric volvulus (3). These hernias are rarely asymptomatic; causing dysphagia, chest pain, reflux and postprandial fullness (2).

The patient remained asymptomatic for a long period of time and presented in acute distress once the hernia sac was large enough to cause partial obstruction of the large bowel and compression of lung. The CT findings suggested a Bochdalek hernia, however given the patient had a previous CXR in the past with a normal diaphragm, it reduced the likelihood of a congenital hernia.

The principal management includes reduction of abdominal contents and repairing the defect to prevent life-threatening complications. Stable patients with no evidence of perforation can be managed laparoscopically. Approach via laparotomy is being superseded by laparoscopy given its favorable outcomes and recovery profiles (2). We opted for a thoracotomy over a laparotomy given the requirement to mobilize and reduce the hernia in the thorax. Surgical repair of paraesophageal hernias often yield good outcomes, with low recurrence rates of 8.6% to 12% (4). *Figure 2B* shows

the CXR post-operatively.

Bochdalek hernias are rare in adulthood presenting either asymptomatically with the hernia being detected incidentally or with vague symptoms such as chest pain, abdominal pain, dyspnea, pleural effusions, postprandial fullness and vomiting. As such, Bochdalek hernias can mimic paraesophageal hernias making accurate identification of the hernia difficult. Typically, these hernias are left-sided, rarely contain a hernia sac and contain fat and omentum. Right-sided Bochdalek hernias containing loops of colon are extremely rare, with only 12 cases described worldwide (5).

Conclusions

This is a rare presentation of a large paraesophageal hernia in a male masquerading as a right sided Bochdalek hernia. Timely recognition of these hernias is important to prevent severe complications. Diagnosis is usually made on plain radiography, however, an urgent CT scan is paramount to exclude bowel herniation, strangulation or perforation. Surgical intervention at a specialist center providing access to thoracic and general surgeons is vital to a favorable outcome, minimizing sequelae.

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Informed Consent: Only verbal consent obtained from the patient. The patient was made aware about his condition and that his case would be presented as a case report.

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