

Spontaneous Diaphragmatic Hernia Masquerading Hydropneumothorax

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Abstract

Spontaneous diaphragmatic hernia without any apparent predisposing factor is a very rare condition. We report a case of 28-year-old male who presented with complaints of abdominal pain and gradually increasing breathlessness. Chest radiograph was suggestive of left-sided hydropneumothorax. Diagnosis of diaphragmatic hernia was confirmed by computed tomography. The defect was repaired by open thoracotomy and patient had an uneventful post-operative recovery. [Indian J Chest Dis Allied Sci 2017;59:191-193]

Key words: Diaphragmatic hernia, Chest, Thoracotomy.

Introduction

Diaphragm is the most important muscle of respiration that separates thoracic and abdominal cavities.¹ Diaphragmatic hernia is the herniation of abdominal contents into the thorax through a rent in the diaphragm.² Acquired diaphragmatic hernia most commonly occurs following a blunt or penetrating trauma to the abdomen with former being common than the later. Very rarely diaphragmatic hernia can be spontaneous.² We report a case of spontaneous diaphragmatic hernia in a 24-year-old male with no history of trauma and no other precipitating factor for the development of diaphragmatic hernia.

Case Report

A 24-year-old, non-diabetic, non-hypertensive male presented with complaints of abdominal discomfort and dull abdominal pain since eight months and gradually increasing breathlessness since two months. Pain was dull in nature, moderate in intensity and non-radiating. There was no significant past history. On physical examination, his pulse rate was 100 per minute, blood pressure was 110/74 mmHg and respiratory rate was 20 per minute, a dull percussion note on the left side. On auscultation, breath sounds were diminished in intensity in the left upper chest and were absent in the lower chest. Other systemic examinations including per abdominal examination did not reveal any abnormality. Routine blood investigations were unremarkable. Chest radiograph showed an air fluid level on the left side (Figure 1).

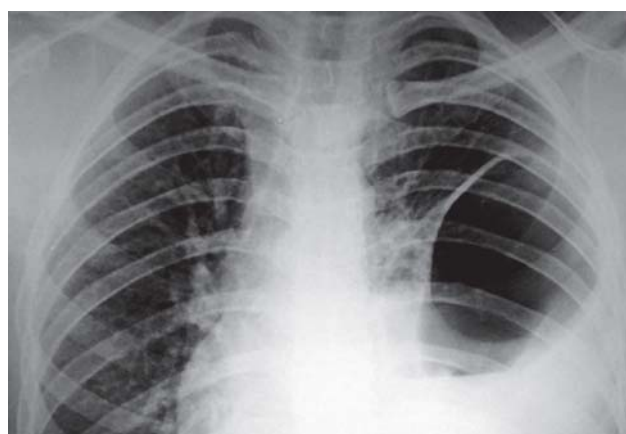


Figure 1. Chest radiograph (postero-anterior view) showing air fluid level on the left side.

Contrast enhanced computed tomography (CECT) of chest was planned with differential diagnosis of loculated hydropneumothorax or diaphragmatic hernia in mind which revealed a large diaphragmatic hernia (Figure 2).

Laparoscopic surgery revealed a 10cm defect with herniation of the gut and spleen (Figure 3). The spleen was adherent to the posterior tip of the defect and could not be mobilised, hence, surgery was converted to an open thoracotomy and the defect was closed successfully (Figure 4). The patient had an uneventful post-operative recovery.

Discussion

Diaphragmatic hernias appear secondary to structure or insertion abnormalities of the diaphragm and are

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Figure 2 (A,B). Contrast enhanced computed tomography of chest (axial sections) showing herniation of abdominal contents into thorax.



Figure 3. Intra-operative picture showing the diaphragmatic defect.

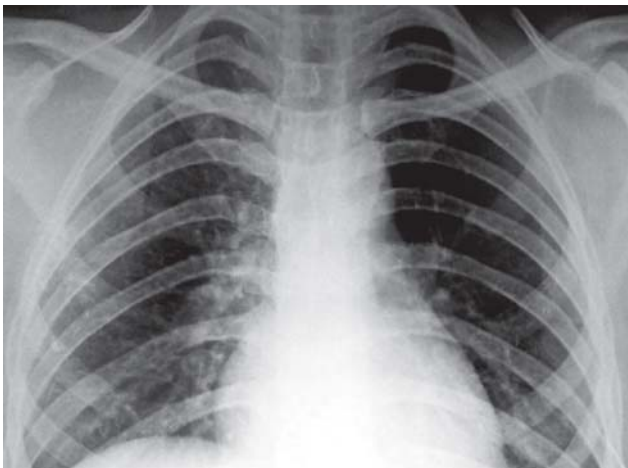


Figure 4. Post-operative chest radiograph (postero-anterior view) showing complete resolution.

divided in two major categories: (i) congenital and (ii) acquired.¹ Spontaneous acquired diaphragmatic hernias are a rare entity and most commonly found at the esophageal hiatus or at the points of failure of embryonic fusion of diaphragm.¹ A spontaneous rupture theoretically means the absence of trauma. Multiple case reports have described various

aetiological factors responsible for the development of spontaneous diaphragmatic hernias. These include weight lifting,^{3,4} sudden physical effort,⁵ violent emesis,⁶ labour,^{7,8} eclampsia,⁹ exercise,¹⁰ coughing^{11,12} and even pertussis.¹³ All these factors are known to induce sudden increase in intra-abdominal pressure and absence of coordination of diaphragmatic muscle during physical activity which results in a diaphragmatic hernia.⁵ Very rarely spontaneous rupture have also been described without any precipitating factor. A review reported only five cases in which no effort preceded the hernia.¹⁴ In our case also there was no precipitating factor found for the development of hernia. In such cases where no predisposing factor could be identified a possible explanation could be the presence of a small congenital diaphragmatic hernia in adulthood that remained undetected during childhood¹ or the diaphragmatic defect arose from some forgotten trauma in the past.⁴ Diagnosis of diaphragmatic hernia is based on the clinical presentation and confirmed by imaging.¹⁵ Chest radiography helps in establishing the diagnosis only in one-third of the cases. The role of sonography is limited to the antenatal detection of congenital diaphragmatic hernias.¹⁶ Computed tomography is diagnostic in most of the cases.¹⁷ In our case also diagnosis was confirmed on CECT.

Management of diaphragmatic hernia is surgical and consists of reducing the viscera and sealing the diaphragmatic defect either by open thoracotomy or minimal access surgery.¹⁸ The open approach allows not only diaphragmatic repair but also the management of potential complications, like perforation, strangulation and necrosis of the herniated organs.⁵ In our case the defect was repaired by an open thoracotomy.

To conclude, spontaneous diaphragmatic hernias are very rare and lack of any predisposing factor in these cases is even rarer. Hence, a very high index of suspicion should be kept in mind if chest radiograph revealed presence of air fluid level along with complaints of abdominal discomfort and pain and absence of any other predisposing factor so that these cases are diagnosed early, thus preventing complications.

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