LEFT-SIDED DIAPHRAGMATIC HERNIA SIMULATING A LEFT PLEURAL EFFUSION: A CASE REPORT

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ABSTRACT

This is a case report of delayed presentation of Congenital Diaphragmatic Hernia, simulating a left pleural effusion on the routine chest X-ray. Subsequent Computerized tomography (CT) proved that was the diaphragmatic hernia, containing the large bowel and omentum.

Keywords: Diaphragmatic hernia, pleural effusion, Computerized tomography(CT).

INTRODUCTION

Congenital Diaphragmatic Hernia usually presents as the respiratory distress in neonatal period. The incidence is about 1: 3000 live births. There is some delayed presentation, such as dyspnea, chest pain, abdominal pain, nausea, vomiting, etc, which may be discovered from 1 month of life up to adulthood.[1-5] This case report described the clinical and unusual findings on the chest films. The diagnosis was proved by the Computerized tomography, subsequently. Chest radiographs, Computerized tomography of the thorax, upper GI study and barium enema were illustrated.

CASE REPORT

A 26 years old Thai male patient presented with dyspnea for 1 week. He has no history of trauma or underlying disease. Clinical examination revealed a healthy young man with decreased breath sounds and dullness on percussion at the left lower hemithorax.

Chest film showed soft tissue density in the left lower hemithorax with meniscus sign (Figure 1A) and left lateral decubitus film revealed that density, moved along dependent part. (Figure 1B). His previous medical record showed normal chest x-ray 5 years ago. The initial impression was the left pleural effusion, but no fluid was found from the thoracocentesis. So the CT scan of the thorax was performed, on reviewing the CT scan, it showed contents from the abdominal cavity, such as omentum and large bowel loops. The omental fat was depositing along dependent part of left hemithorax. (Figure 2 A-D)

Herniated distal transverse colon, splenic flexor and proximal descending colon were confirmed diagnosis by the barium enema study (Figure 3). Upper GI series revealed no part of stomach herniated into the chest. (Figure 4)

Although the treatment of choice is surgical repair of the diaphragm, but the patient refused.

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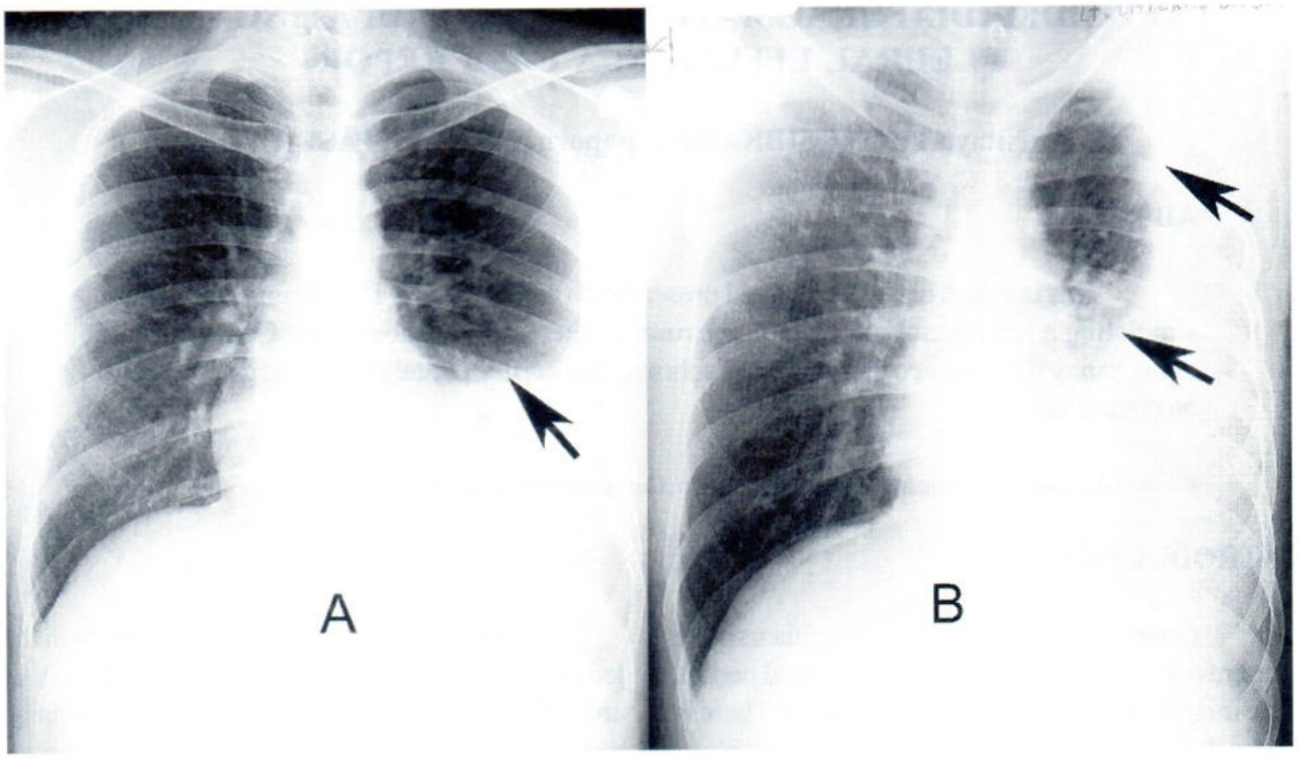

Fig.1-A, B Chest film PA (A) showed soft tissue density in the left lower hemithorax with meniscus sign (black arrow) and on left lateral decubitus film (B) also confirmed that the soft tissue density was movable along dependent part, likely to be free fluid (black arrow) in the pleural cavity.

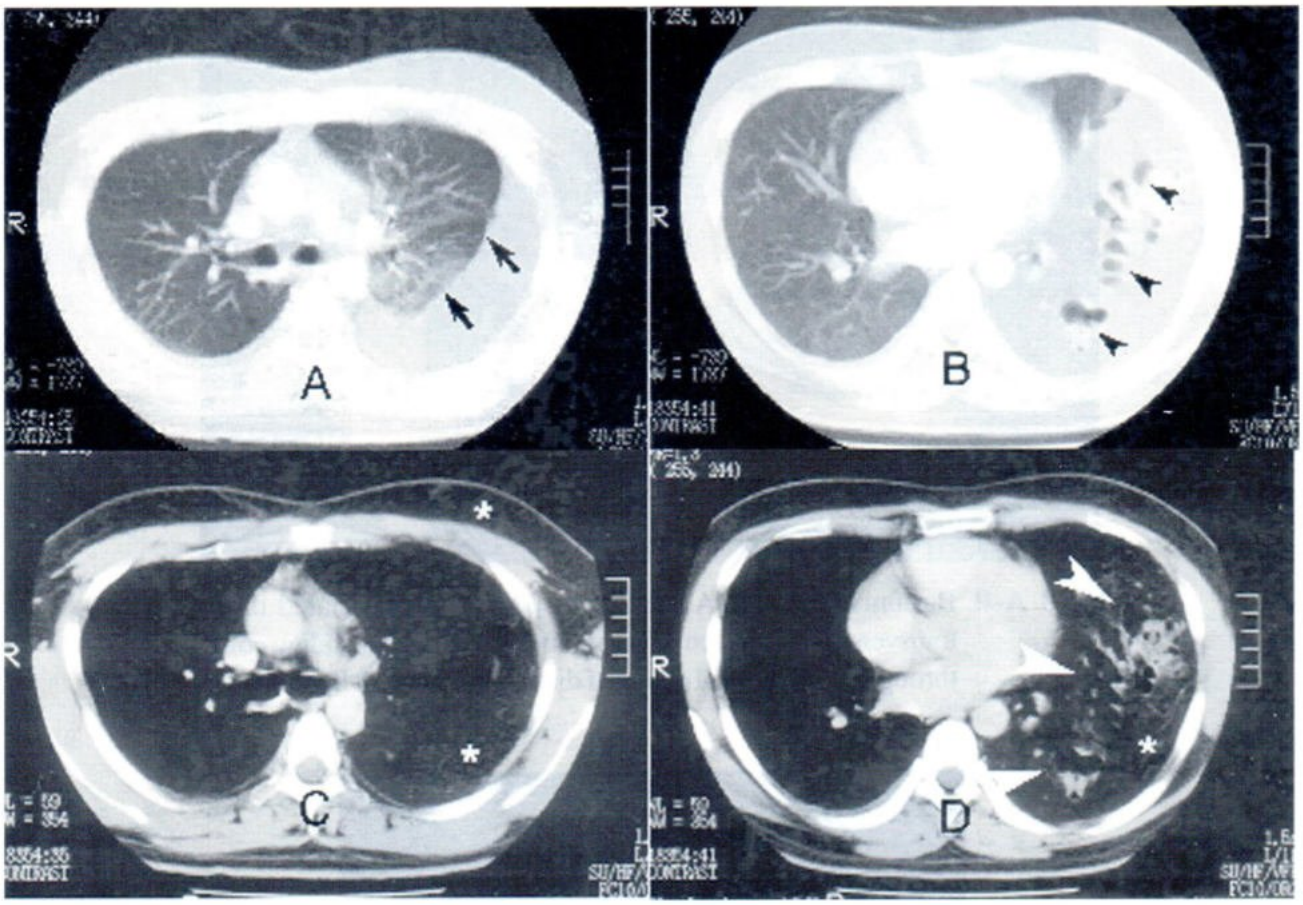

Fig.2 (A- D) Thoracic CT scans :

Fig.2 A, 2C At the carinal level, there was fat density lesion occupying along the posterolateral portion of the left hemithorax, produced "meniscus's sign" (black arrow), resembling of pleural fluid curve. Note the density of fat was as the same as subcutaneous fat (*). This is corresponding with omental fat.

Fig.2B, 2D At the four chambers view level, there were large bowel loops (arrow head) surrounding with omentum fat (*) in the left hemithorax.

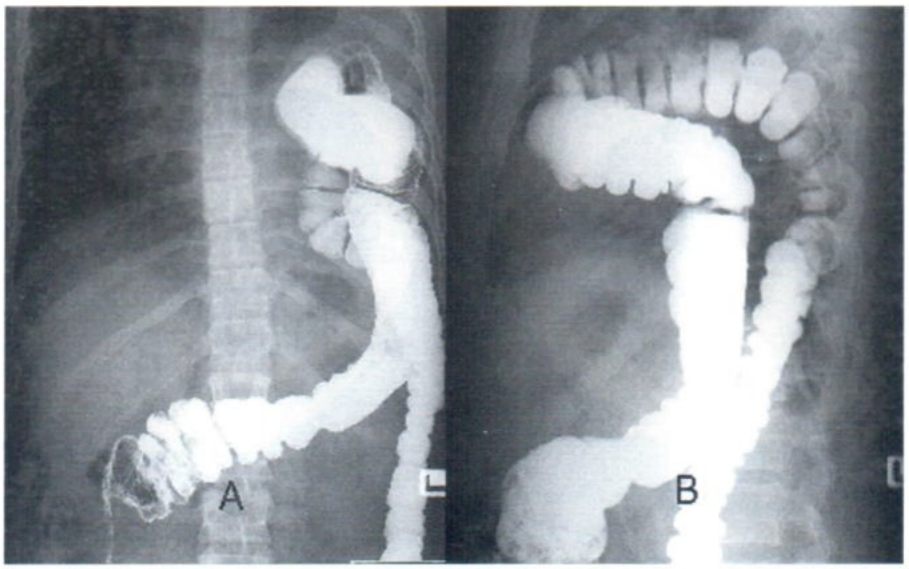

Fig.3 A-B Barium enema AP (A) and lateral (B) showed herniated distal transverse colon , splenic flexure and proximal descending colon through posterolateral defect of diaphragm into left hemithorax.

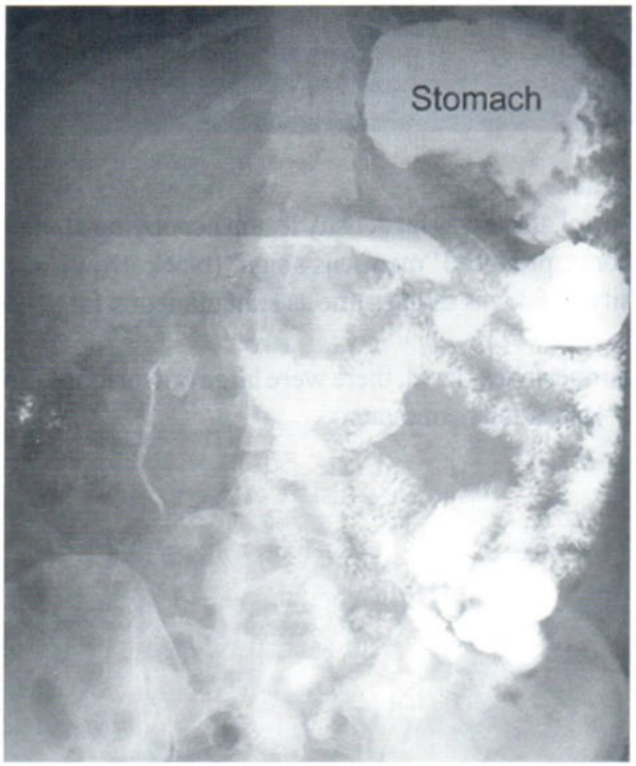

Fig. 4 Upper GI study reveals that there is no part of stomach, herniated into left hemithorax.

DISCUSSION

Dorsolateral congenital diaphragmatic hernia or Bochdalek hernia(B-D hernia) is the most common of congenital hernia that is a defect of the posterolateral aspect of diaphragm, and resulting to herniation of the intraabdominal organ into the left hemithorax. In most case there is no peritoneal sac.[2-4] Clinical presentation is usually during neonatal period as respiratory distress. The delayed presentation may be from 1 month up to adult hood, although it is uncommon in adult life. The incidence of delayed presentation is 5-25%.[5-8] The oldest patient which was report in the literature is 46 years.[9] It is known that a previous normal chest film does not rule out the presence of hernia.[3,6-7,10-11] The chest symptoms in adult life are varied from mild respiratory symptom to the death from the compromised cardiovascular and respiratory systems, due to mass effect from herniated organ. The abdominal symptoms may be vague such as dyspepsia, nausea and vomiting to severe strangulation or perforation of bowel.[3-4, 12-14] The hernia has also been reported as simulating a pleural effusion.[9,15-16]

The explanation offered for the delayed presentation is that the liver and spleen protect the bowel to herniate through small diaphragmatic defect. However, when the defect is increasing in size with somatic growth and herniation may be provoked by mechanical factors that increased intra-abdominal pressure such as coughing, sneezing, intestinal obstruction, obesity, pregnancy, etc.[3, 17-18]

Plain films, barium meals, barium enema, Computed tomography and Magnetic resonance imaging (MRI) establish the diagnosis.[9, 18-20] It may be diagnosis only with unusual course of the nasogastric tube, if there is herniation of the stomach into the thoracic cavity.[6,13] Barium meal or barium enema will be useful to demonstrate the herniated gastro-intestines. CT scan provides an accurate and non-invasive method for the diagnosis of suspected diaphragmatic herniation. Coronal MRI is valuable in demonstration the relationship of the herniation to the diaphragm. Because of the life threatening complications such as cardiopulmonary arrest due to mediastinal compression by herniated viscera, failure to thrive, incarceration or strangulation of bowel or acute bleeding, some authors recommend surgery immediately upon firm diagnosis.[2-3,6,21]

The herniated organ in the chest cavity in this case was the large bowel together with omentum. The movable and layer of omental fat in the dependent part of the chest films made the misdiagnosis as the pleural effusion. The correct diagnosis was made by CT scan, which was clearly demonstrated the herniated abdominal organs into the left hemithorax.

In conclusion, the delayed presentation of congenital diaphragmatic hernia and the variable symptoms make difficulty in diagnosis, so a careful examination and a strong index of suspicion are useful to reach the correct diagnosis.

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