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Case study

Bochdalek hernia of adult in emergency situation

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ABSTRACT

We report a case of Bochdalek hernia of the diaphragm in an adult who presented with acute upper abdominal pain and vomiting. We report this case because it is a rare condition, with little more than 100 cases reported in the literature [1]. Moreover, this is a condition mostly found in neonates and children, rarely carrying over into adulthood. This case details how to recognize the condition and how a lack of awareness around it carries a real and a serious potential for misdiagnosis.

Keywords: Bochdalek hernia, Diaphragm, Hernia, Abdominal, Respiratory, Intestinal lesions

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CASE REPORT

A 23 year-old male presented to the emergency department (ED) of Hamad General Hospital with complaints of abdominal pain and vomiting for one day. Pain was diffuse but more intense on left upper quadrant, radiating to the back. Pain increased on inspiration and reduced when the patient leaned forward. He used to have similar pain on and off for the year previous but of less severity and duration. Upper GI endoscopy was done at a private clinic in India, and he was diagnosed with an ulcer and prescribed a proton pump inhibitor and antispasmodics. He experienced symptomatic relief but only temporarily.

On examination his vitals were normal. Abdominal examination showed a non-distended abdomen, which was soft and featured mild tenderness in the left upper quadrant. Respiratory examination showed decreased air entry in left base. He visited the ED three times within 24 h. On first visit, he was given symptomatic treatment considering his chronic history of upper abdominal pain, upper GI endoscopy and ulcer. On second visit, a complete blood count, renal function test and abdominal ultrasound were conducted. Except Leucocytosis of 15000, everything else was normal so patient was discharged.

He came back within few hours and this time was investigated in detail, a chest X-ray showed a herniated bowel in the left hemithorax with shift of the mediastinum to the right (Fig. 1). Left lateral decubitus film (Fig. 2) showed air fluid level in left hemithorax. A thoracic and abdominal CT confirmed the diagnosis of a diaphragmatic hernia with herniation of small and large bowel with obstruction with atelectatic bands in left lower lung zone with mediastinal shift to right (Figs. 4 and 5).

Patient was taken to operation theatre and thoracoscopic reduction of hernia was done. A large defect of 5 cm was found in the posterolateral part of the left dome of the diaphragm. Contents of the hernia were transverse colon, loops of small bowel and omentum with minimal adhesions. Defect was closed with mesh and sutures. During surgery, the patient developed left pneumothorax, for which a chest tube was inserted (Fig. 3).

DISCUSSION

Bochdalek in 1948 described the formation of this type of hernia due to the improper fusion of posterolateral foramina of diaphragm; the condition is named after him. A Bochdalek hernia could be congenital or acquired. Acquired cases often result from thoracoabdominal trauma like a road traffic accident or situation that causes high-impact jarring of the internal organs. In both types, left sided herniation is more common and most often exists without a sac [2]. Absence of any past history of

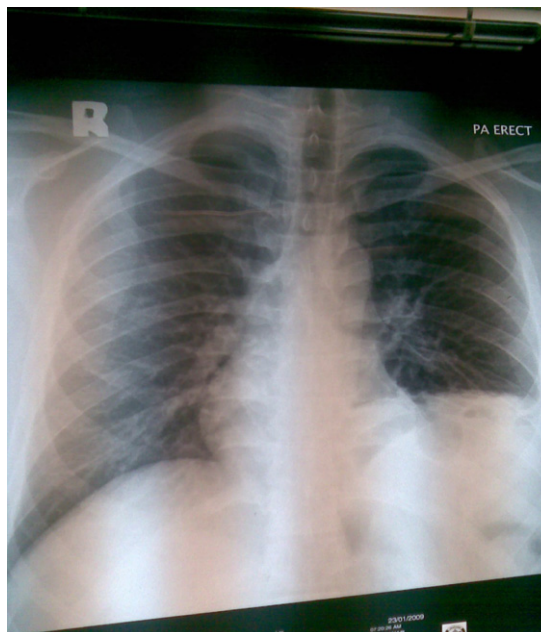


Figure 1. Chest x-ray (PA view) showing raised left hemidiaphragm and left lower zone opacity.



Figure 2. Chest X-ray (Lateral view) showing herniation of bowel loops to left hemi thorax.

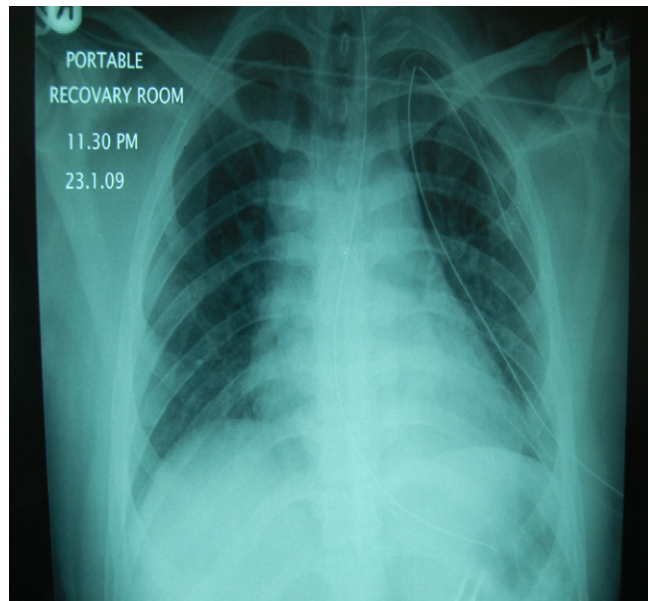


Figure 3. Chest X-ray (PA view) post operatively showing reduction of the diaphragmatic hernia.

major accident in our case suggests it to be congenital in origin. The structures that most commonly herniate are the stomach, ileum, colon and spleen [3].

The exact prevalence of Bochdalek hernia is controversial with estimates ranging from 1 in 2000–7000, based on autopsy reports [4–6], to a high of 6 percent based on the finding from early CT examinations [7].

Most cases are diagnosed during the neonatal period, with patients presenting with respiratory distress or other respiratory-related symptoms. Symptoms in adults include chest pain, difficulty breathing, abdominal pain, signs of intestinal obstruction and gastroesophageal reflux disease. Acute onset of symptoms in adults with congenital hernia could be due to obstruction or strangulation as occurred in our case [10]. Cases have been reported in the literature where Bochdalek hernia

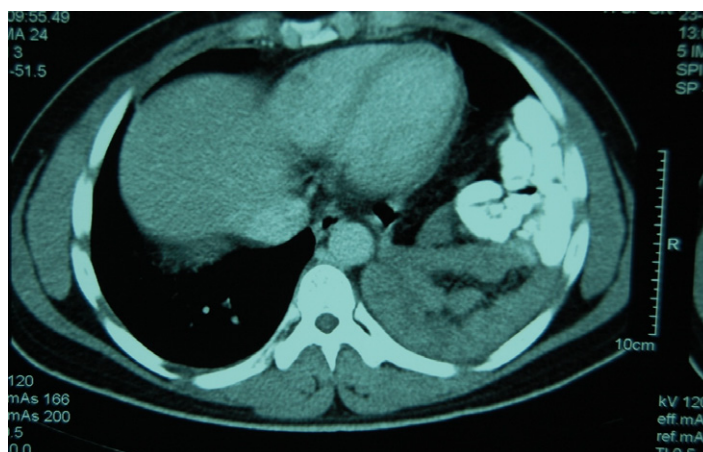


Figure 4. CT scan of chest with IV and oral contrast showing Bowel loops herniating through the diaphragm in left hemi thorax.

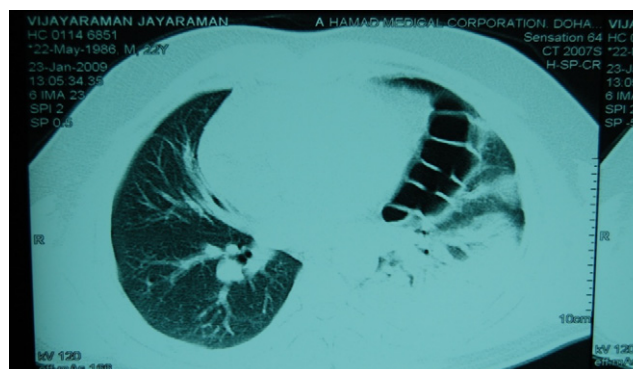


Figure 5. CT scan of Chest in lung window showing air containing bowel loops in left hemi thorax.

presented as complicated pregnancy [8], haemothorax and shock [9], pneumothorax and colopleural fistula [10] and even sudden death diagnosed on autopsy [11].

As in our case, plain chest X-rays are adequate to diagnose a large hernia; however, small ones may not be visible [1].

Additionally, a normal previous chest X-ray does not rule out the presence of hernia. A CT scan is diagnostic and helps to discern the composition of the hernia [1]. Once identified, the hernia should be repaired to prevent life-threatening complications.

CONCLUSION

We describe a case of Bochdalek hernia in the ED. This is a rare condition that has potential for misdiagnosis. Any patient who presents with intestinal obstruction and lung conditions should be evaluated with this condition in mind, which can be observed through chest X-ray and confirmed by CT scan.

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