Case Report

BOCHDALEK HERNIA:

A Rare Cause of Respiratory Distress in an Elderly Male

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Abstract

Congenital diaphragmatic hernia (CDH) is a rare anomaly with an incidence of 2.3 to 2.6 per 10,000 births as per European and American registry respectively. It is most often diagnosed prenatally or in the immediate postnatal period. Symptomatic cases in adults are extremely rare and are mostly an incidental finding. If symptomatic, the most common presentation is thoracic and abdominal pain, respiratory distress and bowel obstruction. CDH commonly presents in the form of Morgagni and Bochdalek hernia. We are presenting one such rare case of Bochdalek hernia in a 62year elderly male with a congenital bilateral club foot and rare symptom of respiratory distress.

***Keywords**: Congenital Diaphragmatic hernia (CDH), Bochdalek'S hernia, Morgagni hernia, club foot.*

Introduction

A congenital diaphragmatic hernia is characterized by a defect in the diaphragm followed by the protrusion of abdominal contents depending upon the site of the defect. The defect usually occurs on the left side as the right-sided diaphragm closes early and also liver prevents the protrusion of any abdominal content into the thorax. The defect on the left diaphragm can be either central or posterior. Bochdaleck hernia is the result of inadequate obliteration of the lumbar elements in the pleuroperitoneal area, during the eighth and tenth week of intrauterine development **(**1**)**. This pathological condition was first described by McCauley in 1754 and thereafter studied and named after Bochdaleck in 1848 and it usually presents in childhood **(**2**)**. A little more than 100 cases of such hernia with various syndromes have been presented in literature and we are presenting one such rare case associated with club foot for the first time in literature. **(**3**)**.

Case report

A 62 years old male known case of a congenital bilateral club foot, presented to the emergency department of our hospital with complaints of shortness of breath from the last 1 month. Progression of breathlessness could not be appreciated by the patient due to a non-ambulatory disability (club foot). There was no previous history of trauma to the chest or abdomen. On initial evaluation he was tachypnoeic with a respiratory rate of 28 breaths per minute, heart rate was 99 beats per minute regular, blood pressure was 130/80mmHg in the right arm, the temperature was 98 degrees Fahrenheit, oxygen saturation was 89% on room air, JVP not raised. He had a congenital bilateral club foot(Fig.1). Chest examination revealed decreased respiratory sound over the left inframammary and infra axillary area with bowel sounds heard over the left infra axillary area. Cardiovascular examination was normal (normal s1 s2 without any added sounds). Abdominal examination was also normal. He had normal higher mental functions. Complete blood count, liver function tests, renal function tests were within normal limits. Electrocardiogram was normal. X-ray chest was suggestive of mediastinal widening with the shift to right, an air-fluid level seen in the retrocardiac region extending from the region of the left heart border to right heart border with slight blunting of the left diaphragmatic dome (Fig.2 White arrow-retrocardiac air shadow, Blue arrow- air-fluid level). He was kept on oxygen support and was admitted for further evaluation and management. Based on the clinical examination and x-ray findings a high-resolution computed tomography scan of the thorax was done. The HRCT scan of the thorax revealed a large defect in the left side of the diaphragm posteriorly (Fig.3 – black arrow, Fig.4- white arrow) through which the stomach, omentum, and transverse colon was herniating(Fig.5, Fig. 6 – yellow arrow). Mediastinum was slightly shifted to the right side. There was no sign of occlusion, strangulation, or

perforation of the intestine. There was no evidence of pulmonary hypoplasia. Clinical symptoms improved with conservative management. It was decided to program a restorative laparotomy in order to avoid any further complications.

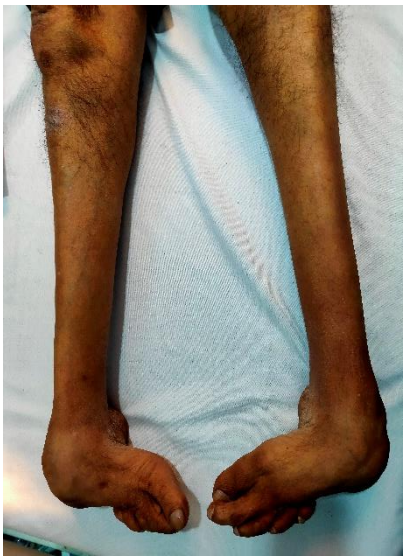
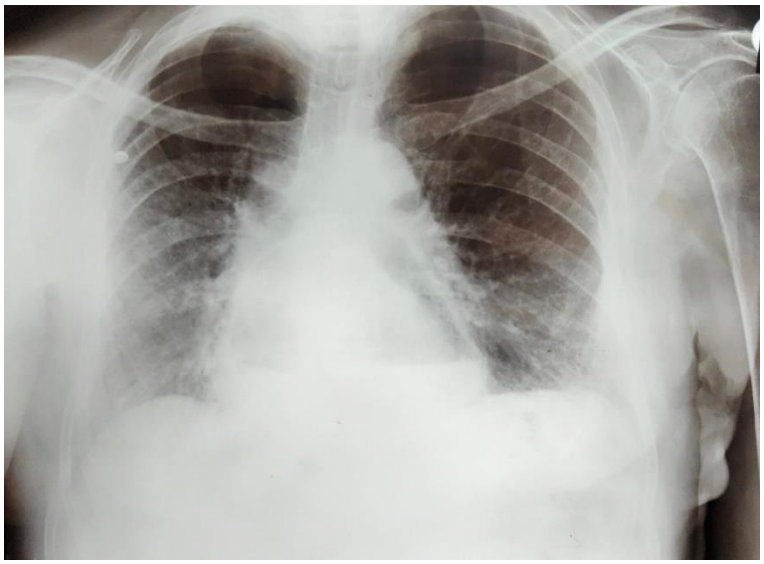


Figure. 1



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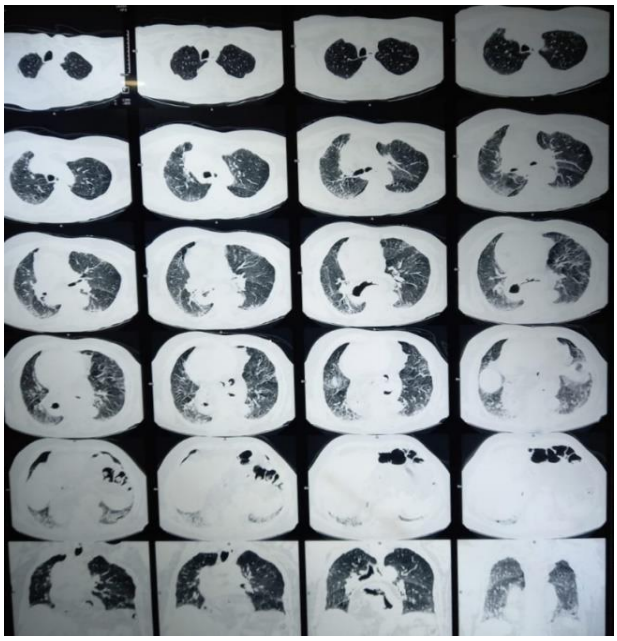

Figure. 3

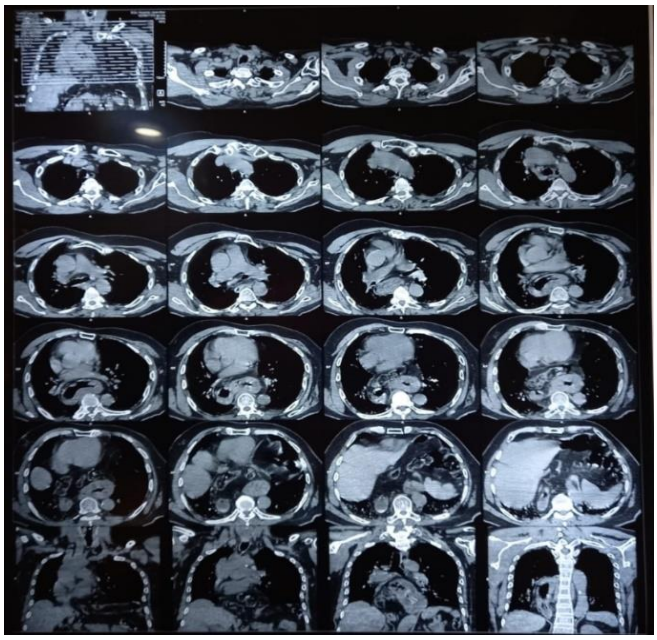

Figure. 4

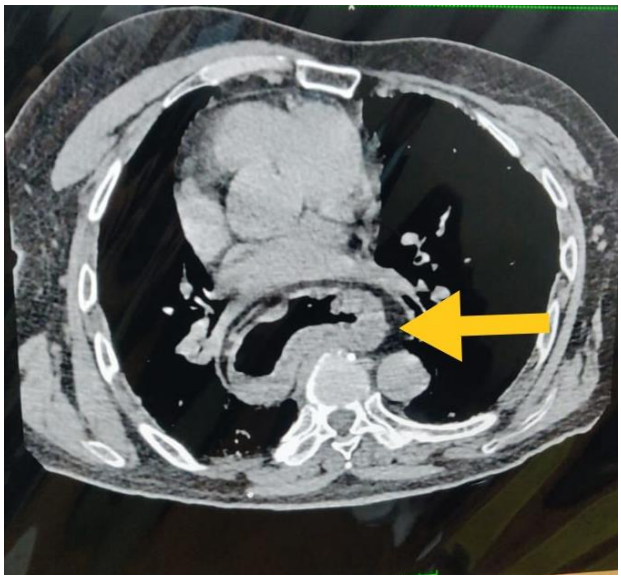

Figure. 5

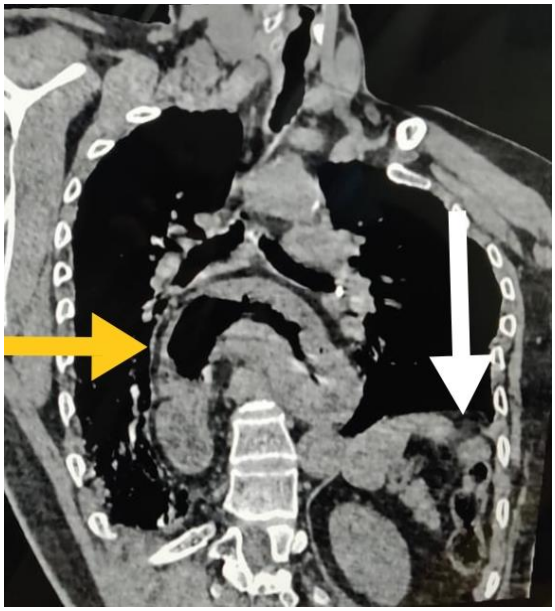

Figure. 6

Discussion

Incidence of congenital diaphragmatic hernia is 1:2000 to 1:5000 **(**4**)**. Incidence of herniation is 78–90% posterolaterally through the foramen of Bochdalek, 1.5–6% retrosternal via the foramen of Morgagni and 14–24% via oesophageal hiatus. A left-sided herniation is common, as the right hemidiaphragm develops earlier and the liver prevents hollow viscus from herniation **(**5**)**.

A congenital diaphragmatic hernia can be classified as posterolateral (Bochdalek's hernia), parasternal right anterior (Morgagni), parasternal left anterior (Larrey). In the fetus, the posterolateral diaphragmatic foramen or Bochdalek foramen usually fuses by eight weeks of gestation. Incomplete fusion leads to the development of Bochdalek's hernia. **(**6,7,8**)**

Bochdalek hernia mostly presents in the neonatal period with symptoms being difficulty in breathing, tachycardia, cyanosis, asymmetrical chest movement during respiration, scaphoid abdomen. In adults, it is present in patients with raised intra-abdominal pressure such as obesity, during pregnancy, intense exertion, or abdominal or thoracic trauma. The symptoms may be abdominal pain, constipation, shortness of breath, chest pain, etc. There can be acute, chronic, or no symptoms at all. **(**9**)**

X-ray chest in patients of Bochdalek hernia can be confused with other pathologies such as pneumothorax, atelectasis, mediastinal mass, pneumopericardium. **(**10**)**

Computed tomography scans confirm the diagnosis of Bochdalek's hernia and provide detailed information on the viscera and diaphragmatic defect. **(**10, 11**)**

The investigation of choice for diagnosis of Bochdalek's hernia is Computed tomography with contrast. X-ray has the least sensitivity. **(**12**)**

Treatment of Bochdalek hernia includes reduction of the herniated contents and repairing the diaphragmatic defect. **(**10,11**)**

Conclusion

Bochdalek hernia can be missed unless there is a high index of suspicion. The diagnosis is mainly based on radiological investigations. Bochdalek hernia must undergo surgery before the onset of fatal digestive or respiratory tract complications.

Conflict of interest:

The authors declare that they do not have any conflict of interest.

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