

Case report

Intriguing presentations of diaphragmatic disorders- Report of two cases

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Abstract:

Bochdalek hernia is the commonest type of congenital diaphragmatic hernia, which usually occurs on the left side due to lack of closure of the pleuroperitoneal cavity between the eighth and tenth week of embryonic life. Late presentation is a rare entity. Eventration of diaphragm is usually congenital but may be acquired. It is a condition where there is a failure of muscular development of either a part or whole of one or both hemidiaphragm. Below, we are reporting 2 cases, one of Bochdalek hernia which presented in adulthood like a pleural effusion and the second a case of complete eventration of left side of diaphragm in an asymptomatic patient.

Keywords: Diaphragmatic hernia, eventration, late presentation



Introduction:

Congenital diaphragmatic hernia is a rare entity with incidence of 1:3000 live births. Bochdalek hernia is the commonest type of CDH, which usually occurs on the left side due to lack of closure of the pleuroperitoneal cavity between the eighth and tenth week of embryonic life. Adult presentation is rare.⁽¹⁾ There is male preponderance with male to female ratio of 2:1⁽²⁾. CDH can cause respiratory compromise and lung hypoplasia and hence it usually presents in neonatal period. An adult with CDH may present with a wide range of acute or chronic respiratory or gastrointestinal symptoms or may be completely asymptomatic⁽³⁾. A simple chest radiograph can lead to the diagnosis of a diaphragmatic hernia. CT can be taken to confirm the diagnosis. The treatment is surgical repair due to the risk of strangulation and respiratory difficulties.

Eventration of the diaphragm is a condition where the muscle is permanently elevated, but retains its continuity and attachments to the costal margins.^(4,5) Eventrations are rare and often only conservative treatment is required. This condition may be confused with a traumatic rupture of the diaphragm in a patient with trauma and hence it is important to differentiate between the two. Conventional chest radiography has been found to be a useful modality for assessment of the functional status of an elevated diaphragm as the evaluation of the shape of an elevated diaphragm may preclude the need for fluoroscopic sniff test to determine diaphragmatic paralysis⁽⁶⁾.

Case Report 1:

A 43 year old male with no known comorbidities presented with complaints of breathlessness of 3 months duration which exacerbated on food intake. The heart rate was 78/min and blood pressure was 130/80 mm of Hg.

Respiratory examination showed dull note on percussion and absent breath sounds on the left infrascapular, infra axillary and mammary areas

X ray chest showed homogenous opacity with shift of lower mediastinum.

Ultrasonographic examination of chest showed no pleural fluid and lung parenchyma was not visualized in left inframammary, infra axillary, infrascapular areas. Reverberation artefact was noted.

CT chest was taken to rule out any other causes for breathlessness. It revealed a large left posterior diaphragmatic defect (9x6 cm) with herniation of spleen, left renal upper pole, splenic flexure, small bowel loops and transverse colon.

The patient was then posted for an open mesh repair. Intra operatively, spleen, transverse colon, and splenic flexure were found involving the defect (10x8cm) in the left side of chest along with small intestine. An ICD tube was placed before closing the defect and left abdominal drain also placed.

Post-operative period was uneventful and the patient was treated with antibiotics, proton pump inhibitors and other supportive measures.



Figure 1: Chest X-ray at the time of presentation

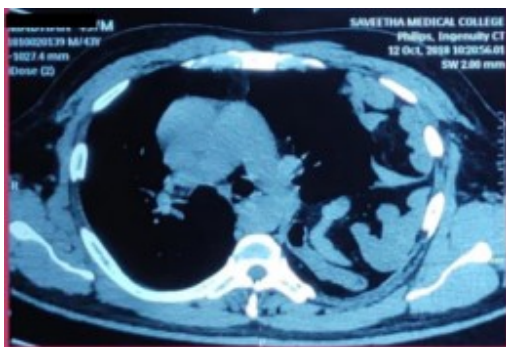


Figure 2: Mediastinal window showing herniation

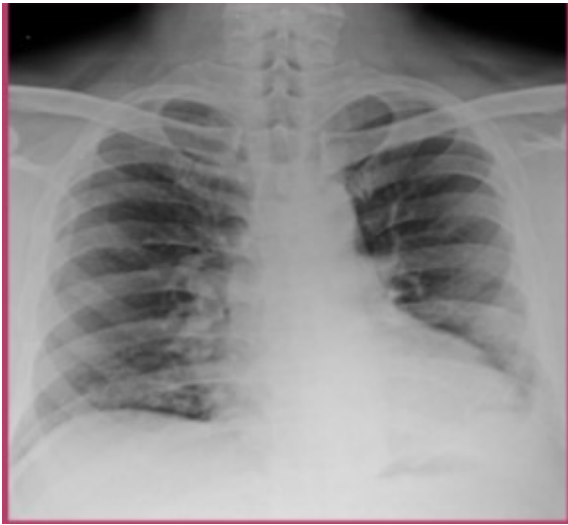


Figure 3: Current chest x-ray

Case Report 2:

A 29 year old male with no comorbidities came to the out patient department to get medical fitness in order to join new place of work. He complained of occasional cough. On general examination, blood pressure was 120/80 mm of Hg and heart rate was 84/min. Respiratory examination showed dull note on percussion and absent breath sounds on the left intrascapular, infra axillary and mammary areas. X ray chest showed a concave homogenous opacity. CT chest revealed a raised left hemidiaphragm. There was no herniation of abdominal contents into the thoracic cavity. 3D reconstruction of the chest also confirmed the diagnosis of eventration. Since the patient was asymptomatic, he was managed conservatively and made aware of his condition and asked to report in case of development of any symptoms.



Figure 4: Chest x-ray of patient 2



Figure 5: CT chest showing eventration of diaphragm

Discussion:

Congenital diaphragmatic hernia (CDH) has an incidence of 1:3000–1:5000 per live births. Adult presentation is rare. The most frequent cause of herniation of abdominal viscera in adults are trauma and iatrogenic. The overall prevalence of BH in adults is 6%. The most frequently displaced organ is the stomach followed by the colon, spleen, small intestine and ureter.⁽⁷⁾ But in this case, stomach has not herniated, while the upper pole of spleen, small bowel loops and a part of transverse colon has herniated causing passive collapse of the lung and mild mediastinal shift to right. Usually they present either with vague abdominal discomfort, vomiting, constipation or with respiratory complaints like chest pain, dyspnoea. Our patient presented with breathlessness alone. In majority of patients, the affected lung will be deformed⁽⁸⁾ but our patient had no lung hypoplasia. The diagnosis is made by radiological studies. CXR- usually shows gas filled bowel loops or a consolidation, but in this case it presented like a pleural effusion with a concave margin. CT chest is the diagnostic modality.

Eventration of diaphragm is a congenital anomaly consisting of failure of muscular development of part or all of one or both hemidiaphragms.⁽⁹⁾ It is usually congenital but may be acquired. In this case complete eventration of the left side was seen. Eventration of diaphragm is usually asymptomatic in adults and incidental discovery is done on screening chest x-rays, just as in this case. Elevation of diaphragm can be caused by phrenic nerve palsy due to neoplasm or surgical resection. In adults it is very difficult or impossible to distinguish it from diaphragmatic paralysis. Asymptomatic patients are managed conservatively but patients with symptoms require surgery. In this patient a diagnosis of eventration was made by x-ray and CT findings and he was treated conservatively.

Conclusion:

The above mentioned cases show the presentations of various diaphragmatic pathologies. The first case sheds light on the varied presentation of adult Bochdalek hernia which can even mimic a pleural effusion. Hence it is of utmost important to intervene a patient after proper imaging studies like a bedside USG and confirming the diagnosis so as to prevent undue complications. The second case shows how a diagnosis of eventration was made in an asymptomatic patient with simple radiological studies.

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