



## A Case Of Bochdalek Hernia Camouflaged As Pleural Effusion In An Adult

Dr. Veena Charishma RP, Dr. Sowmitha SG, Dr. Gangadharan Vadivelu,  
Dr. Sachin Vidyasagar.

Department of Pulmonary Medicine Saveetha medical college and hospital Tamil Nadu, India

**Corresponding Author** – Dr. Veena Charishma RP, Department of Pulmonary Medicine, Saveetha medical college and hospital, Tamil Nadu, India

Email id: [veenacharishma95@gmail.com](mailto:veenacharishma95@gmail.com)

### Article History

Volume 6, Issue Si2, 2024

Received: 27 Mar 2024

Accepted : 28 Apr 2024

doi: 10.33472/AFJBS.6.Si2.2024.1468-1472

### ABSTRACT:

Congenital diaphragmatic hernias usually present in infancy. Bochdalek hernias are rare forms of congenital diaphragmatic hernias and their symptomatic presentation in adulthood is a rare entity. Herein we present a middle-aged man with Bochdalek hernia mimicking as pleural effusion. Imaging workup revealed herniation of the abdominal contents into the thoracic cavity through the defect in the diaphragm. Patient was managed surgically and followed up. High degree of suspicion is warranted for prompt diagnosis and to avoid misdiagnosis and treatment which may cause increased mortality and complications.

### INTRODUCTION:

Bochdalek hernia is a form of diaphragmatic hernia usually presenting in the neonatal period. It is associated with severe pulmonary complications in the perinatal period due to the protrusion of the abdominal contents through the hernial opening into the thoracic cavity. Bochdalek hernia usually occurs on the left side due to lack of closure of pleuroperitoneal cavity between the eighth and tenth week of intrauterine life.

Late presentation beyond 40 years is a very rare entity and there are about 150 reported cases in the medical literature. It usually causes non-specific symptoms in adults and can be picked up as an incidental finding on Chest imaging. It requires a high degree of suspicion for prompt diagnosis.

We report a case of Bochdalek hernia which presented in adulthood camouflaged as pleural effusion.

### CASE REPORT:

A 43 year old male presented to us with complaints of chest discomfort and recurrent episodes of burning sensation in the left side of the chest and epigastric region post food intake for past 3 months. Patient had no h/o breathlessness, cough, chest pain or hemoptysis. Patient had No h/o trauma in the past, Previous treatment for tuberculosis or any previous respiratory illness. Patient had no other known comorbidities.

*Dr. Veena Charishma RP / Afr.J.Bio.Sc. 6(Si2) (2024)*

On clinical examination his vitals were stable. Respiratory examination showed dull note on percussion and absent breath sounds on the left infrascapular, infra-axillary and mammary areas. Abdominal and other system examination was unremarkable. Blood investigations did not show any abnormality.

Chest X ray was done which showed left lower zone homogenous opacity, blunting of the costophrenic angle with shift of lower mediastinum. Ultrasonography of the chest showed no evidence of pleural fluid, lung parenchyma not visualised in left inframammary, infraxillary, infrascapular areas, reverberation artefact noted. CT-Chest: Large defect measuring 9x6 cms in the posterior diaphragm with herniation of spleen, left renal upper pole, splenic flexure, small bowel loops, transverse colon seen herniating into left hemithorax with passive atelectasis of underlying left lung parenchyma. Patient underwent USG portal venous doppler which showed No splenoportal axis abnormality.

Patient underwent Reduction of abdominal contents and open synthetic mesh repair through left sub costal incision. Intercoastal drainage tube was placed and postoperative period was uneventful, patient's symptoms resolved and improved symptomatically.

#### **DISCUSSION:**

Diaphragm is a skeletal muscular sheet that separates the thoracic cavity from the abdominal cavity. Diaphragm consists of a central tendinous part occupied by central tendon and a peripheral muscular part. Development of diaphragm starts from the 3<sup>rd</sup> week of intrauterine life and is usually fully formed by the 12<sup>th</sup> week. (5). Diaphragm is formed from four major structures namely the septum transversum, Pleuroperitoneal membranes, the dorsal oesophageal mesentery and the body wall.

Failure of fusion or incomplete fusion between the pleuroperitoneal membranes and septum transversum during development gives rise to an anatomically vulnerable portion through which herniation occurs. Generally right side attains a complete closure before the left side, which may be a contributing factor for Bochdalek hernia being more common on the left side. (6)

Bochdalek hernia is the most common form of congenital diaphragmatic hernia caused by defect in the posterolateral part of the diaphragm. This defect enables the abdominal contents to herniate into the thoracic cavity which is aided by the negative intrapleural pressure and positive intrabdominal pressure. This herniation causes crowding of intrathoracic contents and results in pulmonary hypoplasia where the neonates can present with respiratory distress (3).

Small defects can be asymptomatic and present as an incidental finding in adulthood. Adult onset diaphragmatic hernias are rare and can present with mild chest discomfort. In case of strangulation of herniated abdominal contents, patients can present with life threatening complications. Diagnosing Bochdalek hernia required a high level of clinical suspicion along with imaging to prevent misdiagnosing the condition and preventing inappropriate interventions like chest tube insertion.

Radiological imaging is used to establish the diagnosis. Chest radiograph has limited value as bochdaleck hernia is difficult to diagnose on chest radiograph. Bochdalek hernia should be suspected if gas filled loops of bowel is seen in thoracic cavity, smooth lesion in posterior costophrenic recess or opacified hemithorax (3). Computed tomography is the modality of choice for diagnosing Bochdalek hernia. CT along with Ultrasonography of thorax can demonstrate the discontinuity of diaphragm and abdominal viscus in thoracic cavity (3).

The main stay of treatment is thoracoscopic /Laparoscopic surgical reduction of hernia with or without mesh repair in case of symptomatic uncomplicated hernias. In complicated Hernias it is recommended to do open surgery for organ salvage (1).

*Dr. Veena Charishma RP / Afr.J.Bio.Sc. 6(Si2) (2024)*

In our case patient presented with complaints of chest discomfort and epigastric burning sensation. Chest radiograph mimicked a left sided pleural effusion. In view of absent fluid in pleural space in ultrasonography of the chest, a CT Chest was done which showed a defect in the posterior diaphragm through which 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.

In our case due to proper imaging and suspicion Bochdalek hernia was diagnosed and inappropriate treatment such as Chest drain insertion was prevented. Patient underwent open Hernia Repair surgery and post operative period was uneventful and patient is on follow up with no recurrence of symptoms.

#### **CONCLUSION:**

Bochdalek hernia presenting in adulthood is rare but not impossible. Our case is presented to create awareness among physician s about the varied presentation of adult bochdalek hernia which can even mimic a pleural effusion. Hence it is always important to intervene a patient after proper imaging studies and confirming the diagnosis. Simple bedside test like ultrasonography must be employed in all pleural fluid cases to prevent undue consequences of misdiagnosis which may result in increased morbidity, additional procedure and complications.

#### **REFERENCES:**

1. Wong C, Lam CT, Yam LYC. Bochdalek hernia masquerading as pleural effusion in a young adult. *Respirology Case Reports*. 2023;11: e01104. <https://doi.org/10.1002/rcr2.1104>
2. Yeung H-M, Kumala E, Stanek S, et al. *BMJ Case Rep Published Online First*: [please include Day Month Year]. doi:10.1136/bcr-2018- 224674
3. Vichare S, Jawade K, Chaudhari K, Kamble S, Kandukuri T, Bhalgat M. Report of a case of bochdalek hernia in an adult presenting as chronic cough: review of literature and discussion. *Int Surg J* 2023; 10:1717-20
4. Akita, M., Yamasaki, N., Miyake, T. *et al*. Bochdalek hernia in an adult: two case reports and a review of perioperative cardiopulmonary complications. *surg case rep* 6, 72 (2020). <https://doi.org/10.1186/s40792-020-00833-w>
5. Choi, J.-Y.; Yang, S.-S.; Lee, J.-H.; Roh, H.-J.; Ahn, J.-W.; Kim, J.-S.; Lee, S.-J.; Lee, S.-H. Maternal Bochdalek Hernia during Pregnancy: A Systematic Review of Case Reports. *Diagnostics* 2021, 11, 1261. <https://doi.org/10.3390/diagnostics11071261>
6. Brown SR, Horton JD, Trivette E, Hofmann LJ, Johnson JM. Bochdalek hernia in the adult: demographics, presentation, and surgical management. *Hernia*. 2011 Feb;15(1):23-30. doi: 10.1007/s10029-010-0699-3. Epub 2010 Jul 8. PMID: 20614149.

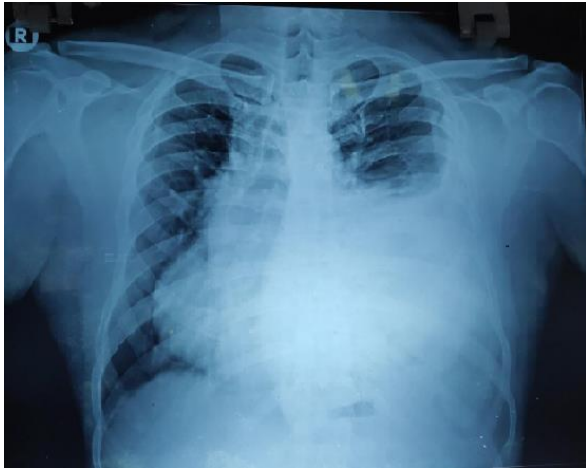


Image 1 – Chest Radiograph showing opacification of the left mid zone and lower zones with obliteration of left costophrenic angle.

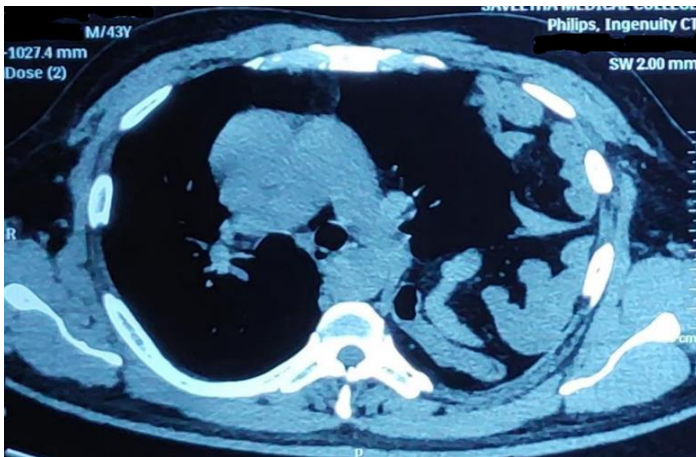


Image 2 – Mediastinal window of CT chest showing the Herniation of abdominal contents into thoracic cavity.



Image 3 – Post Operative Day 1 Chest radiograph with ICD tube.



Image 4- Current Chest radiograph of the patient showing no recurrence.

**KEYWORDS:** Bochdalek hernia, Congenital Diaphragmatic hernia, Posterolateral hernia.

**Page count: 4**

**Images - 4**

**Word count of Abstract - 86**

**Word count of Text - 952**