ORIGINAL RESEARCH PAPER
Volume - 10 | Issue - 04 | April - 2021 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

"NOT AT HOME" !!!

General Medicine

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ABSTRACT

A Bochdalek hernia is a posterior congenital defect of the diaphragm, usually on the left hemidiaphragm, caused by a lack of closure of the pleuroperitoneal canal between the eighth and tenth week of foetal life during the embryonic development. It typically presents in the neonatal period with severe respiratory failure. Incidental diagnosis in an asymptomatic patient presenting in adult life is rare. We report a case of an asymptomatic eighteen year old male who was incidentally discovered to have congenital diaphragmatic hernia when he was operated for testicular torsion on an emergency basis.

KEYWORDS

Congenital diaphragmatic hernia, Bochdalek hernia, adults.

INTRODUCTION:

Congenital diaphragmatic hernia (CDH) is an idiopathic human malformation that usually presents in the newborn period. CDH is a relatively common condition that occurs in less than one to five babies per 1000 births.[1] The majority present during neonatal life and have a poor prognosis, being associated with congenital pulmonary abnormalities.[2] The major clinical problem is pulmonary hypoplasia, a result of the lung having failed to develop in-utero as the thoracic cavity is filled by abdominal contents.[3] Diagnosis of asymptomatic large congenital Bochdalek hernia is quite rare among adults. These patients usually present with difficulty in breathing, pneumonia like symptoms or gastrointestinal symptoms and end up being diagnosed with CDH.[4] A definite diagnosis can be made by CT alone because of its characteristic features. We report a case of an asymptomatic eighteen year old male who was incidentally discovered to have diaphragmatic hernia. The majority of abdominal contents were present in the thoracic cavity. (Hence the title "NOT AT HOME "!!!)

Case Report:

An eighteen year old male, resident of Mumbai, was referred to this hospital from a peripheral hospital where he was operated on an emergency basis for testicular torsion. On examination at the peripheral hospital he was found to have decreased breath sounds on the left with a mediastinal shift to the right. He was therefore referred with a provisional diagnosis of pleural effusion for further management.

On admission to this hospital the patient's vitals were stable. His oxygen saturation on room air was 98%. On systemic examination the heart sounds were heard on the right side of the chest. Breath sounds were diminished over the left hemithorax. Rest of the systemic examination was unremarkable.

The chest X-ray done on admission here showed an air fluid level on the left side (Fig 1).

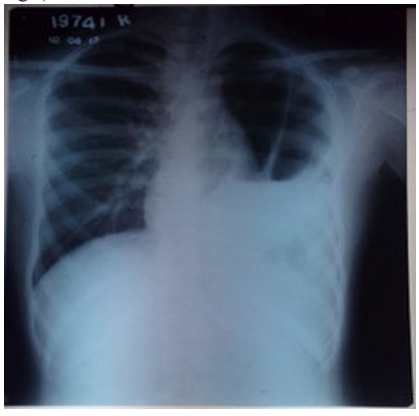

Fig 1 Chest Xray PA view

To confirm the diagnosis of hydropneumothorax versus loculated pleural effusion a computed tomography (CT) scan of the chest was done. CT of the chest showed a notable displacement of the abdominal viscera into the left thoracic cavity and the interrupted hemi-diaphragm (Fig 2 and 3).

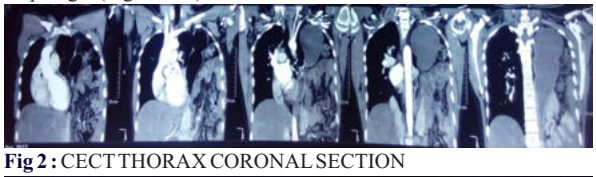

Fig 2 : CECT THORAX CORONAL SECTION

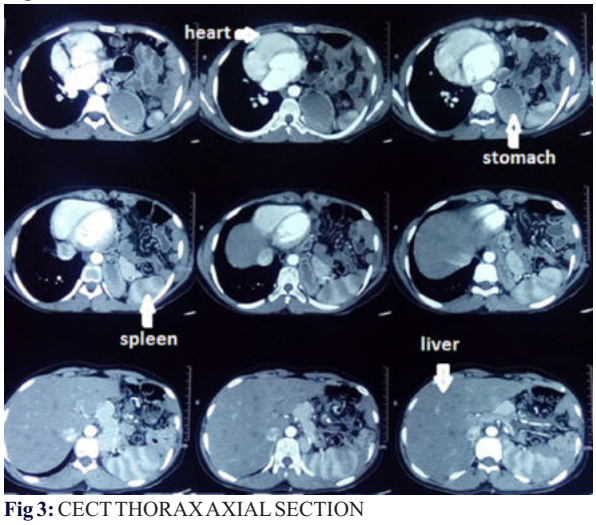

Fig 3: CECT THORAX AXIAL SECTION

The most serious consequence was the atelectasis of the left lung (Fig 4) as nearly the whole left thoracic cavity was filled by the atopic abdominal organs. In this case the stomach, spleen, pancreas, omentum and the small bowel loops were present in the thoracic cavity.

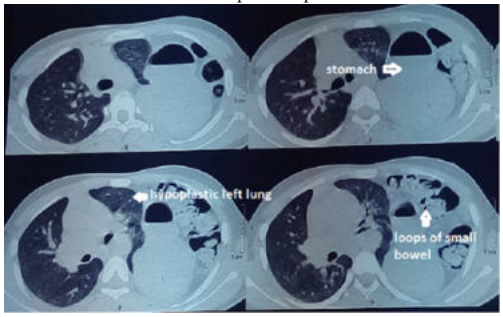

Fig 4 : CECT THORAX AXIAL SECTION

In view of further development of complication like pulmonary hypertension and risk of intestinal obstruction and strangulation the patient was offered the option of hernia correction. The patient agreed to undergo surgical correction. The patient was referred to the surgery department for the same. Accordingly the patient underwent laparotomy with reduction of the abdominal contents and closure of the diaphragmatic defect. The patient had an uneventful hospital stay of seven days and did not develop any post operative complications. Patient was followed up for a period of six months, with serial chest radiographs which were normal.

DISCUSSION:

Depending on the location of herniation, CDHs can be divided into posterolateral (Bochdalek), anterior retrosternal (Morgagni), hiatal hernia, and septum transversum defect. Posterolateral is the most common hernia type (95%). The other three types occur with an incidence of about 2% each. A Bochdalek hernia is a congenital defect of the diaphragm located in the posterior insertion. This is caused by a lack of closing of the pleuro-peritoneal cavity by incomplete diaphragmatic development before the intestine returns to the abdomen from the yolk sack between weeks 8 and 10 of gestation. If hernia formation precedes lung development, pulmonary hypoplasia may occur with severe respiratory compromise at birth. In adults, this defect is uncommon, the lung in most cases develops normally and therefore symptoms are rare.[5] Symptoms may develop as a result of incarceration, strangulation and visceral rupture inside the chest cavity. Digestive symptoms include intermittent abdominal pain, vomiting and dysphagia, while respiratory symptoms include chest pain and dyspnea.[6,7] The most frequently displaced organ is the stomach followed by the colon, spleen, small intestine and ureter.[8] Diagnosis is ascertained by a combination of chest X-rays, CT and magnetic resonance imaging (MRI), as well as upper gastrointestinal and bowel double-contrast studies. Bochdalek hernia may be misdiagnosed as pleural effusion, as was the situation in our case. It may also be misdiagnosed as pneumonia, tension pneumothorax, lung cysts, or atelectasis.[9] Management of a Bochdalek hernia includes reducing the abdominal contents and repairing the defect through a laparotomy or thoracotomy. Successful laparoscopic and thoracoscopic repairs of Bochdalek hernias have both been described. The indications for repair of congenital diaphragmatic hernia are the same as those to treat any hernia, and should take into account the patient's overall medical condition. The outcome of adult patients suffering from Bochdalek hernia depends on the type of clinical presentation.[10]

CONCLUSION:

Congenital diaphragmatic hernias are an uncommon diagnosis among adult populations because they are mainly recognized in infancy or early childhood. In majority of cases that are asymptomatic, they are detected as incidental findings on chest X-ray or computed tomography, although some adult patients may present with symptoms due to hernia complications. High index of clinical suspicion and knowledge of this anatomic defect presenting among adults is crucial for the identification and management. It should be surgically corrected to avoid complications or to correct them if they are already present.

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