



Research Article

Section: General Surgery

An Obstructed Diaphragmatic Hernia In Adulthood; a Case of Uncertain Origin

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ABSTRACT

Background: Diaphragmatic hernia in adults is uncommon and often results from trauma; however, it may occasionally present without a clear etiology, raising the possibility of a missed congenital defect or sequelae of trivial remote trauma. Diagnosis is often delayed due to vague clinical and radiological findings, leading to significant morbidity. **Case Presentation:** We report the case of a 45-year-old male who presented with abdominal pain and obstipation for four days. Clinical examination revealed absent bowel sounds and reduced air entry in the left lower chest. Imaging demonstrated a left-sided diaphragmatic hernia with herniation of the splenic flexure and omentum, causing large bowel obstruction. The patient underwent emergency exploratory laparotomy, which revealed a 2 × 2 cm diaphragmatic defect with herniated bowel and omentum. The non-viable omentum was resected, viable bowel repositioned, and the defect repaired with polypropylene sutures. The postoperative recovery was uneventful, and the patient was discharged on day nine. **Conclusion:** This case highlights the diagnostic challenges of diaphragmatic hernia presenting in adulthood without prior trauma. A high index of suspicion and timely surgical intervention are crucial to avoid complications. An abdominal approach can provide effective management, even in settings without thoracic surgical expertise.

INTRODUCTION

A Diaphragmatic hernia is the herniation of abdominal content into the thorax through a rent in the diaphragm. It can be congenital or acquired, with the former being more common.[1]

Congenital diaphragmatic hernias are an idiopathic malformation which usually presents in the newborn period, and carry a considerable morbidity and mortality rate[2], while acquired diaphragmatic hernias are commonly found in adults, usually secondary to trauma. They may occur spontaneously in adults, but are exceedingly rare, and could be secondary to a remote trivial trauma, or a small congenital defect becoming apparent later in life secondary to a precipitating incident.[1]

Congenital diaphragmatic hernias in adults are either an incidental finding during radiologic evaluation for unrelated issues, or present in acute setting secondary to incarceration, strangulation, or perforation of herniated content into the chest, with gastrointestinal and/or chest related symptoms.[3]

Due to the rarity of the condition, clubbed with its rare presentation, this condition can often get misdiagnosed or diagnosed late, resulting in unnecessary interventions, which could result in strangulation of the content and even death. [4]

We report a case of a 45 year old male with an Left sided diaphragmatic hernia with large bowel obstruction, and an unknown etiology, with no significant history of trauma or prior diagnosis, raising the possibility of a missed congenital anomaly, or a delayed presentation of a trivial trauma. The case report highlights the importance of having a high index of suspicion for the condition, especially in acute setting.

Case Report

45 year old male presented to the Emergency department with complaints of Abdominal pain and obstipation since 4 days, with no history of vomiting, or fever. Patient and relatives denied any history of trauma, but the patient had undergone a urological procedure about 2 years ago. Clinical examination revealed a soft, non-distended, non-tender abdomen but with absent bowel sounds in all four quadrants. On

Digital rectal examination, the rectum was collapsed and empty. Notably, on examination of the respiratory system, air entry was significantly reduced in the Lt lower chest. Abdominal radiograph revealed multiple air fluid levels in a step ladder pattern, while the chest radiograph illustrated inequality in bilateral chest, with haziness, mild blunting of Left costophrenic angle, and prominent air bubble in the left

hemithorax with elevated left hemidiaphragm. A Contrast Enhanced CT of the lower thorax and abdomen reported a defect in the mid portion of the Left diaphragm with herniation of intra-abdominal fat, part of transverse colon and splenic flexure of colon, with dilatation of proximal bowel loops, with features suggestive of an obstructed Left Diaphragmatic hernia.



Fig 1: Abdominal radiograph revealing multiple air fluid levels in a step ladder pattern.



Fig 2: Chest radiograph revealing blunting of Left costophrenic angle with prominent bubble in Left hemithorax and an elevated Left hemidiaphragm

Patient was initially managed with fluid resuscitation, correction of electrolyte abnormalities, and gastric decompression using a Nasogastric tube; which drained feculent effluent. Once patient's condition was deemed stable, patient was shifted to the operation theater, where an

exploratory laparotomy was performed, during which a Left Diaphragmatic hernial orifice of about 2x2cm was visualized, with herniation of splenic flexure and part of greater omentum through a tight hernial ring, and subsequent dilation of proximal bowel loop.

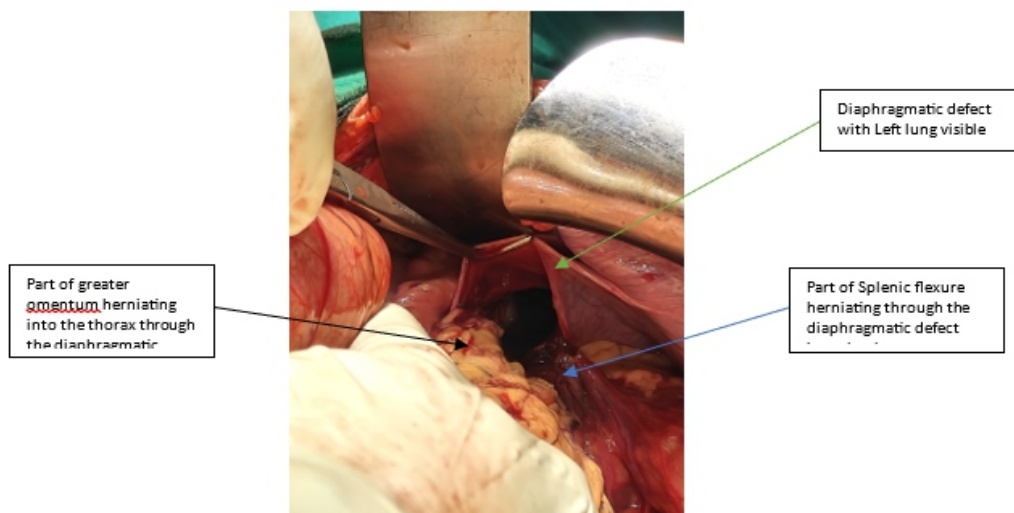


Fig 3: Intra operative Photograph showing the diaphragmatic hernial defect with the Left lung, and herniating omentum, splenic flexure

The ring was divided, the hernial sac and its content reduced after releasing it from its adhesions to the parietal pleura. The content was assessed for viability, and while the herniated omentum was deemed nonviable and thus excised, the bowel

was found to be viable and thus repositioned into the abdomen. The hernial defect in the diaphragm was repaired using Polypropylene sutures in 2 layers.

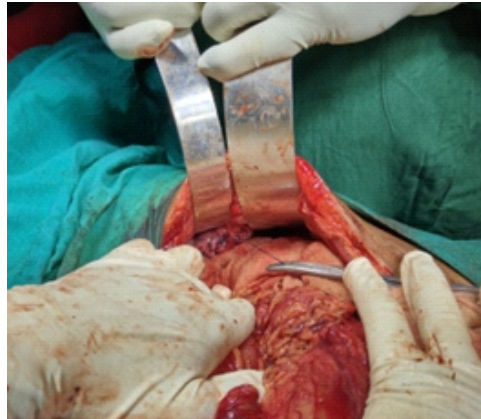


Fig 4: Photograph shows the repaired diaphragmatic hernial defect

Thorough bowel walk with bowel decompression was done. An intercostal drain tube was placed in the Left pleural cavity, and an intraabdominal drain was placed in the pelvis, followed by meticulous closure of the incision.

Post operative period was uneventful, with return of bowel activity by post operative day 3, resumption of diet in post operative day 5, removal of Intercostal drain by post operative day 8, and removal of abdominal drain and subsequent discharge on post operative day 9

Discussion

A Diaphragmatic hernia is the protrusion of abdominal content into the thoracic cavity through a defect in the diaphragm. It can be congenital or acquired, with former being more common, presenting during the neonatal period with respiratory distress within few hours of birth, which can be life threatening.[5]

Acquired hernias are less common, mostly occurring secondary to abdominal trauma; found in about 3% of all trauma patients, or iatrogenic injury. Very rarely, spontaneous diaphragmatic hernias have been reported, although they may be secondary to a trivial trauma long time ago, or a small congenital defect that became symptomatic due to exertion.[1]

Diaphragmatic hernias through a posterolateral defect in the diaphragm, also called the Bochdalek Hernia, occur in 85% cases. While hernias through an anteromedial diaphragmatic defect; called as the Morgagni hernia, occurs in 2% of cases. Left sided hernias are more common due to the delayed closure of the pleuroperitoneal defect on the left side, and the protection of the right side provided by the liver.[6]

Bochdalek hernias are rare beyond childhood, with an incident of 0.17%.[7] Usually asymptomatic and thus an incidental finding, these can present acutely with features of severe thoracic or abdominal pain, signs of bowel obstruction like vomiting, abdominal distension, obstipation, or even as sudden onset respiratory discomfort. [4]

These non-specific features coupled with vague initial

radiological findings; which often appear like a pneumothorax or pleural effusion, often make the condition hard to diagnose, even resulting in unnecessary interventions like intercostal drain insertions, delaying the diagnosis and risking strangulation of herniated content, consequently leading to death, [4] with an overall mortality rate of 31%. [8]

Treatment in an acute setting involves resuscitation and stabilization of patient's condition, followed by surgery, which is the treatment of choice.[9] Surgical treatment involves primary closure or patch closure of the diaphragmatic defect through an open abdominal approach, though in chronic cases, a thoracic or a thoraco-abdominal approach is preferred as this allows good separation of adhesions between the herniated content and thoracic structures. Alternatively, A laparoscopic or a thoracoscopic approach can also be used.[10] Mesh repair can be used in case of a large defect that fails to undergo primary closure.[10]

Conclusion

This case illustrates the inconspicuous nature of a diaphragmatic hernia which, due to its non-specific features and vague preliminary radiological findings, is hard to diagnose, leading to delay in definitive treatment which consequently results in poor patient outcomes. It also highlights the effectiveness of an abdominal approach in dealing with the pathology, thereby enabling management in a center without a thoracic surgery unit. Thus, it highlights the importance of keeping a high index of suspicion for the malady, enabling early diagnosis and prompt treatment, thereby enabling improved patient outcomes.

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