

Case Report

Adult presentation of congenital Bochdalek hernia: a rare case report

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ABSTRACT

Bochdalek hernia is a congenital posterolateral diaphragmatic defect that typically presents in neonates with respiratory distress. Adult presentation is extremely rare and often diagnosed incidentally or when complications occur. We report a case of a 68-year-old male who presented with acute abdominal pain and vomiting. Imaging revealed a left posterolateral diaphragmatic defect with herniation of stomach, spleen and transverse colon into the thoracic cavity. The patient underwent successful surgical repair with reduction of herniated viscera including spleen for which splenectomy done with closure of the diaphragmatic defect. This case highlights the importance of considering congenital diaphragmatic hernia in adults presenting with unexplained thoraco-abdominal symptoms.

Keywords: Bochdalek hernia, Congenital diaphragmatic hernia, Adult presentation, Diaphragmatic defect, Rare case

INTRODUCTION

Congenital diaphragmatic hernia (CDH) results from failure of closure of the pleuroperitoneal canal during embryological development, leading to a defect in the posterolateral diaphragm through which abdominal contents may herniate into the thoracic cavity.¹ Bochdalek hernia accounts for the majority of CDH cases and typically presents in the neonatal period with respiratory distress due to pulmonary hypoplasia.² However, adult presentation is rare, representing approximately 0.17–6% of all diaphragmatic hernias.¹⁻³

Most adult cases are asymptomatic or present with nonspecific gastrointestinal or respiratory symptoms, often delaying diagnosis.^{2,3} With the increasing use of computed tomography (CT), more asymptomatic and incidental cases are being identified.^{2,3} Early surgical repair is generally recommended to prevent complications such as bowel obstruction, strangulation, and respiratory compromise.³

We present a rare case of adult Bochdalek hernia diagnosed in a 68-year-old male.

CASE REPORT

Patient information

A 68-year-old male presented to the emergency department with complaints of recurrent upper abdominal pain since many years which was increased for last 3 days associated with vomiting, retrosternal discomfort, breathlessness and occasional chest pain. There were no significant past medical or surgical history and no history of trauma.

Clinical findings

On examination, the patient was found to have a pulse of 97/min and blood pressure of 140/90 mmHg, with an SpO₂ of 95% on room air. Auscultation of the chest revealed vesicular breath sounds on the right side, while bowel sounds were noted on the left side. The abdomen

was soft and non-tender, with no evidence of guarding or rigidity.

Laboratory findings

Routine blood investigations were within acceptable limits.

Ultrasonography

Ultrasound of the abdomen showed a simple hepatic cyst, a simple left renal cyst, and minimal left pleural effusion.

CT abdomen

Contrast-enhanced CT scan of the abdomen revealed a left posterolateral diaphragmatic defect with herniation of the distal stomach, transverse colon, omentum, and mesentery into the thoracic cavity, findings consistent with a Bochdalek hernia. There was also minimal left pleural effusion with associated passive atelectasis.

Diagnosis

Adult left-sided Bochdalek hernia.

Operative procedure

The patient underwent laparotomy with reduction of herniated viscera with splenectomy with repair of the diaphragmatic defect and placement of left intercostal drainage tube.

Operative findings included left posterolateral diaphragmatic defect and herniation of stomach, spleen(hypoplastic) and transverse colon into thoracic cavity.

Course in the hospital

The postoperative period was uneventful. The patient recovered well and was discharged in stable condition with advice for regular follow-up.

DISCUSSION

Bochdalek hernia is a congenital diaphragmatic defect resulting from failure of closure of the pleuroperitoneal canal during the 8th-10th week of embryological development. It represents the most common form of congenital diaphragmatic hernia, accounting for approximately 70–75% of all congenital diaphragmatic defects.⁴ The defect is typically located in the posterolateral portion of the diaphragm and occurs predominantly on the left side (80–90%), mainly due to delayed closure of the left pleuroperitoneal canal and the protective effect of the liver on the right side.⁵

Most cases of Bochdalek hernia present during the neonatal period with severe respiratory distress, secondary to pulmonary hypoplasia and pulmonary hypertension. However, adult presentation is rare and accounts for a very small percentage of cases.⁶ The reported prevalence of asymptomatic Bochdalek hernia detected incidentally in adults on CT imaging ranges between 0.17% and 6%.⁵

In adults, Bochdalek hernia may remain asymptomatic for several decades and is often discovered incidentally during imaging performed for unrelated conditions. When symptomatic, patients may present with nonspecific gastrointestinal or respiratory symptoms, making diagnosis challenging. Gastrointestinal manifestations may include abdominal pain, nausea, vomiting, or intestinal obstruction, whereas respiratory symptoms may include dyspnea, chest pain, or reduced breath sounds due to lung compression.⁶⁻⁸ In rare situations, the condition may present as a surgical emergency due to strangulation or perforation of herniated viscera.⁷

Various abdominal organs can herniate through the diaphragmatic defect. The most commonly involved organs include the stomach, colon, small intestine, spleen, and omentum.⁷ In the present case, the stomach, spleen, and transverse colon were found herniating into the thoracic cavity, which is consistent with findings reported in previous studies.

Radiological imaging plays a crucial role in diagnosis. Although chest radiography may demonstrate bowel loops or air-fluid levels within the thoracic cavity, the findings may be nonspecific. Computed tomography (CT) scan is considered the gold standard investigation, as it clearly demonstrates the diaphragmatic defect, herniated abdominal contents, and any associated complications such as obstruction or strangulation.⁹ CT imaging has significantly improved the detection of incidental Bochdalek hernias in adults.⁵

Definitive management of Bochdalek hernia is surgical repair, even in asymptomatic patients, because of the risk of potentially life-threatening complications such as bowel obstruction, strangulation, perforation, and respiratory compromise.¹⁰ Various surgical approaches have been described, including laparotomy, thoracotomy, laparoscopic repair, and thoracoscopic repair, depending on the patient's clinical status, associated complications, and surgeon expertise.¹⁰

The fundamental principles of surgical management include reduction of the herniated viscera, assessment of organ viability, and closure of the diaphragmatic defect, usually with non-absorbable sutures or mesh reinforcement when necessary. In our case, the patient underwent exploratory laparotomy with reduction of herniated contents, splenectomy, and primary closure of

the diaphragmatic defect, resulting in an uneventful postoperative recovery.

This case emphasizes the importance of maintaining a high index of suspicion for congenital diaphragmatic hernia in adults presenting with unexplained thoraco-abdominal symptoms, particularly when imaging reveals bowel loops within the thoracic cavity. Early diagnosis and timely surgical intervention are essential to prevent serious complications and ensure favorable outcomes.

CONCLUSION

Adult presentation of Bochdalek hernia is rare and may present with nonspecific abdominal or respiratory symptoms. High clinical suspicion and appropriate imaging are essential for diagnosis. Early surgical intervention provides excellent outcomes and prevents life-threatening complications.

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