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Case Report

Symptomatic left diaphragmatic eventration in a 64-year-old male: a case report and review of management

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ABSTRACT

Eventration of diaphragm, particularly in adults, are rare and often underdiagnosed, especially when symptomatic. This report presents a case of a 64-year-old male with a symptomatic left sided significant Eventration of Diaphragm, characterized by two months of left upper abdominal pain and exertional dyspnea. The patient's history included an open cholecystectomy performed three to four years prior. Radiological investigations revealed significant eventration of abdominal contents into the left thorax with a contralateral mediastinal shift. The patient underwent surgical intervention through a left subcostal incision extending 2 cm to the right of midline, where the herniated contents were reduced, and the diaphragm was plicated. Post-operative management was successful, with the patient being discharged on the fifth postoperative day. This case emphasizes the importance of timely diagnosis and surgical management of diaphragmatic hernias in symptomatic adults.

Keywords: Diaphragmatic hernia, Diaphragmatic eventration, Diaphragm repair

INTRODUCTION

Eventration of Diaphragm in adults is relatively rare and often misdiagnosed due to their symptoms, which can overlap with various gastrointestinal or respiratory issues. While congenital diaphragmatic hernias are more commonly identified in neonates but sometimes might present in adults as delayed presentation, acquired hernias may arise from trauma, prior surgeries, or spontaneous diaphragm eventration.[1] In this case report of elderly patient, eventration of the left diaphragm occurred mostly spontaneously.

The left side is more frequently involved, likely due to the liver's protective role on the right. In Spite of that, bochdaleck's hernia are encountered in elderly patients as well.[2] Symptoms can range from being asymptomatic to causing significant respiratory distress and abdominal pain, which can lead to delays in diagnosis. A thorough history, physical examination, and appropriate imaging are essential for accurate diagnosis and management. This case report details a 64-year-old male with a symptomatic left diaphragmatic hernia, highlighting the importance of recognizing this condition and the complications that can arise from late treatment. The surgical approach and postoperative results in this patient offer valuable insights into effective management strategies for similar cases, emphasizing the need for increased clinician's awareness of this rare but significant condition.

CASE REPORT

A 64-year-old male presented to the outpatient department with complaints of persistent pain in the left upper abdomen for two months, which was accompanied by difficulty breathing during exertion. The abdominal pain was insidious in onset and intermittent, alleviating spontaneously. The patient's medical history was significant for an open cholecystectomy performed three to four years prior. Upon physical examination, the patient exhibited mild tenderness in the left upper

quadrant. Initial imaging with a chest X-ray indicated eventration of abdominal contents into the left thorax, accompanied by a mediastinal shift to the right (Figure 4). A subsequent contrast-enhanced computed tomography (CECT) scan of the thorax and abdomen confirmed the presence of eventration of the left diaphragm, with migration of various abdominal structures, including the gastroesophageal junction, stomach, splenic flexure of the colon, and jejunal loops into the left hemithorax (Figure 2).

After a comprehensive preoperative evaluation and optimization of the patient's condition, he was taken for surgery. A left subcostal incision extending 2 cm to the right of midline was made (Figure 1), and the herniated abdominal contents were successfully reduced back into the abdominal cavity. Notably, the spleen was found to be densely adhered to the diaphragm, necessitating splenectomy, though a small portion remained attached (Figure 3). Splenectomy done to reduce left intrathoracic abdominal viscera back into the peritoneal cavity and repair the diaphragmatic defect. The eventrated left diaphragm was plicated in two layers using continuous and interrupted non-absorbable polypropylene sutures to secure the repair after excising the extra redundant part of left diaphragm. An intercostal drain (ICD) was placed at the anterior axillary line in the fifth intercostal space, and a drain was positioned in the left subdiaphragmatic space to manage potential fluid accumulation.

Post-operative recovery was smooth, with the patient showing significant improvement. Post operative CXR done to evaluate the outcome of surgery (Figure 5). On the fifth postoperative day, both the drain and ICD were removed, and the patient was discharged in good health. Follow-up visits revealed continued well-being, highlighting the successful surgical management of his condition.

Figure 1: Left subcostal incision towards right side of midline continued with previous right kocher's incision scar.

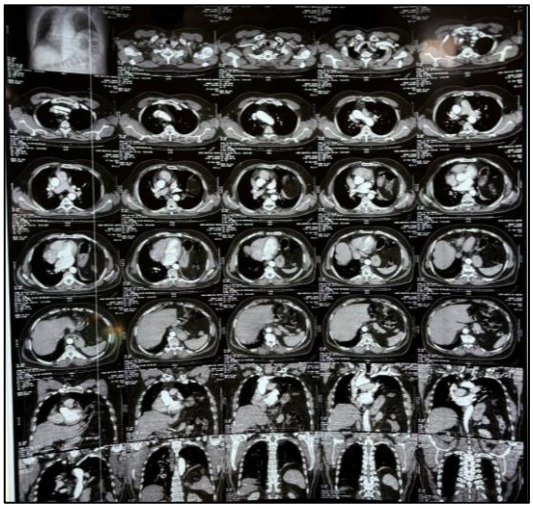

Figure 2: CECT thorax showing eventration of left diaphragm and abdominal content in left hemithorax with contralateral mediastinal shift.

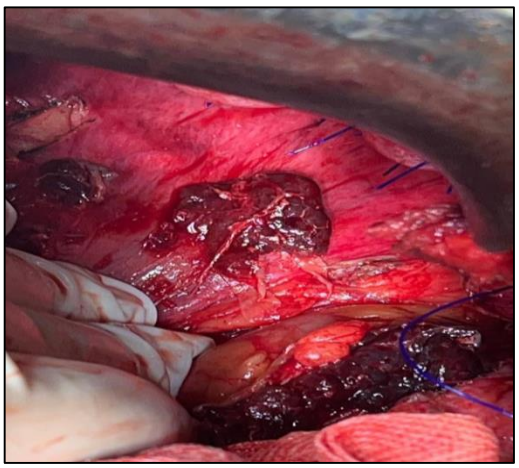

Figure 3: Intraoperative-left diaphragmatic plication (abdominal view) showing adhered part of posterior spleen over plicated diaphragm.

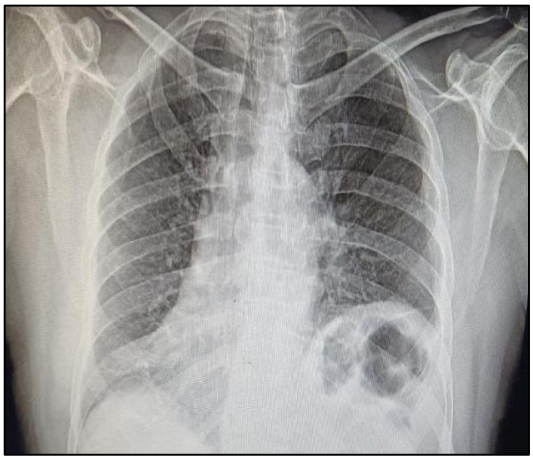

Figure 4: Preoperative CXR showing eventration of left diaphragm with abdominal gas shadows visible in left hemithorax.

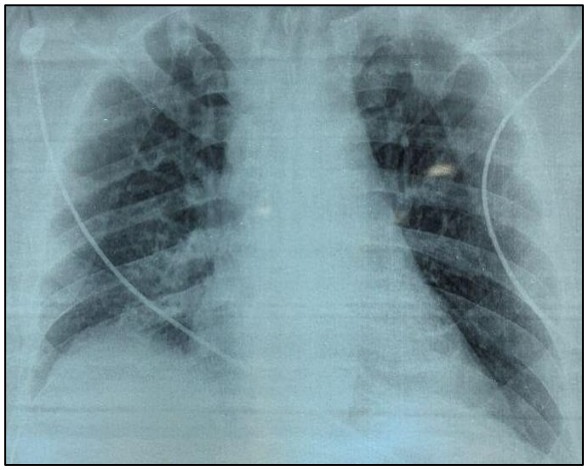

Figure 5. Post operative CXR showing normal diaphragm on left side.

DISCUSSION

Diaphragmatic hernias in adults can present a diagnostic challenge due to their variable symptoms and radiological findings3. In this case, imaging studies, particularly the chest X-ray and CECT, played a pivotal role in identifying the left diaphragmatic hernia. Common radiological appearances include mediastinal shift, air-fluid levels, and the presence of abdominal organs in the thoracic cavity. Depending on the severity and chronicity, these hernias may also appear as a solid opacity on imaging, indicating the presence of viscera in the thorax.

Surgical intervention is the definitive treatment for symptomatic diaphragmatic hernias. Traditional open surgery, as performed in this case, is often necessary for complex presentations, especially when dense adhesions are present, as was seen with the spleen.[6] However, thoracoscopic and laparoscopic approaches have gained popularity for their minimally invasive nature and associated benefits, such as reduced postoperative pain, shorter recovery times, and less scarring.[4]

Thoracoscopic repair allows for direct visualization of the thoracic cavity and may be particularly advantageous in cases where the hernia is identified incidentally or in early stages. Laparoscopic approaches can also be utilized, particularly for diaphragmatic hernias diagnosed through abdominal investigations.[5] These techniques involve accessing the diaphragm through the abdomen and can facilitate the repair of smaller hernias without extensive dissection.

Despite the advantages of minimally invasive techniques, the choice of surgical approach should be guided by factors such as the complexity of the hernia, the presence of adhesions, and the surgeon's expertise. In this case, the open approach was necessary due to previous surgery and anticipated significant adhesions visible mediastinal shift and advancement of abdominal viscera in half of left hemithorax as shown in HRCT thorax. The ongoing advancements in laparoscopic and thoracoscopic techniques hold promise for improved patient outcomes. But it may differ from patient to patient and solely depend on the surgeon's choice.

CONCLUSION

This case illustrates the critical need for awareness and prompt surgical intervention in patients presenting with symptomatic diaphragmatic hernias. Eventration of diaphragm in elderly patients with unknown etiology holds unusual presentation as in some cases reported previously.[7] Overall, this case underscores the importance of a comprehensive evaluation and tailored surgical approach for symptomatic eventration of diaphragm, enhancing awareness and improving management strategies in clinical practice.

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