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Case Report

Strangulated Bochdalek Diaphragmatic Hernia

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Abstract

Bochdalek diaphragmatic hernia is a rare pathology and a rare cause of intestinal obstruction.
We report the case of a 19-year-old patient with no particular medical history who presented to the emergency department with symptoms of intestinal obstruction characterized by cessation of stool and gas passage, with clinical examination revealing tympanic distended abdomen.
A thoracoabdominal CT scan revealed a left-sided Bochdalek diaphragmatic hernia with colonic distension and a transitional level at the hernia sac.
The patient underwent surgery, during which the hernia contained the spleen, transverse colon, left colic flexure, and greater omentum.
The contents were reduced, and the diaphragmatic defect was sutured with non-absorbable sutures, with thoracic drainage.
The postoperative course was uneventful, and the patient was discharged on the fourth postoperative day.

Keywords: Bochdalek diaphragmatic hernia; Acute intestinal obstruction

Introduction

Bochdalek hernia is a congenital diaphragmatic malformation located in its posterolateral aspect.
It is a rare pathology in adults, often diagnosed in childhood.
Diagnosis is often delayed due to the heterogeneity of clinical signs.
Surgery is the ideal treatment.
We report a case of a 19-year-old patient who presented with strangulated Bochdalek hernia causing intestinal obstruction, with favorable outcome following appropriate management.

Observation

A 19-year-old patient with no significant medical history presented with symptoms of intestinal obstruction, including cessation of stool and gas passage, associated with bilious vomiting and no other associated signs.
On admission, the patient was hemodynamically and respiratorily stable, with a tympanic distended abdomen and patent hernial orifices. Rectal examination was unremarkable.
Pleuropulmonary examination revealed absent breath sounds on the left side.
An abdominopelvic CT scan showed a left-sided Bochdalek diaphragmatic hernia containing colonic structures (left colic flexure), spleen, and stomach, causing mass effect on the adjacent lung parenchyma and displacing the heart to the contralateral side, with distension of the cecum, ascending colon, transverse colon, and small bowel loops, with transitional level at the hernia sac and dilated left colic flexure to 78 mm, transverse colon to 69 mm, and cecum to 82 mm.

The patient was admitted to the surgical emergency department.
A midline supra- and infraumbilical incision was made.
Peritoneal effusion of low abundance was found, consisting of serous fluid, which was aspirated and evacuated. Left-sided Bochdalek diaphragmatic hernia with a neck measuring 15 cm containing spleen, transverse colon, left colic flexure, and viable but edematous greater omentum was identified, causing upstream colonic distension of 8 cm, cecum of 10 cm, and small bowel of 3.5 cm without signs of ischemia.

The procedure consisted of repair of the left-sided Bochdalek diaphragmatic hernia with two hemi-overlapping silk sutures, left thoracic drainage with a Joly drain, and left subphrenic drainage with a Salem tube.
The postoperative course was uneventful, and the patient was discharged on the fourth postoperative day.

Discussion

Bochdalek hernia is a congenital diaphragmatic malformation located in the left posterior aspect and also a rare cause of acute intestinal obstruction.
It is often diagnosed in childhood and rarely revealed in adulthood.

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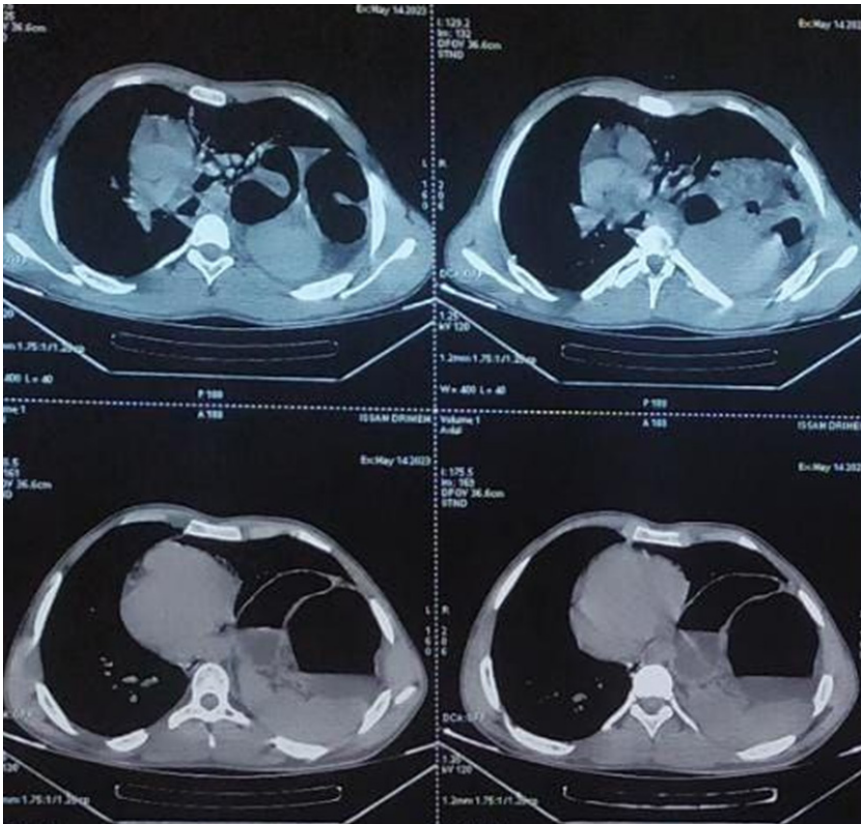

Figure 1: CT image of Bochdalek's hernia.

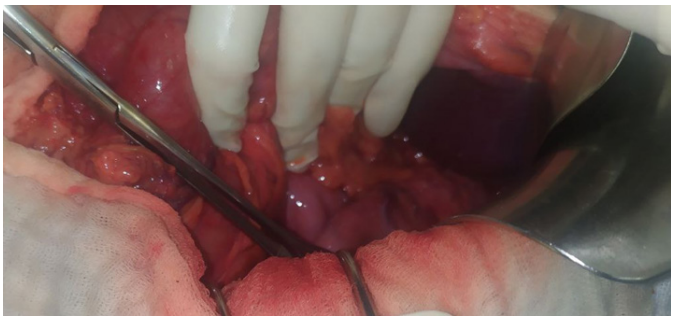

Figure 2: Intraoperative image of bochdalek's hernia.

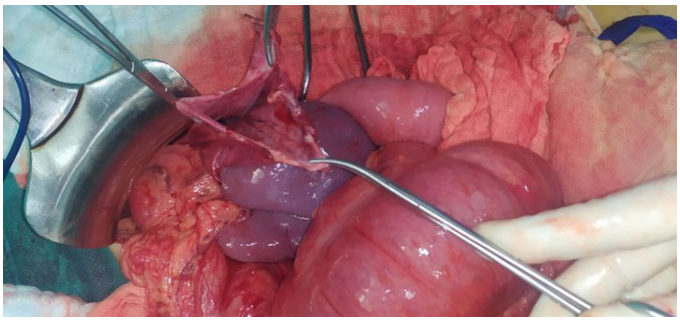

Figure 3: Intra-operative image of the hernia sac.

In adults, Bochdalek hernia is often asymptomatic, explaining its incidental discovery, unless strangulated.

Most neonatal Bochdalek hernias are located on the left side of the thorax (in 70 to 90% of cases).

A left-sided Bochdalek hernia may contain the gastrointestinal tract, spleen, liver, pancreas, and omentum.

On the other hand, a right-sided diaphragmatic hernia is rarer because the pleuroperitoneal canal narrows earlier, and the liver supports the diaphragm and may contain the liver, gallbladder, kidney, and greater omentum.

Patients with this pathology often do not present clinical signs, but in some cases, thoracic pain with respiratory discomfort may occur.

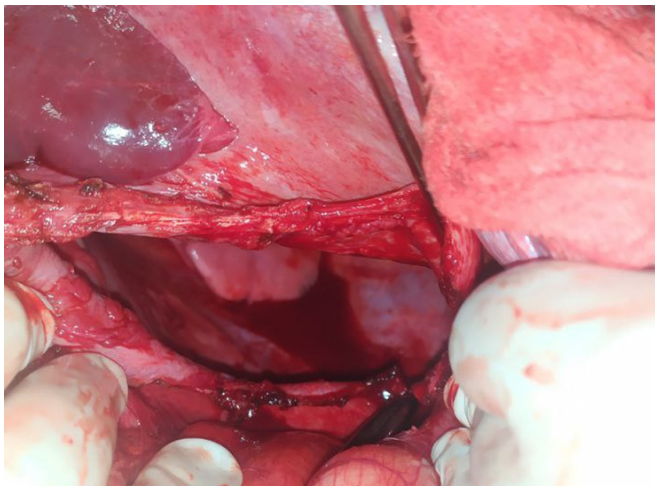

Figure 4: The hernia opening after release of the contents.

However, in the case of associated obstruction, the presentation is more pronounced; the patient usually presents with an obstructive syndrome that may be associated with thoracic pain.

Detection of diaphragmatic hernia relies on imaging; a chest X-ray can confirm the diagnosis, but thoracoabdominal CT scan has high sensitivity.

Generally, a thoracoabdominal CT scan is requested for visualization of hernial contents and detection of complications.

Treatment relies on surgery and consists of hernia repair after reduction of its content, either laparoscopically or conventionally, or through thoracic or abdominal approaches.

The abdominal approach is preferable for visualization of hernial contents and viability, and the hernia is better exposed after content reduction.

After reduction of hernial content, the hernial sac is resected, and the diaphragmatic defect is closed with non-absorbable sutures.

It is preferable to place a prosthesis for reinforcement of diaphragmatic sutures and to prevent recurrences.

A drain is placed in the thoracic cavity to counteract thoracic depression.

Conclusion

Bochdalek diaphragmatic hernia is a rare cause of intestinal obstruction, often diagnosed in childhood.

Thoracoabdominal CT scan remains a very useful examination for diagnosis and detection of complications, particularly hernial strangulation, neck width, and hernial sac contents.

The treatment of Bochdalek hernia is surgical, with various approaches possible.

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