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Case report

Bochdalek hernia: A rare case report of adult age

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HIGHLIGHTS

- Bochdalek hernia is the most common type of Congenital diaphragmatic hernia and constitutes 85% of cases.
- Bochdalek hernia (BH) in adults is extremely rare.
- Patient was operated laparoscopically.
- We present a BH case in a adult patient and discuss the literature.

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ABSTRACT

Introduction: Bochdalek hernia is the most common type of congenital diaphragmatic hernia and constitutes 85% of cases. Bochdalek hernia (BH) in adults is extremely rare. We present a BH case in an adult patient and discuss the literature.
Presentation: 22-year-old female patient with abdominal pain, occasional cramps, dysphagic problems, constipation, shortness of breath and choking for about 2 years applied to our clinic.
Diagnosis: A defect about 5 cm in the left hemidiaphragm posterior area and herniation of intra-abdominal fat plan in the left hemithorax was seen in intravenous and oral whole abdominal CT.
Treatment: Patient was operated laparoscopically. Transverse colon and a large portion of the omentum entering into hemidiaphragm were pulled in to intraperitoneal area carefully. Approximately 10 × 8 cm intraabdominal mesh was fixed to the defect area with the help of laparoscopic tacker.
Conclusion: Adult BH is very rare and when confronted laparoscopic treatment with mesh fixation can be performed safely.

1. Introduction

Congenital diaphragmatic hernia (CDH) characterized by protruding abdominal organs into the thoracic cavity through the posterolateral diaphragmatic defect and has high mortality [1]. The incidence of CDH is 1 in 2500 births and left congenital diaphragmatic hernias are more common than right-side hernias (85%–12%) [1]. Although CDH are diagnosed prenatally or in the immediate postnatal period, diagnosis in 5–25% of cases can be late, and could be detected during routine examinations or examination because of respiratory or gastrointestinal problems [1].

Bochdalek hernia (BH) is a congenital diaphragmatic hernia caused by the failure of the posterolateral diaphragmatic foramina to fuse properly; it results in the displacement of abdominal components into the thoracic cavity [2]. This occurs mainly during the ninth or tenth week of fetal life [2]. Bochdalek first described this anomaly in 1848 [2]. The incidence is reportedly 1 in 2200–12 500 live births, and Bochdalek hernia (BH) usually occurs (80%–90%) on the left side [2]. Bochdalek hernia in adults is extremely rare; with less than 100 published cases in the literature. Larger defects in BH are associated with pulmonary hypoplasia on the affected side and respiratory distress syndrome after birth [3]. Minor defects are not associated with a deficit in lung development and may be asymptomatic until herniation of abdominal contents into the thoracic cavity with respiratory consequences [3]. Colon is the most common intra-abdominal organs migrating through the diaphragmatic defect and may cause large bowel obstruction [3].

In our case, there was no bowel obstruction although a big part of transverse colon and omentum were in thorax.

Surgical repair of the defect is the recommended therapy for all patients with BH, regardless of the presence of symptoms.

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Management of a BH includes reducing the abdominal contents and repairing the defect through laparatomy or thoracotomy [2]. Surgical repair has been done by laparatomy, traditionally, however since laparoscopy was used, laparoscopic treatment was started to be used more often due to less hospital stay and early work starting time [4]. Both laparoscopic and thoracoscopic repairs of BH have been reported [2]. The procedure of choice depends on the surgeon's experience [2]. Small defects are easier to repair, but larger defects may involve a reduction of the intra-abdominal contents [2].

In this article we aimed to report a 22 years old patient operated and followed up for Bochdalek hernia in our clinic. We believe this report is going to add important valuable information to the medical literature. Although it is not the first report discussing Bochdalek hernias with laparoscopic repair BH in adults is extremely rare and could be misdiagnosed. Bochdalek hernia should be in mind in case of patient presenting with intestinal and pulmonary symptoms.

1.1. Case report

22-year-old female patient had complaints such as abdominal pain, occasional cramps, dysphagic problems, constipation, shortness of breath and choking for about 2 years. There was no history of thoracic or abdominal trauma. There was no relevant past medical history. Patient and family psychosocial history were normal. Physical examination was unremarkable. The bowel sounds were audible on the left side of the chest. CT was used as diagnostic methods because of its acceptable diagnostic rate and easy availability. Routine blood test were done and were non significant. A defect about 5 cm in the left hemidiaphragm posterior area and herniation of intra-abdominal fat plan with transverse colon in the left hemithorax was seen in intravenous and oral whole abdominal CT (Fig. 1). In the differential diagnosis other thoracic pathology were considered such as tension pneumothorax, left middle lobe collapse, air space consolidation, pericardial fat pad, sequestration of the lung, mediastinal lipoma, or anterior mediastinal mass. They were ruled out by plain film chest radiography and CT. After all no challenges met when attempting to diagnose the Bochdalek hernia.

1.2. Therapeutic intervention

Patient was operated laparoscopically. Cefazolin IV 1 gr antibiotic was given within 1 h before the surgery for prophylaxia and one more dose was given in 24 h postoperatively. The abdomen was insflulated from umbilical trocar. Exploration showed about one third of the transverse colon and a large portion of the omentum majus entering to left diaphragm in a 5 × 6 centimeter defect area in posterior lateral left hemidiaphragm (Fig. 2). The adhesions were carefully released. The herniated contents were carefully reduced to the peritoneal cavity through the hernia defect. There were no ischemic changes of the bowel, and omentum. Structures entering into hemidiaphragm were pulled in to intraperitoneal area carefully. Approximately 10 × 8 cm intraabdominal mesh was fixed to the defect area with the help of laparoscopic tacker (Fig. 3). There were no significant events during the procedure. We opt to tackle the hernia laparascopically because of its being easy and practical. One flat drain was placed under the left diaphragm at the end of the surgery. Post-surgical pain was treated with one pain medication Nonsteroidal anti-inflammatory drugs (NSAIDs) such as diclofenac or with a combination of contramal if necessary. No complication was observed postoperatively and patient was discharged. This case report was written with the patient's full, informed, written consent, available if requested.

1.3. Follow up

The patient's postoperative recovery was uneventful there was no pneumothorax and lung fields were clear. The patient was discharged on the 3rd day in satisfactory. No post-operative CT scan was performed. At 6 month follow-up, patient was well having no problem and is now on regular follow-up with us in the out-patient department. Patients symptoms were all improved in the follow up. The procedure was accepted helpful.

2. Discussion

Diaphragmatic hernia through the posterolateral foremen of Bochdalek is the commonest type of CDH and more common on the left side (85%) than on the right. Left sided hernia include spleen,

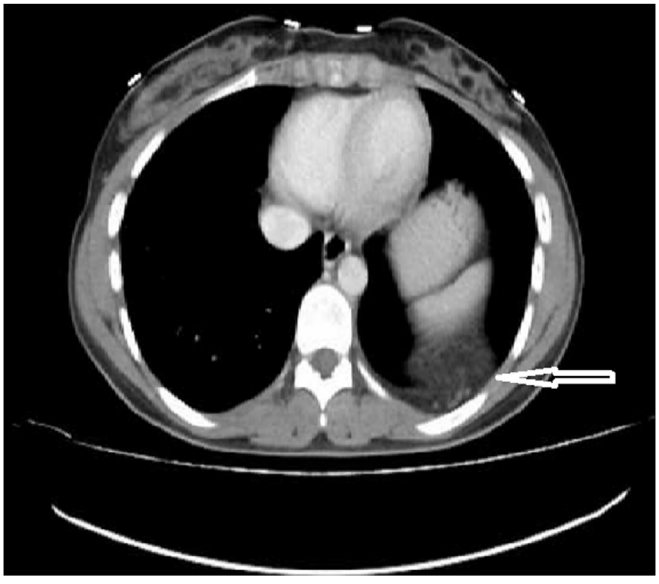

Fig. 1. Computerized tomography view of defect (arrow).

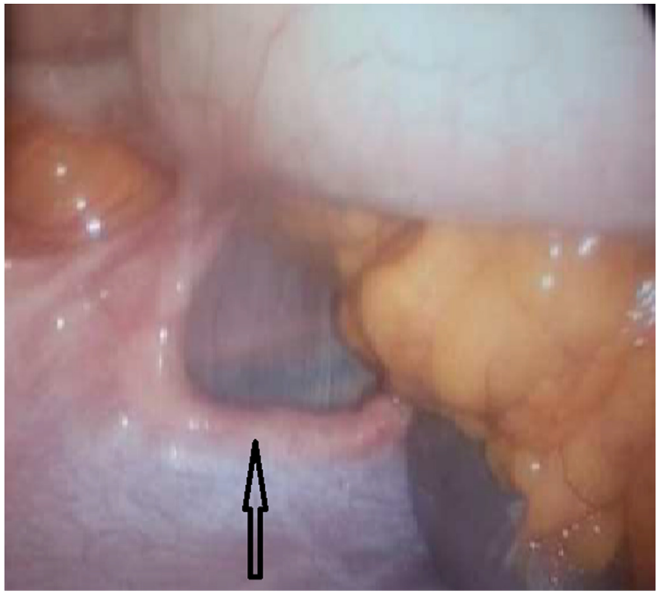

Fig. 2. Laparoscopic view of defect.