

Bochdalek hernia (Acute gastric obstruction and laparoscopic approach)

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ABSTRACT

Bochdalek hernia is a rare clinical entity which consist of a lack of development of the diaphragm. Its diagnosis is more common in children and in relation to respiratory symptoms. But it is also possible to appear in adulthood and usually related with acute digestive problems. Due to acute presentation often require emergency surgery. After reviewing the current literature, laparoscopic approach seems to be the technique of choice, with or without mesh placement. We report a new case of a young man with acute obstruction syndrome and laparoscopic treatment.

Keywords: Bochdalek Hernia; Gastric Obstruction; Laparoscopic Approach

1. INTRODUCTION

Bochdalek hernia is a congenital pathology which consists of an incomplete development of the diaphragm, which entails the persistence of a hole or weakness in the posterolateral side of the diaphragm. This lack of development can take place at different times of embryogenesis between the sixth and tenth week. If the disorder takes place in the sixth-seventh week of gestation, pleuroperitoneal membranes have not been formed yet so there will be a complete absence of hernia sack. But if it happens around the eighth week, these membranes can have been already formed, and what we will find is a diaphragmatic eventration. Bochdalek hernia itself is the first case.

Congenital diaphragmatic hernias are rare (excepting hiatal hernia), and they can be approximately founded one in every 3200 children born alive [1]. Bochdalek hernia is much more frequent compared to Morgagni-Larry hernia, and also more usual in the left side against the right one. Bilateral cases rise up to 3% of children [2,3]. This can be explained anatomically, as the last side

in developing is the right one and also, liver in the left side project the development of hernia across little sacks.

From a clinical point of view, 90% are diagnosed in childhood and usually associated with pulmonary hypoplasia due to the compression of the lung. This situation carries on acute hemodynamic and respiratory failure that require treatment. Those in the left side develop chronic symptoms depending on the size [4].

Diagnosis of Bochdalek hernia in adulthood is extremely rare and most cases founded in the literature were diagnosed as acute gastrointestinal problems compared to cardiorrespiratory symptoms, unlike what happens in childhood [5]. Commonly, we found patients who are free of symptoms for years, and suddenly or related to minimal effort or trauma they start with an acute clinical problem. Severe trauma or recent surgery should suggest the presence of a traumatic diaphragmatic rupture. Many diagnostic steps may be useful, as a single x-ray or a gastrointestinal study [5]. But up to date helical tomography seems to be the technique of choice; and magnetic resonance has not already shown benefits except in cases of doubt [6]. Due to in adulthood we are used to find an emergency problem and the differential diagnosis with traumatic rupture of the diaphragm is not always possible, this clinical entity is usually indication of emergency surgery because of the potential complications arising from it [7].

2. CASE REPORT

We present the case of a 28 years-old man without medical or surgical pathology; who is examined in the emergency room due to a lumbar and epigastric pain since two days. In the last 24 hours the patient had developed also oral intolerance with vomiting. The man did not remember any prior injury or trauma.

The examination showed difficulty breathing, need of air and a mild pain in the abdominal exploration.

Analytically leukocytosis was founded with no other alteration. In the early explorations a chest radiograph

was included where we observed the stomach above the diaphragma. (**Figure 1**)

Endoscopy was performed and a gastrointestinal transit reported intrathoracic stomach with possible gastric volvulus due to hiatal hernia as most probable diagnosis. (**Figure 2**)

Endoscopic decompression and nasogastric aspiration were tried but the evolution was not satisfactory and finally emergency surgery was decided.

Laparoscopic approach was performed. A Bochdalek diaphragmatic hernia was found with gastric, colon and spleen inside thorax (**Figures 3 and 4**) and without the presence of hernia sack. Laparoscopically we reduced the organs to abdominal cavity (**Figure 5**), we putted a chest drainage and proceeded to a primary free-tension herniorraphy (**Figure 6**).

Postoperative course was good and free of respiratory or digestive symptoms. In subsequent clinical and radiological controls, the patient keeps asymptomatic.

3. DISCUSSION

Bochdalek hernia was described in 1848 [8]. In adulthood is a very rare clinical entity with very few cases

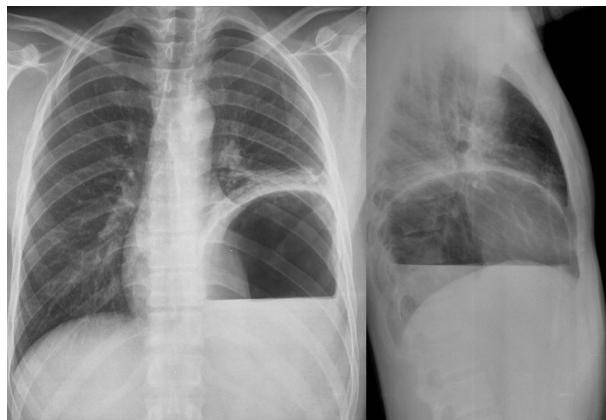


Figure 1. X-Ray at diagnosis moment.

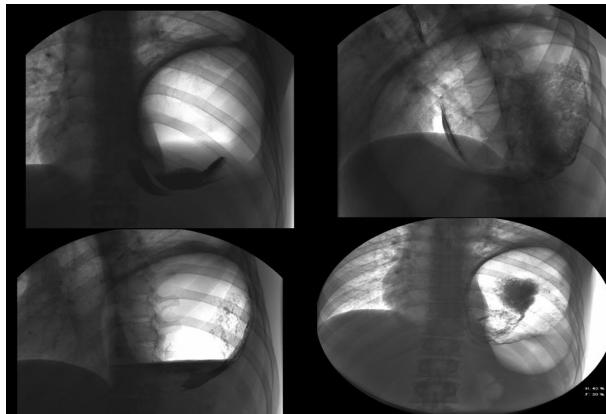


Figure 2. Gastrointestinal study.

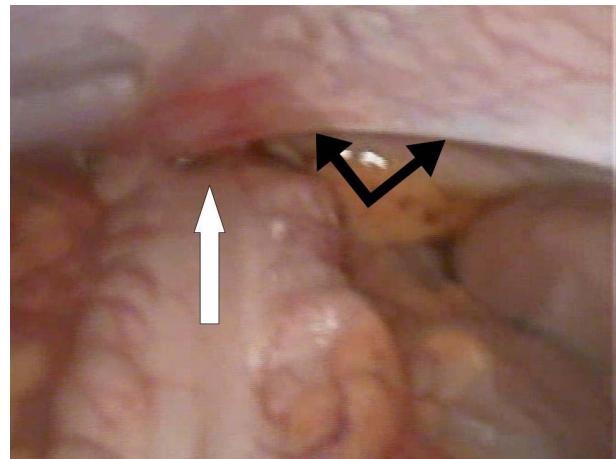


Figure 3. Laparoscopic findings. White arrow: large bowel and double black arrow: diafragm.

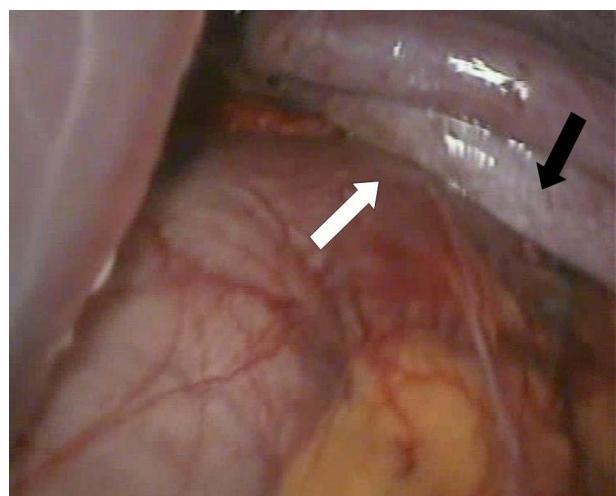


Figure 4. Laparoscopic findings. Stomach after reduction of large bowel into cavity and partial reduction of it (white arrow). Diafragm (black arrow).



Figure 5. Reduction into cavity of the spleen.

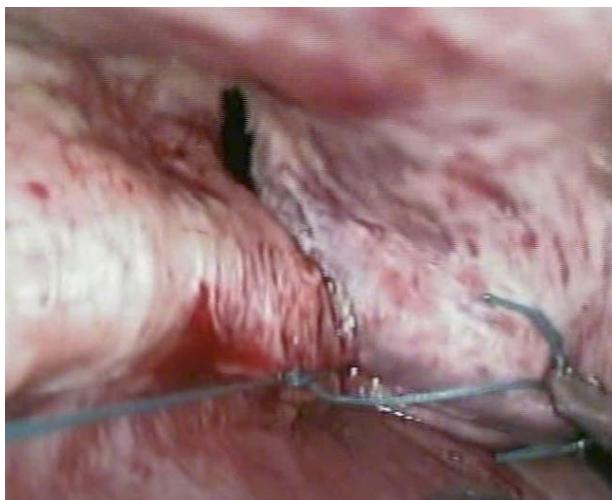


Figure 6. Primary suture of diafragma.

included in the literature. It can lead us not to pay attention enough to this pathology in the emergency room, and a recent review shows that also 38% of cases were initially wrong diagnosed [5].

Unlike what happens in childhood, clinical manifestations are mainly gastrointestinal and in all cases reviewed in the literature they course as an acute problem or are diagnosed incidentally.

Surgery is the initial treatment due to potential complications, and unless certain exceptions or diagnosis during elective surgery, it is an indication of emergency surgery because its course is indistinguishable from a traumatic rupture of the diafragma [7].

Regarding the type of treatment is where there are some disputes, and generally in relation to the approach. You can try both thoracic and abdominal approaches, with no scientific evidence to support one or the other. Several articles bring cases operated by chest (thoracoscopy or thoracotomy) [9,10] and according to a recent review, this is the most common approach for Morgagni-Larrey hernia [11] and seems to be a good alternative in case of recurrence after a abdominal approach. But the trend seems to support an abdominal approach due to the potential gastrointestinal complications that may have been caused by the hernia, and that would be better repaired by abdominal approach [12].

Technique itself has also alternatives. The disjunction between laparotomy or laparoscopy appears to be resolved in favor of laparoscopic surgery. Well demonstrated advantages of laparoscopy, are also applicable to this disease, so there are authors who suggest it as the gold standard of this surgery [13] also in cases of acute and chronic presentation if the patient is stable and if done by expert laparoscopic surgeons [14]. Another technical issue is whether or not to place a mesh for the correction

of the hernia defect. There is no evidence to support either method. Several authors describe successful without the use of mesh [10,13,15], however the current trend is proceeding to an hernioplastia thanks to the development of meshes that allow them use intraabdominally [16,17]. But there is no studies that demonstrate the advantages of either technical or compare the rate of recurrence or long-term results.

4. CONCLUSION

The presentation of a Bochdalek hernia in adulthood is rare but is necessary to know it well because, at present, a large number of diagnoses are wrong initially. It usually appears in acute way and usually related to gastrointestinal problems, unlike what happens in childhood, where clinic is mainly respiratory.

Treatment is surgery and the approach we recommend is laparoscopic approach against the thoracic one. Surgeons must be experts in laparoscopy and this type of surgery.

The use of mesh is controversial because of the absence of long-term results but it seems more suitable at present. In the absence of tension or very small defects we can choose a primary suture.

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