

Bochdalek's Hernia in Adults (Kidney in the thorax): About a clinical case

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Abstract:

Background: Bochdalek's hernia is a rare form of congenital diaphragmatic hernia, due to a defect in closure of the thoracoabdominal foramen during embryonic development, which manifests itself in respiratory distress in the newborn, causing high mortality. In adults, it is even more rare and often asymptomatic. We report the case of a BOCHDALEK hernia, which went unnoticed until the age of 26 in a young woman, where it manifested itself as a serious complication (gastric volvulus), which subsequently required several surgeries and where the abdominal approach was preferred to thoracotomy.

Key Word: BOCHDALEK's hernia - congenital diaphragmatic hernia - respiratory distress- kidney in the thorax.

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I. Introduction

Congenital diaphragmatic hernia is a rare pathology, best known in children, where it often manifests itself at birth by acute respiratory distress causing mortality estimated between 40 and 50% [1]. In adults, it remains exceptional, however certain late forms which go unnoticed at birth, often manifest themselves in spectacular clinical pictures. These late forms often pose diagnostic and therapeutic problems, with the particularity of the difficulties encountered during repairs due to the loss of the right to cite abdominal organs, which have remained outside the peritoneal cavity for a long time, this aspect would be at the origin of serious postoperative cardiac and respiratory complications. We present the clinical case of a BOCHDALEK hernia diagnosed in a young woman during a complication and secondarily requiring repair to avoid recurrences and the complications it can cause.

II. Clinical case

This is a 26 years old patient without medical history, who was referred to us by a colleague practicing in the south of the country for the surgical management of a hernia of the left diaphragmatic dome.

The surgeon said that the patient had two operations six months earlier: The first intervention, as part of the emergency for acute surgical abdomen. The intraoperative exploration revealed a gastric volvulus on the left diaphragmatic hernia, causing partial necrosis of the large gastric tuberosity. Resection of the necrotic part of the stomach was performed without treatment for the diaphragmatic hernia. Three months later the patient was operated on a second time for acute bowel obstruction on the bridles. The intervention consisted of a simple release of the intestinal bridles, still without treatment of the diaphragmatic hernia and then the patient, was entrusted to us by her first surgeon.

A series of explorations was carried out, including a chest x-ray from the front and from the side, as well as an gastro-duodenal clouding radiography (TOGD). These first examinations confirmed the diagnosis of left diaphragmatic hernia with ascent of part of the stomach, small intestine and the left colic angle in the thorax (Fig1-2), which was origin of a deviation of the mediastinum on the right side. The abdominal Chest scanner confirms the diagnosis (Fig3) with the visualization of the viscera intra thoracically (stomach, small intestine, left colon) but also the presence of an ascended left kidney in the thorax. The secretory function of this kidney was tested by intravenous urography (IVU), which had shown a well-preserved urinary secretion in both kidneys (Fig4).



Fig 1: Chest x-ray



Fig 2: Gastro Duodenal clouding

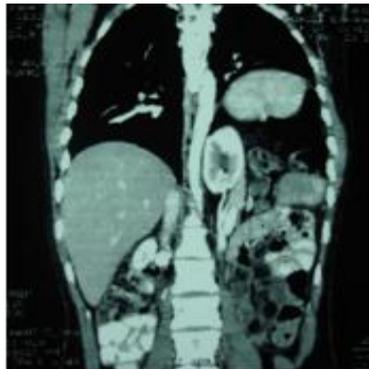


Fig 3: Abdominal scanner



Fig 4: Intravenous urography

The patient was operated after having checked all the biological, electrical and ventilatory constancies, by pure abdominal approach. per operative exploration, had found a posterior hernia of the left diaphragmatic couple in connection with a partial agenesis of this dome (BOCHDALEK's foramen) (Fig5) with presence in the hernial sac of a part of the stomach, of the small intestine, from the left colic angle, from the left kidney in the left para cardial position and a fixed and adherent spleen at the top of the sac (Fig6-7), site of a residual hilar abscess and a inferior polar capsular hematoma. These digestive structures were fixed by numerous adhesions, which had made their reintroduction into the peritoneal cavity quite difficult. A non-prosthetic diaphragmatic repair was carried out (due to the presence of the splenic abscess) by over-going overflows with non-absorbable braided threads decimal "0" without great difficulty and the intervention ends with a double aspirative thoracic drainage and abdominal capillary after repositioning of the intra peritoneal organs. The patient presented simple post-operative follow-ups, with resumption of feeding on second day and removal of the drains on 3th day and 4th day. We did not observe any abdominal compartment syndrome and the ventilatory indices remained stable, improved by early respiratory physiotherapy. Clinical and radiological control up to 60 months remains satisfactory and no recurrence has been observed (fig 8-9).

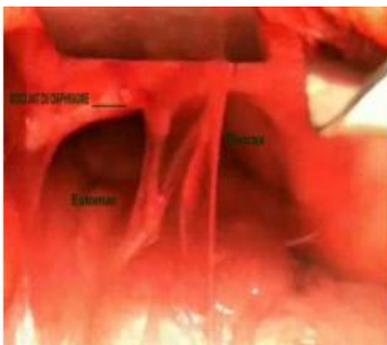


Fig 5: thoraco-abdominal communication



Fig 6: left colon in intrathoracic

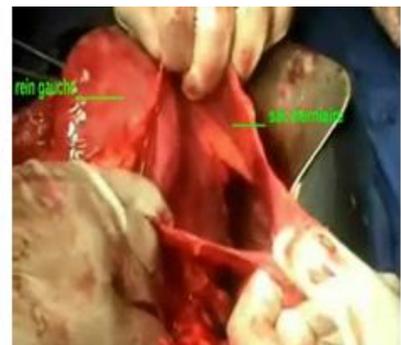


Fig 7: Left kidney after release



Fig 8: postoperative gastric opacification



Fig 9: postoperative chest radiography

III. Discussion

This clinical case presents two aspects worthy of discussion, on the one hand the diagnostic aspect and on the other hand the therapeutic aspect. What is the exact nature of the anomaly described? It was not a diaphragmatic eventration because there was a large diaphragmatic defect, not a traumatic rupture because there was no known trauma in the history. Presumably a non-expressive "congenital" hernia that went unnoticed. The latter, even if they are rare, their incidence is 4.3 (95% CI, 2.2- 6.5) per 10,000 births [2]. In our patient, BOCHDALEK's hernia remains the most likely diagnosis. Indeed, it is by definition posterior and more often on the left than on the right, making communicate the abdominal cavity with the pleural cavity, as it was during its first description by BOCHDALEK in 1848 [3], which seems to be the case in our observation or diaphragmatic defect is well objectified by the scanner. Often asymptomatic in adults, Bochdalek's hernia is said to manifest itself as serious complications in 46% of cases, with a mortality rate around 32%, generally due to the strangulation of the ascended viscera in the thorax [4]. Very few cases of gastric volvulus have been reported in the literature, however this complication of hernia, is often serious, it would in fact be related either to agenesis, or to a laxity of the gastrosplenic and gastrophrenic ligaments, especially on the left [5] causing a stomach fixation defect, making it free to rotate around its axis [6].

Multicut tomography with coronal and sagittal reconstructions, remains the most effective and useful imaging technique for the diagnosis of certainty, with a high sensitivity for soft tissue. Nevertheless, magnetic resonance imaging can be indicated in selected patients, especially in late hernias or in case of doubtful diagnosis [7], It shows hernias as well as complications such as intestinal strangulation or perforation. Therapeutically, the main concern has been the reintegration of organs into the abdomen, the latter having lost their place, with the risk of post-operative abdominal compartment syndrome [8], defined by intra-abdominal pressure greater than 30 mm Hg, described in the repairs of bulky ventral hernias. Also, to overcome this complication in view of a good replacement of the herniated organs, the abdominal route was preferred to thoracotomy. Advocates of the latter claim that it would have the improved ability to separate the adhesions between the thoracic viscera and the hernial sac [9], but Thoracotomy also appears to be associated with a higher rate of reoperation for gastrointestinal complications severe acute [10]. In our opinion the abdominal route remains the one that could offer better exploration and better access to the diaphragm. This route also allows an easier release of the organs, knowing that very often there is associated a common mesentery. However, due to the absence of randomized controlled studies comparing thoracic and abdominal approaches and open and minimally invasive approaches, the choice of repair remains at the sole discretion of the operator. This choice is influenced by his experience and the circumstances in which the surgery is performed (elective or emergency) [11]. As well as whether or not there are complications. Ideally, elective surgical repair remains the treatment of choice, at least it relates to the results of a series, where mortality was 5% in the elective path and significantly higher in the case of surgery emergency or it is estimated at 32%. [12]. Late after treatment, BOCHDALEK's hernia may become complicated by gastroesophageal reflux [13]. The role of the anti-reflux procedure during the repair of a hernia in these patients remains questionable, however [14].

IV. Conclusion

BOCHDALEK's hernia is a rare congenital hernia in adults and is often diagnosed easily on radiology. Long asymptomatic time, it remains dangerous through its complications (strangulation, volvulus and perforation in the thorax), requiring surgical treatment upon diagnosis and including prosthetic repairs by the abdominal route, would be a good alternative in adults to avoid recurrences

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