

Recurrent Left Bockdalek Hernia in Adult, a Rare Cause of Subocclusive Syndrome

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Rezumat

Recidivă simptomatică de hernie Bockdalek la adult, cauză rară de sindrom subocluziv

Scop: prezentarea unei situații clinice rare, sindrom subocluziv prin recidivă de hernie Bockdalek stângă, accentuând aspectele de diagnostic radiologic și de tratament chirurgical. Lucrearea prezintă cazul unei paciente de 36 de ani, cu antecedente de hernie Bockdalek operată în urmă cu 7 ani printr-un procedeu tisular pe cale combinată toraco-abdominală, ce se prezintă cu un sindrom subocluziv de dată recentă și un sindrom algic epigastric. Endoscopia digestivă superioară evidențiază un ulcer duodenal HP pozitiv, iar un examen CT este etichetat ca fiind normal de un prim radiolog. Reevaluarea radiologică atentă și reconstrucțiile CT au permis evidențierea unei mici recidive de hernie Bockdalek, cu unghiul colic stâng ascensionat transdiafragmatic. Tratamentul chirurgical a constat într-o frenorafie monoplan și o aloplastie de întărire cu plasă de polipropilenă ce acoperă larg defectul, prin laparotomie. Evoluția postoperatorie a fost favorabilă, pacienta beneficiind de avantajele sistemului Fast-Track, cu externare în ziua a 2-a postoperator. Până în anul 2011, în literatura mondială sunt

publicate un număr de 173 de cazuri de hernie Bockdalek, nici un caz nefiind o recidivă herniară. Hernia Bockdalek este o entitate clinică rară, cu o simptomatologie înșelătoare, ce predispune la erori de diagnostic și întârzierea tratamentului chirurgical, cu posibile consecințe nefaste. Tratamentul chirurgical, pe cale clasică sau laparoscopică trebuie să respecte principiile moderne ale herniologiei, aloplastiile de întărire prevenind apariția recidivelor.

Cuvinte cheie: hernie Bockdalek recidivată

Abstract

Purpose: To present a rare clinical case of a subocclusive syndrome caused by recurrence of a left Bockdalek hernia, with emphasis on the radiological diagnosis and surgical treatment. The current paper presents a 36 year old female with past surgical history of Bockdalek hernia repaired 7 years ago using a diaphragmorrhaphy by thoraco-abdominal approach who presented with a subocclusive syndrome and epigastric pain. Upper endoscopy showed a duodenal ulcer positive for H. pylori. Initial abdominal CT scan was read as negative. On a closer evaluation of the CT images, a small Bockdalek hernia was appreciated, with the elevation of the left colic angle through the diaphragm. Given the occlusive symptoms, the patient underwent surgical treatment with diaphragmorrhaphy and alloplasty with polypropylene mesh, using an open approach. Postoperatively, the patient had a favourable course, being discharged home two days later. To

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date, there are 173 cases of Bockdalek hernia in the the medical literature, but none with a recurrence. Bockdalek hernia is a rare disease, with non-specific symptoms. It has a broad differential diagnosis that may delay early identification and management. The surgical treatment, either open or laparoscopic, must follow the current recommendations of the surgical societies, including mesh alloplasty to prevent recurrences.

Key words: recurrent Bockdalek hernia

Introduction

Bockdalek type diaphragmatic hernia represents 90 % of all diaphragmatic hernias. First described by McCauley in 1754 and then popularized by Vincent Alexander Bockdalek in 1848, the congenital Bockdalek hernia interests 1/200-12 500 newborns; usually manifested in childhood, the adult forms represent only 0.17-6 % of all. Defect of closure of the peritoneal - pleural channel in the 8th intrauterine week, Bockdalek hernia located in the lumbocostal triangle is more common on the left side (85%) and in 20% of cases occurs with other malformations, mainly cardiac or chromosomal mutations. Males are more frequently concerned, with a ratio of 3/2 in favour of men.

The clinical image of Bockdalek hernias in adults is dominated by two large pictures: digestive or respiratory - restrictive, sometimes confounding.

Case presentation

Patient aged 36 years, mother of a 12 year old child, operated in 2003 for a left Bockdalek hernia through a combined abdomino (xipho - umbilical laparotomy) - chest (left axillary thoracotomy) technique, having a heart pain angina of de novo type with ECG changed since 2010, treated with Concor and Aspenter; poly-allergic, addresses to the outpatient center for an upper abdominal pain: epigastrium and left upper quadrant, with relatively recent emergence (2 weeks), as well as for bowel disorders in the form of sudden constipation (1 stool largely reduced in 5-6 days), maintaining gas transit. The patient presented to our service with the results of some recent investigations: upper endoscopy showing a small duodenal ulcer Helicobacter +, and an initial CT interpretation of «normal CT». Laboratory findings showing 7,300 WBC, 62% neutrophils, PCR in normal range, normal lactate, normal blood chemistry. Normal chest radiography. (Fig. 1)

Knowing the patient's surgical history and the clinical picture of the relatively sudden occurrence, in the midst of apparent health, we request a second radiological opinion which reveals the presence of a Bockdalek type diaphragmatic hernia recurrence of about 3 cm with herniation of the left colic angle, dilation of the colon transversely upstream and descendant collapse, without radiological signs of



Figure 1. PA chest radiograph, normal radiological aspects

ischemia, without pleuro - peritoneal unobstructed fluid, without consequences on the hernia adjacent left lung. (Fig. 2)

Given the abdominal scar and the intimate contact of the colon migrated intraherniary with the postero - inferior edge of the spleen and the upper kidney pole, we decided for a classic approach on the old xipho-umbilical incision. Extensive adhesiolysis. We used the transverse colon as a guide to reach the hernia. The anterior margin of the spleen and the convex surface adhere closely to the previous phrenoraphy, which is difficult to decollate. We identify the diaphragmatic hernia inferior between the spleen and the left kidney pole with 3 cm in diameter, we easily reduce the colon which shows no signs of distress and then we prepare the edges of the circumferential defect on about 5-6 cm. We make a suture using separate non- absorbable threads of Prolene 1, we exufflate the left pneumothorax created and strengthen the suture with a polypropylene mesh of 10 x 15 cm fixed with Absorbatak^R. It is to be noted that the local anatomy makes it almost impossible to suture correctly, the defect is in reversed "V" shape and the lower limit is represented by the costal springs, the muscles being poorly represented in the lower 1/3 of the hole. (Fig. 3, 4)

We chose the broad coverage of the defect with prosthetic material, with the mesh inserted behind the upper third of the left kidney previously decollated. (Fig. 5)

The postoperative evolution was extremely simple, with discharge from hospital on the 2nd day after surgery under minor pain reliever treatment. The postoperative control CT scan is normal, and the diaphragm defect disappears. (Fig. 6)

Discussions

Bockdalek hernia is a rare entity, but should be considered in the differential diagnosis of pain syndrome of the left



Figure 2. The CT revealed the presence of Bockdalek hernia, herniation of the left colic angle and the difference in size between the overlying colon (relaxed) and the underlying colon (flat)

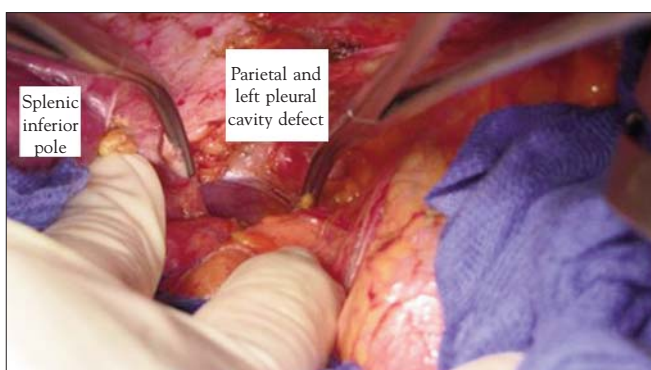


Figure 3. Parietal defect spotted with 2 clamps, without hernial sac itself, the left pleural cavity opened

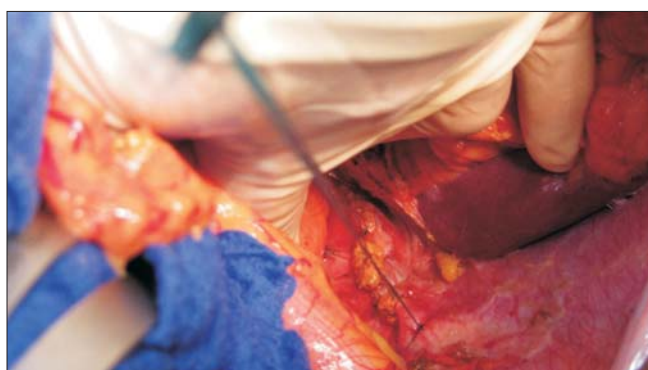


Figure 4. Monoplane phrenoraphy with insulated threads of Prolene 1. Exufflation of the left pneumothorax without pleural drainage

hypochondrium (rarely the right one) in young patients. The peculiarity of the case is given by the recurred character of the hernia, after a non-prosthetic cure dating from 2003, occurring in adulthood as well. Also, the coexistence of the duodenal HP + ulcer and the negative initial interpretation of the thoraco - abdominal CT could induce a precautionary therapeutic approach, risking to strangle the herniated bowel and with dramatic consequences for the patient.

Despite the development of diagnostic techniques, the literature discloses only a number of 173 cases of Bockdalek hernias in adults (2). The proportion of incidentally discovered asymptomatic hernias through imaging increased by 14 %, while pain is the symptom that dominates the clinical picture in about 70% of patients. The obstructive phenomena are present in over one third of cases, as well as the respiratory phenomena. Strangulation as a first symptom occurs in 28% of patients (2).

Due to the recurrent hernia, in this case we chose the open abdominal way, with laparoscopy as the first option in operated hernias per primam intention. In literature, the percentage of different ways of approach is as follows: laparotomy 38%, thoracotomy 32%, laparoscopy 12%, thoracoscopy 3%, combined 16%. In hospital 'Sf. Constantin' in Braşov we have introduced the concept of Fast - Track both for colorectal

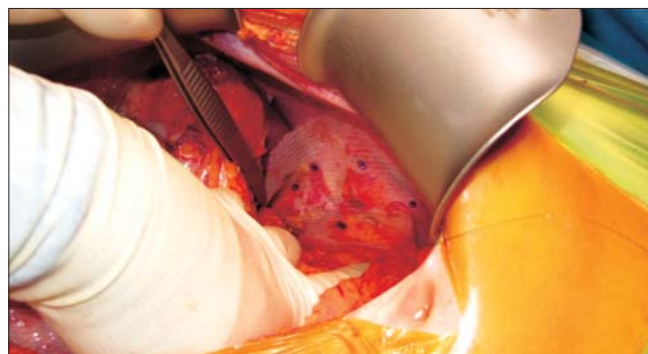


Figure 5. Final aspect. Reinforcement mesh fixed circumferentially with AbsorbatacR

surgery and for the rest of the abdominal interventions, either conventional or laparoscopic, which allows the patients to be discharged 2-3 days postoperatively, even after traditional interventions. An adequate anaesthesia, using autostatic retractor Thompson^R, the absence of drains and probes, rapid resume of per os intake and vigorous combat of nausea and ileus are just some of the measures making Fast - Track a successful concept. In this way, differences shown by literature between the duration of hospitalization after conventional operations



Figure 6. Control CT before discharge at Z2. Minimum residual pneumoperitoneum. Integrity of the diaphragm drawing

(10 days) and laparoscopic (4 days) significantly decrease.

Another aspect frequently shown by medical literature is the high rate of incorrect or delayed diagnoses, most often caused by the variety of clinical pictures that Bochdalek hernia may present, the rate can reach 38% (2,3).

The simple PA radiography may be negative in small hernias, as it was in this case, the three-dimensional CT reconstruction is currently the golden standard in the diagnosis of these defects. (2,4)

Surgical treatment continued to evolve from the first intervention attributed to Aue in 1901 (5), leading to laparoscopic interventions (Al Emadi 1998) or thoracoscopic interventions (Silen 1995) (6,7). In 1975, Christiansen first used the synthetic mesh to strengthen Bochdalek hernia (8,9,10). The mesh is much more used in cases operated through laparoscopy (60 %), compared to classical surgery (7%). The difference can be explained by the increasing use of laparoscopic approach and of the mesh compared with the pre – laparoscopic stage, when the use of meshes was not so widespread.

Literature does not describe relapses after the cure of Bochdalek hernia (2), this case being the proof that Bochdalek hernia treatment must comply with all these modern principles of herniology including reinforcement mesh, otherwise recurrence is possible.

Conclusions

Bochdalek hernia is a rare clinical entity manifested through various clinical frames, dominated by pain, ileus and respiratory phenomena, but which undetected and untreated in time can result into life-threatening complications.

The surgical approach is dominated by the abdominal,

conventional or laparoscopic methods and the share of using reinforcement mesh is constantly expanding. Non-prosthetic techniques predispose to relapse due to the anatomical features of the lumbar-costal trigone.

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