Annals of Medicine and Surgery 71 (2021) 102936

Contents lists available at ScienceDirect

Annals of Medicine and Surgery

journal homepage: www.elsevier.com/locate/amsu

Case Report

An atypical presentation of a strangulated bochdalek hernia in a 60-year-old woman

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ARTICLE INFO

Keywords:
Bochdalek hernia
Open surgery
Strangulation
Case report

ABSTRACT

Bochdalek hernia (BH), resulting from the failure of posterolateral diaphragmatic foramina to fuse, is the most common congenital diaphragmatic hernia and usually manifests in pediatric age with life-threatening complications.

Here, we report the case of a 60-year-old female with a left-sided Bochdalek diaphragmatic hernia, who presented with abdominal pain and dyspnea. The patient was successfully treated by open surgery approach but the patient died due to the lung doesnt expand after atelectasis in the third day after surgery.

We know that a few cases of bochdalek hernia have been reported in the elderly by the medical literature, but what distinguishes our case is that the hernia was strangulated and the patient died as a result of non-expansion of the lung after its atelectasis following surgical repair.

1. Introduction

Bochdalek hernia is a subtype of congenital diaphragmatic hernia (CDH) which has prevalence approximately 1–4 cases per 10,000 live birth [1]. The prevalence does not appear to be associated with sex [2].

Bochdalek hernia is the most common of diaphragmatic defects (approximately 95%) [3].

It caused by an opening in the posterolateral diaphragm due to failure of normal closure of the pleuroperitoneal folds. Herniation is on the left side in (80–85)%of cases, on the right one in 10–15% of cases, and bilateral in <2% of cases. It is often accompanied by herniation of the stomach, intestines, liver, and/or spleen into the chest cavity. this may lead to pulmonary hypoplasia and pulmonary hypertension. Therefore infants often present in the neonatal period with severe respiratory distress.

The clinical presentation in adults has a wide variation and is mainly confined to the respiratory or gastrointestinal systems; which makes the diagnosis is a challenge. The accurate method to diagnose Bochdalek is computed tomography. The management is surgical either open surgery or laparoscopic with good prognosis.

Here, we report the case of a 60-year-old patient who arrived in the emergency room with dyspnea and sever abdominal pain.

This case report has been reported in line with the SCARE criteria [8].

2. Case presentation

A 60-year-old female patient was admitted to the emergency room in University Aleppo Hospital with complaints of abdominal pain, dysphagia, and shortness of breath. She had no record of thoracic or abdominal trauma and no previous comorbities. The psychosocial history of the patient as well as her family was normal. The patients had an arterial pressure of 135/70 mmhg, cardiac rate 65 b/min, and body temperature of 38 °C. Laboratory analysis showed white blood count 23 × 10^3 mm^3/l and haemoglobin:9 gm/dL, platelets:131, 000 mcl, Urea:100 mg/dL, Glucose:157 mg/dL, C-Reactive Protein (CRP):157 mg/l.

Bowel sounds were audible on the left side of the chest with the

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https://doi.org/10.1016/j.amsu.2021.102936
Received 18 September 2021; Received in revised form 3 October 2021; Accepted 7 October 2021
Available online 14 October 2021

diminishing of breathing sounds at the base of the left lung. A chest x-ray showed non_similar mass on the left side of the thorax containong lower lobe (Fig. 1). Computed Tomography (CT) Scan showed large left diaphragmatic hernia containing intestine, stomach, spleen and pancreas (Fig. 2). Uper gastric laparoscopy showed posterior diaphragmatic hernia of 2 cm in diameter without ulcers. Bochdalec hernia was diagnosed based on the above findings. Surgical approach was discuss and accepted by patient and family. operation was performed under general anaesthesia. Intraoperative findings were posterior diaphragmatic hernia with viable small bowel and transverse colon strangulated (Fig. 3). The intestine was retracted and the hernia was closed with direct suturing, as the operation took 60 minutes without the need for a blood transfusion. A tube was installed to drain pus but there is no leakage of pus. The patient was admitted to the intensive care unit for surveillance. Paracetamol and morphine were infused intravenously for pain relief and metronidazole with ceftriaxone to prevent postoperative wound infections. The patient's condition was deteriorated with a raised temperature,Where the patient was followed up for 3 days in the intensive care unit as a result of lung atelectasis and pneumothorax following the repair of the hernia. In addition, we performed repeated washing of the bronchi as a result of repeated formation of mucous plugs, but the final result was the death of the patient on the third day as a result of the lung not expanding after its atelectasis without benefit from thorax drainage and using intravenous ipratrobium and omep Conclusion

3. Discussion

Bochdalek hernia is a conginital malformation in the posterior part of diaphragm. It manifests itself early during the first stages of life. It has many complaints, the most important of which is high respiratory pressure during childhood. It is mostly located on the left side of the thorax, with some rare cases on the right side. Most of the main complaints are chest pain in addition to many problems such as digestive discomfort. As for adults, it is often not accidental and is discovered by chance unless it is strangulated, where the incidence of asymptomatic Bochdalek hernias in the adult population has been estimated to be anywhere between 1 in 2000–7000 based on autopsy studies [4,5]. Contents of left-sided Bochdalek hernias may include colon, stomach, spleen, small bowel, pancreas, and adrenal gland on the other hand, contents of right-sided diaphragmatic hernias typically include liver, gallbladder, kidney, and omentum [6]. The detection of this hernia is mediated by many investigations, the most important of which are computed tomography and upper gastrointestinal endoscopy. A study by Killeen ET al4 found computed tomography to have sensitivities of 78% for left-sided hernias and 50% for right-sided hernias [7]. Radical treatment is focused on open surgery, which prevents recurrence and ensures complete recovery, but many dangerous complications may appear, the most important of which is pneumothorax. In our case, a 60-year-old woman came to the hospital with a complaint of dyspnea and cough, in addition to poor general condition and abdominal pain but the patient was healthy before that and hasn't undergone any operations.

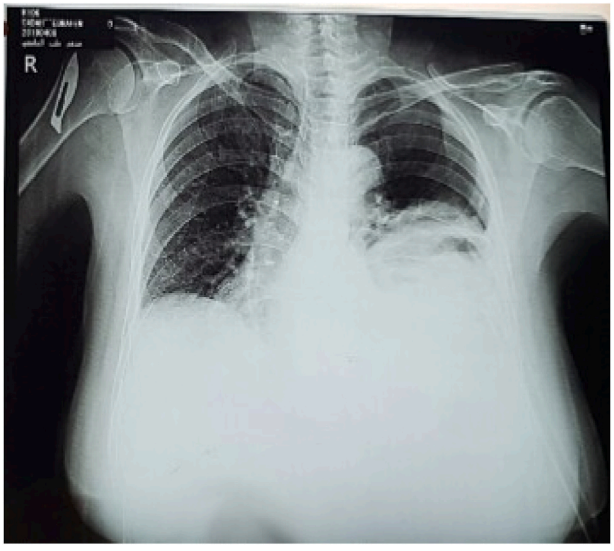

Fig. 1. A chest x-ray showed non_similar mass on the left side of the thorax containong lower lobe.

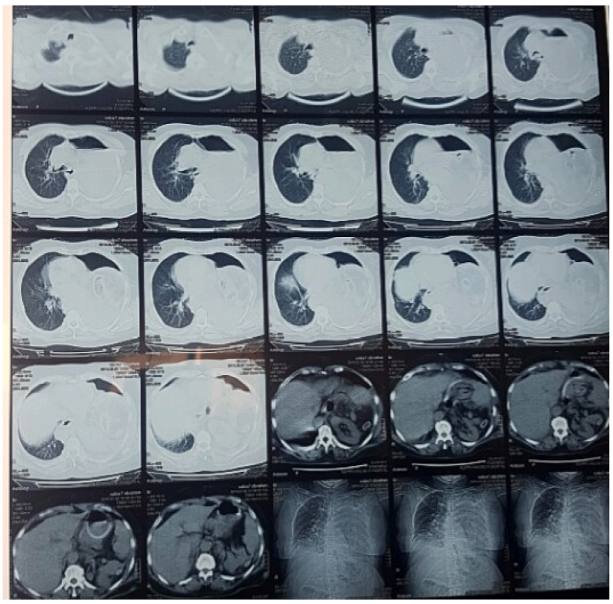

Fig. 2. Computed tomography of thorax that shows bochdalek hernia.

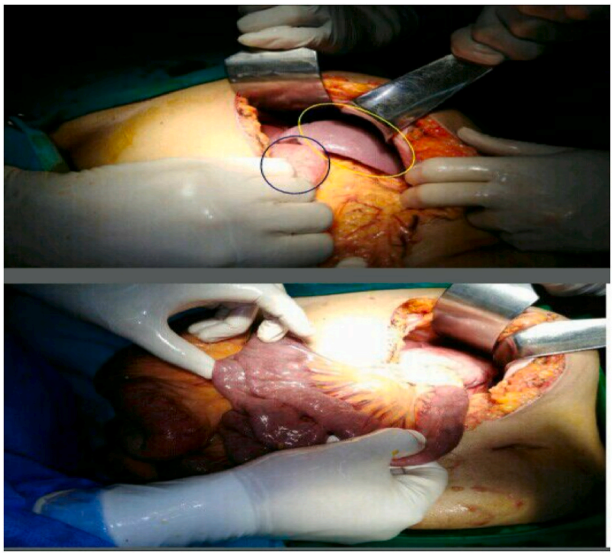

Fig. 3. The picture that shows hernia during the open surgery.

Examination of the abdomen revealed sever epigastria tenderness and Chest examination revealed weak breathing sounds in the lower left side of chest. Computed tomography, showed a bochdalek hernia contain small intestine and transverse colon. The management was done by emergency surgery, where the intestines were retracted and the hernia closed, after the operation, the patient remained for three days in the intensive care unit, where she was subjected to frequent bronchial lavage due to the presence of mucus plugs that impede breathing, but

the patient died on the third day due to the collapse of the lung and its lack of expansion, and this is the result of the pneumothorax that occurred after the repair of the hernia. From all of the above, we can conclude that Bochdalok's hernia is the most apparent in children, as it is characterized by many symptoms, the most important of which are acute respiratory symptoms. However, its appearance in elderly is very rare where it can persist to advanced ages without symptoms and this requires conducting many radiological investigations to detect it such as computed tomography. This case will provide a distinctive guidance to the surgeons that it is possible to have a Bochdalek hernia in elderly patients, so it is important to investigate it by radiological means such as computed tomography to avoid exposure to suffocation or the accompanying respiratory symptoms.

4. Conclusion

The presence of congenital bockdalek hernia in the elderly is a reality. It requires accurate radiographical diagnosis through computed tomograpghy scan and gastrointestinal endoscopy to treat it surgically or laparoscopic as soon as possible to avoid the occurrence of hernia Strangulation.

Ethical approval

This case reports didn't require review by Ethics committee, Aleppo university hospital, Aleppo university, Faculty of medicine, Aleppo-Syria.

Sources of funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Author contribution

Kusay Ayoub: contributed in study concept and design, data collection, and writing the paper.
Sarya Swed:contributed in data interpretation and writing the paper.
Hidar Alibrahim:contributed in writing the paper.
Mahmoud Alhamadeh Alswij:contributed in writing the paper.
Shorouk Alabdo:contributed in writing the paper
Nihad Mahli:contributed in reviewing the paper.

Research registration number

Not applicable.

Guarantor

Kusay Ayoub

Consent for publication

Written informed consent was obtained from the patient for publication of these two case reports and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Declaration of competing interest

All authors declared no conflict of interest.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.amsu.2021.102936.

References

[1] Addressing the hidden mortality in CDH: a population-based study.Burgos CM, Frenckner BJ Pediatr Surg 52 (4) (2017) 522. Epub 2016 Sep 23.
[2] Population-based study of congenital diaphragmatic hernia: risk factors and survival in Metropolitan Atlanta, 1968-1999.Dott MM, Wong LY, Rasmussen SABirth Defects, Res A Clin Mol Teratol 67 (4) (2003) 261.
[3] J. Deprest, P. Brady, K. Nicolaides, A. Benachi, C. Berg, J. Vermeesch, G. Gardener, Prenatal management of the fetus with isolated congenital diaphragmatic hernia in the era of the TOTAL trial, Gratacos ESemin Fetal Neonatal Med 19 (6) (2014 Dec) 338–348. Epub 2014 Nov 11.
[4] S. Salacin, B. Alper, N. Cekin, M.K. Gulmen, Bochdalek hernia in adulthood: a review and an autopsy case report, J. Forensic Sci. 39 (1994) 1112–1116 [PubMed] [Google Scholar] [Ref list].
[5] S. Nitecki, J.A. Mar-Maor, Late presentation of Bochdalek hernia: our experience and review of the literature, Isr. J. Med. Sci. 28 (1992) 711–714 [PubMed] [Google Scholar] [Ref list.
[6] S. Thomas, B. Kapur, Adult Bochdalek hernia: clinical features, management and results of treatment, Jpn. J. Surg. 21 (1991) 114–119 [PubMed] [Google Scholar] [Ref list.
[7] K.L. Killeen, S.E. Mirvis, K. Shanmuganathan, Helical CT of diaphragmatic rupture caused by blunt trauma, Am J Radiol 173 (1999) 1611–1616.
[8] R.A. Agha, T. Franchi, C. Sohrabi, G. Mathew, for the SCARE Group, The SCARE 2020 guideline: updating consensus surgical CAse REport (SCARE) guidelines, Int. J. Surg. 84 (2020) 226–230. The SCARE 2020 guideline: updating consensus surgical CAse REport (SCARE) guidelines Int. J. Surg. (2020), 10.1016/j.ijsu.2020.10.034.