Case Report

Spontaneous Rupture of Sac in Bochdalek Hernia Leading to Acute Intestinal Obstruction

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Abstract

Bochdalek hernia usually presents in neonates in the form of respiratory distress. Presentation as acute intestinal obstruction is extremely rare. We report a 6-month-old male infant with spontaneous rupture of the sac in a Bochdalek hernia leading to acute gastrointestinal obstruction. Diaphragmatic hernia can rarely present as acute intestinal obstruction due to spontaneous rupture of sac.

Keywords: Acute intestinal obstruction, Bochdalek hernia, Diaphragmatic eventration

Introduction

Bochdalek hernia is characterised by a defect in posterolateral part of diaphragm. This defect leads to protrusion of abdominal contents into the thoracic cavity. It is the most common type of diaphragmatic hernia and usually occurs on the left side. Most of such cases present in neonates in the form of respiratory distress. About 10%–20% of such cases present at later age groups. Common presentations of such late cases are nonspecific gastrointestinal and respiratory symptoms.[1] Presentation in the form of acute intestinal obstruction is extremely rare. We report one such case in a 6-month-old male infant with rupture of hernia sac as the catastrophic event leading to acute gastrointestinal obstruction as the presentation.

Case Report

A 6-month-old male infant was referred to us with complaints of abdominal distension, bilious vomiting and constipation since 2 days. He was the first child of his parents. It was a non-consanguineous marriage and the baby had an uneventful perinatal and neonatal period. There was no recent history of abdomino-thoracic trauma, acute, or chronic respiratory complaints. On examination, the child had tachypnoea and abdominal distension with exaggerated bowel sounds. There was absent air entry on left side with shifting of heart sounds to the right. Erect plain X-ray of the abdomen with chest was done [Figure 1]. It showed left-sided diaphragmatic hernia with mediastinal shift to right and multiple air fluid levels in abdomen. While the patient was being stabilised and resuscitated, we got a contrast-enhanced computed tomography of abdomen and chest done. It showed a small posterolateral defect in the left haemidiaphragm with herniation of large intestine, greater omentum, spleen and part of stomach. No associated abdominal pathology was reported. Since the child had acute gastrointestinal symptoms, an undiagnosed intra-abdominal pathology could not be ruled out. Hence, a decision to perform an exploratory laparotomy was taken using subcostal abdominal approach. Operative findings include incarcerated transverse colon, greater omentum, part of stomach and spleen and these were slowly and gently reduced through the tight diaphragmatic defect. The reduced contents had preserved vascularity and there was no associated malrotation of the intestines or any other abdominal pathology. Other findings include a well-defined hernia sac with a defect of 2 cm through which the contents had migrated into the pleural cavity [Figure 2]. The sac was excised and both anterior and posterior lips of the diaphraghmatic defect were approximated with polypropelene 3-0 intermittent sutures. Following this, the patient had an uneventful post-operative

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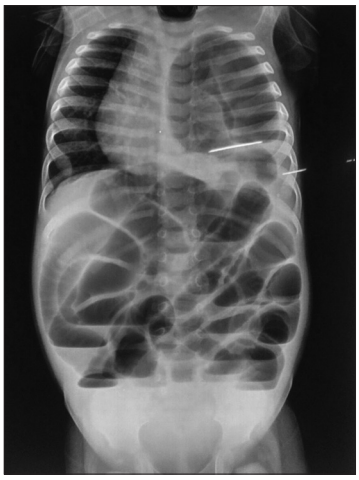


Figure 1: X-ray showing left sided diaphragmatic hernia with multiple air-fluid levels in abdomen

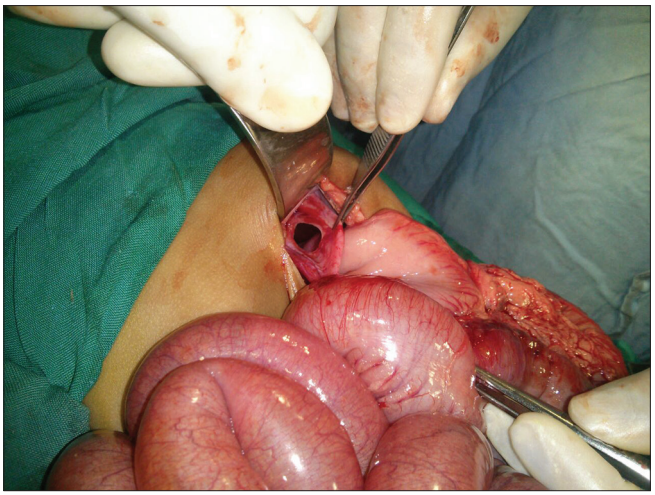


Figure 2: Hole is hernia sac seen after reduction of contents

recovery and was discharged on 6th post-operative day. He is doing well thereafter since the last 4 years.

Discussion

Osebold and Soper in their review of 27 patients of diaphragmatic hernia presenting past infancy stated that these patients usually present with chronic and recurrent gastrointestinal and respiratory symptoms. They hypothesised that the onset of symptoms may be due to rupture of persistent pleuroperitoneal membrane.[1] Since rupture of the sac was also clearly evident in our case, we agree with their hypothesis.

Presentation in our case was acute and more like traumatic rupture of the diaphragm or spontaneous rupture of diaphragmatic eventration. Many cases of rupture of diaphragm secondary to abdomino-thoracic trauma have been reported.[2,3] Dutta has reported a case of rupture of diaphragm in a patient with pertussis, where an acute bout of cough led to rupture of the diaphragm.[4] Similarly, spontaneous rupture in diaphragmatic eventration, leading to acute respiratory or gastrointestinal symptoms have also been reported.[5-7] Our case is different, in that, it was not preceded by any history of trauma or respiratory event like severe bout of cough. Hence, our conclusion is that it was a spontaneous rupture of sac in pre-existing Bochdalek hernia leading to acute gastrointestinal catastrophe. Such a case has not been reported previously.

The diagnosis of diaphragmatic hernia is straight forward and usually made both clinically and radiologically. Computed tomography further helps in delineating the anatomy. In our case, the exact cause of obstruction was not clear on computed tomography. As the cause could be at the level of the diaphragmatic defect, or there could be an associated undiagnosed abdominal pathology, so a decision to perform laparotomy was taken. The exact cause of obstruction was only ascertained intraoperatively. Hence, we strongly advocate abdominal approach rather than thoracic approach. We deferred laparoscopy here because of abdominal distension. However, one can consider this approach in selected cases.

Conclusion

Diaphragmatic hernia can present rarely as acute intestinal obstruction due to spontaneous rupture of sac. Prompt diagnosis and laparotomy are important to successfully treat this condition.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

References

1. Osebold WR, Soper RT. Congenital posterolateral diaphragmatic hernia past infancy. Am J Surg 1976;131:748-54
2. Mitchell TE, Ridley PD, Forrester-Wood CP. Spontaneous rupture of a congenital diaphragmatic eventration. Eur J Cardio Thorac Surg 1994; 8:281-2.
3. Srpčič M., Bitenc M. Subacute presentation of spontaneous diaphragmal rupture: a case report. Eur Surg 2005;37:340-2.
4. Dutta T. Spontaneous rupture of diaphragm due to pertussis. J Pediatr Surg 1975;10:147-8.
5. Gün F, Günendi T, Erginel B, Güler N, Celik A. Rupture of a congenital diaphragmatic eventration in a child: report of a case. Surg Today 2011;41:1630-2
6. Vinod Kumar MS, Shaw SC, Devgan A. Non-traumatic rupture of eventration of diaphragm in a child. Med J Armed Forces India 2018;74:290-3
7. Saha S, Bal HS, Sen S. Spontaneous rupture of a congenital diaphragmatic eventration in an infant. BMJ Case Rep. 2015 May 14;2015:bcr2015208634. doi: 10.1136/bcr-2014-208634. PMID: 25976306; PMCID: PMC4434382