Accidental presentation of congenital bochdalek Hernia in an adult patient- a rare case

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Abstract

Congenital diaphragmatic hernias (CDH) presenting beyond the neonatal period have an extremely different and misleading presentation. We describe a case of CDH in a previously healthy thirty five-year-old male, who presented with history of fall from electric pole. He was neither having any respiratory infections nor gastrointestinal problems. Clinical and radiological diagnostic procedures for diagnosis showed a left Bochdalek hernia. Contents of the hernia included two thirds of the spleen with small bowel. Postoperative recovery was uneventful. This case highlights the importance of high suspicion and proper investigation.

Keywords: *Diaphragmatic hernia, Bochdalek hernia, Respiratory distress, Post neonatal age.*

Introduction

Congenital Diaphragmatic Hernia (CDH) is a diaphragmatic imperfection where the abdominal viscera protrude to the thorax obstructing the regular development of the lungs.[1]

CDH that presents shortly after birth is associated with severe respiration dysfunction and have few diagnostic problems.[2] While late presenting diaphragmatic hernia is associated with a wide range of clinical symptoms.[3,4] Dyspnea and vomiting are the most frequent symptoms found in patients with either chronic or acute manifestations. Congenital diaphragmatic Bochdalek hernia is rarely seen in adults[6, 7] We present a case of a 35-year-old patient with left Bochdalek hernia.

When we think about improving the outcome for the patient with CDH, it is appropriate to remember that older patients with milder symptoms survive following a reduction of hernia and repair of the diaphragmatic defects. Ventilatory support, improved postoperative anaesthesia technique along with advances in diagnosis and optimal surgical management has improved the outcome of Bochdalek hernias.

The purpose of this case report is to familiarize the anaesthesiologist with the clinical presentation that can occur in the patient in intraoperative and postoperative patient with CDH, which will facilitate the management of this potentially dangerous condition.[5, 7]

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Case report

A 35-year-old male was admitted to the hospital with complaint of fall from electric pole. He was brought to hospital to rule out head injury and injury to abdominal organs. He was not having any respiratory complaint or gastrointestinal problem. The general condition of the patient was fair.

On examination,

Inspection- The abdomen was scaphoid, nontender.

Percussion- Dullness to percussion was present in lower two third of the left hemithorax.

Ausultation-Decreased breath sounds on the left side. Bowel sounds were found to be present.

With the help of chest X ray & CT, a diagnosis of left congenital diaphragmatic hernia (LCDH) was made

and the patient was posted for planned operation after taking consent of patient and his relatives.

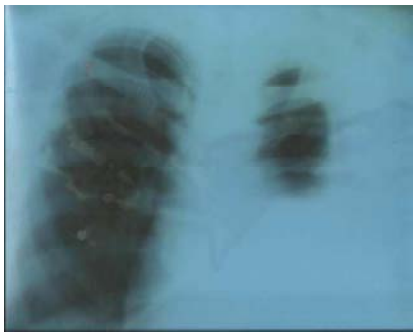

Fig. 1: Preoperative plain chest radiograph

A plain PA chest radiograph showing bowel gas pattern in the left hemithorax with displacement of mediastinum to the right. No evidence of pneumothorax.

Anaesthesia

1. Risk was informed. Valid written consent was taken. It was planned to give combined epidural and general anaesthesia. Pulse oximeter and ECG monitors were attached and intravenous fluids were started. Under all aseptic precautions epidural catheter 18 G was placed in epidural space at T8-T9 level. Test dose of 2% lignocaine with adrenaline was given and placement was confirmed in epidural space.

2. Following premedication with Inj. Glycopyrrolate (0.004 mgkg-1) and midazolam (0.04 mgkg-1) intravenously, the patient was pre oxygenated with 100% oxygen for 5 minutes with face mask. Anaesthesia was induced with Inj. Thiopentone (5 mgkg-1) and relaxed with Inj. succinylcholine (1.5 mgkg-1). Patient was Intubated with portex endotracheal tube no.-8 upto 22cm mark. On auscultation air entry was on right side only. Anaesthesia was maintained with intermittent doses of vecuronium, 0.5% halothane and oxygen. The patient maintained adequate O_2 saturation throughout the operative period. Then cuff deflated and CETT was taken out up to 20 cm mark. IPPV was given. But the left sided lung was too small and hypoplastic to inflate at that time. At the end of surgery, 0.125% Bupivacaine with 100 microgram Fentanyl having 15 ml volume was given by epidural catheter for post operative pain relief. Then a mixture of neostigmine (0.05 mgkg-1) and glycopyrrolate (0.008 mgkg-1) was used to reverse the residual neuromuscular blockade. The patient was fully awake, on extubation. The patient was shifted to the intensive care unit for continuous monitoring and observation for the next 24 hours.Postoperative recovery was uneventful without residual pulmonary or gastrointestinal symptoms.

Surgical procedure

A transabdominal approach was used for laparotomy. It was found to be a left posterolateral Bochdalek hernia. The contents of the hernia were viable and consisted of small bowel and 2/3 rd of the spleen. There were no adhesions between the contents and the rim of the defect. The herniated viscera were replaced back into the abdomen and the defect was repaired. Intercostal drain was kept and the peritoneal cavity was closed.

A postoperative chest X-ray taken after 10 days was normal (fig. 2) and confirmed an uneventful recovery.

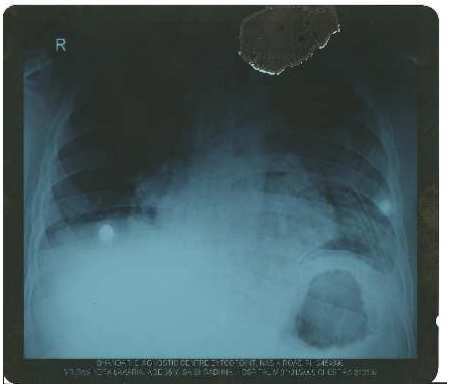

Fig. 2: Postoperative chest radiograph

A plain PA chest radiograph showing good expansion of lung, consolidation in left lower lobe, minimum left pleural effusion
and ICD in situ.

Discussion

The incidence of Bochdalek hernia as reported in literature is quite varied. Different authors reported different incidences such as 5%, 25%, 10% etc.[3,4,5] A

review of the published data shows that diaphragmatic hernias are more commonly seen beyond the neonatal age than was generally realized and should be considered in the differential diagnosis of all patients and abnormal chest x-ray film findings.[6, 7, 8] Although the origin of posterolateral diaphragmatic hernia is not known, it is generally considered to result from defective formation and/or fusion of the pleuroperitoneal membranes. The relative rarity of right-sided lesions is related to the earlier closure of right pleuroperitoneal opening and to the protective effect of the liver developing in the septum transversum.[9] In our case, the presence of pulmonary hypoplasia confirms an early herniation of abdominal contents through the diaphragmatic defect which may be small at birth and occluded by the liver or spleen initially. The first requisite for the diagnosis of a CDH is a high index of suspicion. Congenital diaphragmatic Bochdalek hernia is rarely seen in adults while CDH as a late presentation has also been reported by various authors.[10]

A report of a two and a half year old child.[11] who presented with acute respiratory distress was mistakenly diagnosed as "large cyst" in the left lung. Tube thoracostomy resulted in clinical improvement but results of a barium study showed that the cyst perforated by the thoracostomy tube was the stomach, which had herniated through a Bochdalek diaphragmatic defect; stressing the importance of a correct diagnosis.

In patients with diaphragmatic hernias, the risks of complications are high, in particular gastric volvulus and colonic obstruction[12]

During general anaesthesia, nitrous oxide should ideally be avoided because it may lead to distension of the bowel and further respiratory embarrassment. Mortality in these patients is usually low, due to the low incidence of associated anomalies. Therefore, consistent with data in the literature, we recommend careful aimed examination as well as investigations of every patient with or without chronic non specific respiratory or gastrointestinal complaints.

Consent

Written informed consent was obtained from the patient for the publication of this case report and any accompanying images.

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