CASE REPORT

Obstructed Bochdaleck Diaphragmatic Hernia in a Child Girl

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ABSTRACT

A five-year-old female child presented with intestinal obstruction. X-ray abdomen and chest showed multiple air-fluid levels in abdomen and a single gas shadow with air-fluid level in left hemithorax. Ultrasound confirmed the presence of gut loop in left side of chest. Laparotomy was carried out with repositioning of intestinal loops in abdominal cavity and closure of posterolateral diaphragmatic defect with non-absorbable suture. Patient recovery was uneventful. As soon as diagnosis of diaphragmatic hernia is made, surgical intervention should be made to prevent fatal complications.

Key words: *Congenital diaphragmatic hernia. Girl. Intestinal obstruction.*

INTRODUCTION

Congenital Diaphragmatic Hernias (CDH) are characterized by herniation of abdominal viscera into thorax through a defect in diaphragm.[1] Bochdaleck hernia is the most common congenital diaphragmatic hernia occurring in 1 out of 2500-5000 live births. Usually, CDH presents at birth or within few days after birth with variable degree of respiratory distress. Late presentation of CDH has been reported in 5-25% of cases with wide range of clinical symptoms occurring in varying constellation.[2] Obstructed Bochdaleck hernia in older children with intestinal obstruction is rare and hence case is reported.

CASE REPORT

A five-year-old girl presented with diffuse abdominal pain, constipation and bilious vomiting for 5 days. There was no significant past history of abdominal and respiratory problems. On clinical examination, patient was ill-looking and dehydrated. Chest examination revealed silent left hemithorax with no air entry. There was hyper resonant percussion note on left side with shifting of mediastinum to right side. Upper abdomen was distended and tender with no visible peristalsis. Per rectal examination was un-remarkable.

Complete blood count showed hemoglobin level of 8.3 g/dl, total leucocytes count of 11300/mm^3 and ESR of 30 mm/first hour, serum electrolytes were sodium level of 136 meq/l, chloride level of 96 meq/l; potassium level of 3.3 meq/l and bicarbonates at 22 meq/l. Blood urea was 41 mg/l. X-rays of plain abdomen and chest showed multiple air fluid levels in abdomen along with single gas shadow with air fluid level on left hemithorax (Figure 1 and 2) with shifting of mediastinum to right side indicating left diaphragmatic hernia. Ultrasonography of abdomen and thorax showed the presence of bowel loops and spleen into left hemithorax along with dilated intestinal loops in abdomen.

After resuscitation and correction of the electrolytes, immediate laparotomy was performed through left subcostal incision. Spleen, part of stomach, few loops of small intestine and transverse colon were found herniated into left hemithorax. Loops of ileum and stomach were collapsed and the transverse colon was distended into left hemithorax. All the contents were placed in abdominal cavity without any problem. There were no macroscopic signs of intestinal ischemia. Size of posterolateral defect of diaphragm was approximately 5 cm, which was repaired with non-absorbable silk sutures. Postoperative recovery was uneventful.

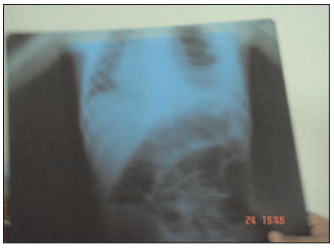

Figure 1: X-ray chest, PA view showing left diaphragmatic hernia.

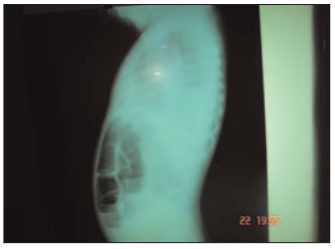

Figure 2: X-ray chest left lateral view showing diaphragmatic hernia.

DISCUSSION

Bochdaleck hernia is the most common Congenital Diaphragmatic Hernia (CDH) occurring in 1 out of 2500-5000 live births.[1,3] It generally presents at birth or within few days after birth with respiratory distress. Late presentation has been reported to 5-25% in infants and young children and very rarely in adults.[2] Late presenting CDH is an isolated diaphragmatic defect only, while neonatal CDH seems to be much more

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Received August 31, 2007; accepted January 15, 2009.

complex anomaly of primitive diaphragm. Common presentation in both variant is pathological opening in diaphragm.[4] Lung hypoplasia is a major cause considered to be in neonates, while in late presenting CDH, it has little importance.[4] Causes of late presentation of CDH are thought to be late rupture of small hernial sac that contained the viscera in the abdomen or plugging of hernial defect by solid viscera prior to the development of hernia due to raised intra-abdominal pressure.[5,6]

In neonates, CDH presents as respiratory distress and cyanosis, while in older children, due to variability of presentation, it is a diagnostic challenge. Diagnostic errors are mainly due to the facts that possibility of CDH in that age is neglected.[7] Baglaj has mentioned that acute symptoms are common (60%) in left sided hernias, while chronic symptoms are common on right CDH.[4] Gastrointestinal symptoms were common in older children, while intestinal obstruction was not so common as found in this case.

Diagnosis of CDH is based on clinical examination, which is further strengthened by radiography. While ultrasound and upper gastrointestinal contrast study are the second line imaging modalities. CT scan is recommended in cases with associated anomalies or difficult cases.[7,8] In this case, X-ray showed multiple air-fluid levels in abdomen along with single large gas shadow with fluid level in left hemithorax. Faint lung fields were seen in background with non-visibility of left hemidiaphragm. Sonography in this case was much helpful demonstrating spleen and bowel loops in left hemithorax, which were suggestive of left diaphragmatic hernia.

Surgical options are laparotomy, thoracotomy and laparoscopy. Patient with intestinal obstruction should have laparotomy to assess intestinal ischemia and to correct malrotation, which is mostly found but not in this case. Kubata mentioned that direct suturing of diaphragmatic defect is sufficient to acquire adequate strength in most of the cases.[3] While in weak diaphragm and in large defect diaphragm, mesh or muscle grafts have been advocated. In this patient diaphragmatic defect was small one and repaired directly with un-absorbable sutures.[5]

Overall prognosis in neonatal CDH has not improved much, despite the latest technique of extra-corporeal membrane oxygenation, survival is 50-65%, while late CDH has good prognosis not least because of lung hypoplasia and pulmonary hypertension in neonates in CDH are absent.[2]

It is emphasized that once diagnosis of obstructed diaphragmatic hernia has been made, immediate surgical intervention should be planned to prevent complications and fatal outcome.

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