

Neonatal Hiatal Hernia- A rare case report

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Abstract

Hiatal Hernia is rarely seen in a neonate. The mode of presentation in the neonatal period can be confused with the possibility of a congenital diaphragmatic hernia and other chest pathologies. The upper gastrointestinal tract contrast study is diagnostic in this disease, but careful viewing of the plain X-ray of the chest can also suggest the diagnosis.

Key Words: Hiatal hernia, congenital diaphragmatic hernia
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Introduction

Hiatal hernia is the herniation of abdominal viscera into the thoracic cavity through the esophageal hiatus due to the disorder of gastroesophageal junction and is rarely seen in neonatal period [1,2]. This entity may result in misdiagnosis such as congenital diaphragmatic hernia, eventration of diaphragm, lobar emphysema, pneumato-coele, pneumothorax, pleural effusion and esophageal atresia [3, 4]. Rapid diagnosis and treatment is essential. It avoids lethal complications such as gastric dilatation, gangrene and perforation, which in turn may lead to cardiopulmonary arrest. We report a case of hiatal hernia in a neonate clinically similar to the presentation of a congenital diaphragmatic hernia.

Case report:

A 25year primi gravida presented in active labour at 37 weeks of gestation to our hospital. There was no apparent medical illness and there was no history of consanguinity among parents. There was evidence of fetal distress and a lower segment caesarean section was conducted. A fe-male baby was delivered weighing 2.71 Kg, with Apgar score of 5 at 5 minutes. The baby was stained with thick meconium and was non vigorous. There was evidence of severe respiratory distress and peripheral cyanosis. The airway was cleared and tracheal suctioning was done and was intubated and shifted to neonatal intensive care unit where it was immediately ventilated. On examining the child further, there was evidence severe respiratory dis-tress and there was shifting of mediastinum to the right side. The breath sounds on the left side were diminished, while bowel sounds were heard on the left side of the chest. The chest was hyperinflated and abdomen was mildly scaphoid. Chest radiography showed abdominal viscera protruding into the left hemithorax with nasogas-tric tube in the stomach (Fig 1) and a congenital dia-phragmatic hernia was suspected. Child was ventilated for 96hours and was then taken for surgery. Exploratory lapa-rotomy through left subcostal incision was done and the hernia repair was done. After 48hrs, there was rapid dete-riation of the condition with reduced air entry on the left side and Chest x ray was repeated. It showed bowel loops in the left hemithorax with evidence of fluid collection in the pleural space on the left side. A repeat Chest X ray on day 9 of life showed bilateral homogenous opacity with mediastinum still shifted to the right side and bowel loops in the left hemithorax. Based on the above findings Bar-ium study was planned. Barium contrast study revealed evidence of sliding hiatus hernia protruding into the left hemi thorax (Fig 2).

Other investigations revealed Haemoglobin of 14.7gm%, total leukocyte count 8,800 with differential count showed N60 L38E0 M2, Platelet count 2 47,000 and pe-ripheral smear showed normocytic, normochromic picture with mild anisocytosis. Sepsis screen was negative and blood culture was sterile. Blood sugar was 74mg/dl, Urea 18mg/dl, calcium 8.8mg/dl, sodium 138mEq/l, potassium 4.8 mEq/l. The total serum protein was 3.3 g/dl, with al-

bumin 2.5gm/dl, SGOT 23U/L, SGPT 14U/L, and Alka-line phosphatase of 445U/L. The mother's blood group was O+ve and baby's blood was A1positive. ECHO study showed situs solitus with small ASD ostium secundum of 3.7mm with left to right shunt without evidence of pulmonary arterial hypertension.

A Barium study showed evidence of sliding hiatal hernia with stomach protruding into the left hemithorax. A re-peat sepsis screen on day 10 life was positive and blood culture grew candida non albicantes species. Urine culture also showed evidence of candida glabrata infection sensi-tive to Amphotericin B.Tracheal aspirate grew klebsiella and acinetobacter with resistance to most of the antibiot-ics. A diagnosis of neonatal hiatal hernia with persistent pneumonia was made. A second surgical intervention was planned for repair of the defect of hiatal hernia once the general condition of the child improves. However the child worsened and expired after nineteen days of hospital stay.



Figure 1. Chest x ray showing herniation of abdominal viscera into left hemithorax



Figure 2. Barium study showing sliding hernia into the left hemithorax

Discussion

Hiatal hernias have been classified into 4 types as Type 1- sliding hernia, Type 2- rolling or paraesophageal hernia, Type 3-a combination of these two types and Type 4- all or part of the stomach herniates into the thorax, usually with organoaxial rotation of the stomach [5]. There is an anatomical defect in the hiatus without any derangement of the gastroesophageal sphincter mechanism. The most common of these is a sliding-type hernia accounting for more than 90% of all the cases of hiatal hernia. Although a paraesophageal hernia is a rare entity it is more prone to incarceration, strangulation, complete gastric herniation with organoaxial volvulus (upside down stomach), and a perforation of herniated viscera [6,7].

A hiatal hernia is considered as massive if more than one third of the stomach is located above the diaphragm [8]. It has been reported that massive hiatal hernias may occur due to progression of a paraesophageal hiatus hernia [9]. However massive hiatal hernia may also occur due to sliding hiatal hernia. However, massive hiatus hernia has been rarely reported in children [10, 11]. The main pre-senting features are respiratory distress, failure to thrive and poor feeding. Parida and Hall reported higher inci-dence of congenital anomalies in such children [12]. They can also be misdiagnosed as lobar pneumonia, pneumato-coele, pneumothorax, pleural effusion or congenital dia-phragmatic hernia.

Barium swallow examination, upper gastro-intestinal en-doscopy and computed tomography are routinely used to confirm the diagnosis of Hiatus hernia. Manometry, 24 hour pH monitoring and gastric scintigraphy are done to rule out the presence of gastroesophageal reflux. Chest radiographs may show opacity in the posterior mediasti-num with or without an air-fluid level. Barium swallow will show three or more gastric folds above the diaphragm hiatus and a pouch of stomach more than two cm above the hiatus. On CT scan, the diaphragmatic crura are seen separated by more than 15mm and the protrusion of her-nia above the diaphragm hiatus. Medical management include use of antacids, H2-receptor antagonist and proton pump inhibitors and Nissen fundoplication is done in re-fractory cases.

In our case the neonate presented with severe respiratory distress at birth and an initial diagnosis of congenital dia-phragmatic hernia was thought and surgical exploration was done. But there was no improvement in the child. A barium study was done which showed sliding hiatal her-nia. A hiatal hernia repair with fundoplication and gas-tropexy was planned once the child's condition improves. However the child's condition worsened after nineteen days of hospital stay.

Hiatal hernia although rare, should be considered in dif-ferential diagnosis of severe respiratory distress in a neo-nate as early intervention will be life saving.

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