

Congenital Diaphragmatic Hernia with Delayed Presentation: A Case Report

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Abstract

Congenital diaphragmatic hernia (CDH) is a defect of the diaphragm that occurs during development, which is characterized by the herniation of abdominal organs into the thoracic cavity. Consequently, the defect leads to a lung defect and other respiratory problems. Most situations appear throughout the infant stage with intense difficulty breathing. Nevertheless, delayed presentation is uncommon and may manifest with atypical gastrointestinal or respiratory symptoms, which may pose a diagnostic challenge. 11-year-old female child with exercise intolerance, intermittent abdominal pain, and regurgitation of food since early childhood. A clinical examination revealed observation of diminished breath sounds on the right side of the chest, and scaphoid abdomen. The patient's ultrasonography and contrast-enhanced computed tomography imaging studies revealed a right-sided congenital diaphragmatic hernia, with herniation of bowel loops into the right hemithorax and hypoplasia of the right lung. The patient underwent surgical repair and was placed on supportive care including intercostal drainage of the hydropneumothorax and nutritional support. The patient got improved and was discharged with advice to come frequently. The case illustrates the relevance of congenital diaphragmatic hernia as a connotation diagnosis in older children with unexplained gastrointestinal and respiratory disturbances.

Keywords: Congenital diaphragmatic hernia (CDH), delayed presentation, pediatric diaphragmatic hernia, right-sided CDH, lung hypoplasia.

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INTRODUCTION

Congenital diaphragmatic hernia (CDH) refers to a congenital disability in the diaphragm of the fetus that enables intussusception of abdominal contents in the thorax, leading to pulmonary hypoplasia. It is among the major congenital disabilities that affect the respiratory system and typically occurs during the newborn stage, often accompanied by respiratory distress.^[1]

Diaphragmatic defect is more prevalent on the left (about 85 of the cases), and right-sided defects are present in about 1015 of the cases. Bilateral intervention is far between. Most of the patients come soon after birth, because of respiratory cripple akin to pulmonary hypoplasia as well as the atrophic movement of the atria to the rib cage.^[2]

Nevertheless, a low percentage of cases might occur later in infancy, childhood, or even adolescence. Delayed presentation of CDH is uncommon and often manifests with nonspecific symptoms such as mild respiratory distress, recurrent respiratory infections, abdominal pain, vomiting, or gastrointestinal complaints. In some cases, up to 25% of patients may remain asymptomatic for a long time.^[3]

Because of the atypical presentation, delayed CDH may be misdiagnosed. Early identification through detailed clinical examination and appropriate imaging is important for timely management. The present case is about right-sided congenital diaphragmatic hernia with delayed presentation in an 11-year-old female child.

CASE PRESENTATION

An 11-year-old female child was admitted with complaints of exercise intolerance, along with intermittent abdominal pain and regurgitation of food. According to the parents' history, these symptoms had been intermittent since early childhood.

The child was poorly nourished with a body mass index (BMI) of 10.97. On physical examination, decreased breath sounds were noted on the right side of the chest. The abdomen appeared scaphoid in shape. No cyanosis or signs of acute respiratory distress were observed at the time of examination. Ultrasonography (USG) of the abdomen revealed the presence of bowel loops within the right hemithorax extending up to the right paracardiac region, along with adjacent collapse of the right lung. Further evaluation with contrast-enhanced computed tomography (CECT) of the thorax confirmed the diagnosis of right-sided congenital diaphragmatic hernia. Echocardiography was done to exclude congenital cardiac defects associated with it, and it was noted to be normal.

Management

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The patient was scheduled to have a surgery to correct her diaphragmatic defect, which was repaired laparoscopically. Hydrostatic compromise on the right side with the formation of hydropneumothorax was diagnosed in the postoperative period, and the intercostal drain (ICD) was placed. The case underwent supportive care with total parenteral nutrition (TPN) at the beginning of the process, followed by gradual, enteral feeding, which slowly improved the patient's clinical condition. He was discharged in stable condition with a recommendation for frequent follow-up.



DISCUSSION

The congenital diaphragmatic hernia is mostly diagnosed during the neonatal period because of respiratory distress associated with pulmonary hypoplasia. Nevertheless, late presentation after infancy is rare and does not represent a large percentage.^[3] Congenital diaphragmatic hernia on the right is less prevalent

than that on the left. On the right side, the liver tends to offer partial protection, making herniation less common and allowing symptoms to develop more slowly.^[2]

late-onset CDH in pediatrics age group may present with non-specific symptoms such as abdominal pain, vomiting, feeding problems, abdominal problems, inability to breathe or exercise, or mild respiratory discomfort. This variable presentation may lead to delayed diagnosis or diagnostic dilemma as other gastrointestinal or respiratory diseases.^[4,5]

imaging is an important part of diagnosis. They are useful for determining the presence of abdominal organs in the thoracic cavity and evaluating related pulmonary or vascular defects. Chest radiography, ultrasonography, and computed tomography all play important role in diagnosis.^[6,7]

The definitive cure of congenital diaphragmatic hernia is early surgical repair. Delayed diagnosis may present with complications like bowel obstruction, strangulation, or perforation and are potentially fatal.^[8,9] In the given case, the patient reported at rather old age, and the symptomatology was predominantly gastrointestinal and exercise intolerant. Imaging revealed the right-sided diaphragmatic defect that was surrounded by herniation of the abdominal contents in the thoracic cavity and consequent lung underdevelopment. In this case, a timely surgical operation led to a good prognosis.

CONCLUSION

Right-sided congenital diaphragmatic hernia is a rare condition that is likely to show unusual symptoms, especially with gastrointestinal symptoms. Early surgical intervention is necessary in this condition to stop the serious complications of bowel obstruction, strangulation, or perforation. Proper clinical history, physical examination, and imaging studies, including a CT scan, are critical for accurate diagnosis and detection of related anomalies. When the condition of congenital diaphragmatic hernia is diagnosed, early surgery should be conducted to avoid serious complications of the bowel. When patients are identified early and receive timely intervention, patient outcomes can be greatly improved.

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Conflicts of interest

There are no conflicts of interest.

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