



Case Presentation

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Bilateral Congenital Diaphragmatic Hernia With an Unusual Clinical Course: Thoracoscopic Treatment and Case Report

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Abstract

Background: Bilateral congenital diaphragmatic hernia (CDH) is uncommon and may present with complex respiratory and gastrointestinal manifestations.

Case Presentation: A neonate was diagnosed with bilateral CDH after respiratory distress and abnormal thoracoabdominal imaging. Following stabilization and careful assessment of pulmonary status, thoracoscopic repair was performed. The postoperative course was complicated by transient respiratory support requirements but ultimately resulted in recovery and discharge.

Conclusion: Bilateral CDH requires individualized planning because the anatomic defect and pulmonary physiology may differ from unilateral disease. Thoracoscopic repair may be feasible in selected stable patients when performed by an experienced pediatric surgical team.

Keywords: congenital diaphragmatic hernia; bilateral CDH; thoracoscopy; neonate; pediatric surgery; respiratory distress

Introduction

Congenital diaphragmatic hernia results from a developmental defect in the diaphragm allowing abdominal viscera to enter the thoracic cavity. Pulmonary hypoplasia and pulmonary hypertension are major determinants of neonatal outcome. Bilateral defects are particularly rare and may present diagnostic and technical challenges.

This case describes a representative clinical course and thoracoscopic management approach using patient and author information.

Case Presentation

A term newborn developed respiratory distress shortly after birth and required noninvasive respiratory support followed by stabilization in a neonatal intensive care unit. Chest radiography demonstrated abnormal lucencies within both hemithoraces with displacement of the mediastinum. Subsequent ultrasound and cross-sectional imaging supported bilateral diaphragmatic defects with herniation of abdominal contents.

The infant underwent careful cardiorespiratory stabilization before surgery. After improvement in pulmonary pressures and oxygenation, thoracoscopic exploration was performed. Bilateral diaphragmatic defects were identified, reduced, and repaired with minimally invasive suturing and reinforcement according to the defect characteristics.

Postoperatively, the infant required ventilatory support and gradual advancement of enteral feeding. Serial imaging demonstrated improving thoracic anatomy. The patient was discharged home after achieving stable spontaneous respiration and adequate feeding. At outpatient follow-up in this scenario, growth and respiratory status were satisfactory.

Discussion

Bilateral CDH is rare, and the clinical presentation can vary according to the size of each defect, herniated organs, pulmonary hypoplasia, and associated anomalies. Initial stabilization remains more important than immediate surgical correction in critically ill neonates.

Thoracoscopic repair offers potential benefits including reduced surgical trauma and improved visualization in selected patients. However, thoracoscopy may not be appropriate in unstable neonates or in those with severe pulmonary hypertension or major physiologic compromise. The operative approach should therefore be individualized.

Long-term surveillance is important because children recovering from CDH can develop recurrent hernia, gastroesophageal reflux, chronic respiratory symptoms, and growth or developmental concerns.

Conclusion

Bilateral CDH is an uncommon and complex neonatal condition. After appropriate physiologic stabilization, thoracoscopic repair can be considered in carefully selected patients at experienced pediatric surgical centers.

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