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Congenital Diaphragmatic Hernia- A Case Report

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Abstract
Congenital diaphragmatic hernia (CDH) is an anatomical defect of the diaphragm which allows herniation of abdominal contents into the thoracic cavity, thus causing serious pulmonary and cardiac complications in the neonate. The incidence is 1 in 2000-5000 live births accounting for 8% of all congenital defects[1 2]. We report a case of 27 years old, primigravida conceived by in vitro fertilization. She was diagnosed with fetal CDH by ultrasound at 25 weeks 5 days period of gestation. Patient came with spontaneous onset of labour pains at 34 weeks 4 days of gestation and delivered a male baby vaginally, weighing 2.2kg with Apgar score of 3. Baby was immediately intubated and shifted to neonatal ICU. After stabilization baby was taken up for surgical repair but died after 4 hours of surgery.
Keywords: *Congenital diaphragmatic hernia, neonate, respiratory distress.*

Introduction

The diaphragm is a dome shaped musculotendinous partition that separates the thoracic cavity from peritoneal cavity[3-5]. Its development begins at approximately 3 weeks of intrauterine life and completes by 9th week. It is formed by fusion of four developmental compartments: the ventral or septum transversus, the dorsal esophageal mesentery, the pleuroperitoneal membrane and lateral aspects formed from muscular components of the body wall.

The most common type is the defect in closure of pleuroperitoneal membrane known as bochdaleck hernia accounting for 90% of all CDH. It usually occurs as posterolateral defect affecting the left hemi thorax in most of the cases. When present in newborn it is frequently associated with significant respiratory insufficiency resulting in mortality depending upon varying degrees of pulmonary hypoplasia[6].

Case Report

A 27 years old pregnant woman, primigravida with gestational age 34 weeks 4 days conceived by in vitro fertilization came in emergency of gynaecology department at Adesh medical college with chief complaint of labour pains since 4 hours.

She was an unbooked case. Ultrasound was done at 25 weeks 5 days of gestation which showed left sided congenital diaphragmatic hernia along with polyhydramnios. On her abdomen examination, uterus 36 weeks, cephalic, good uterine contractions were present and fetal heart rate present/regular/150 bpm. On per vaginum examination she was already 3-4 cm dilated, 50-60% effaced, presenting part vertex at -3 station, bag of membranes present which was spontaneously ruptured and liquor was clear. Augmentation of labour was done with oxytocin and a male baby was delivered vaginally without any difficulty. Baby had a weak cry after birth with Apgar score of 3 and weight of 2.2 kg. Baby was immediately intubated and shifted to neonatal ICU. On auscultation of the left hemithorax, bowel sounds were heard and heart sounds were heard on the right side of the thorax. Chest X ray was done which showed left sided diaphragmatic hernia as shown in (fig. 1)

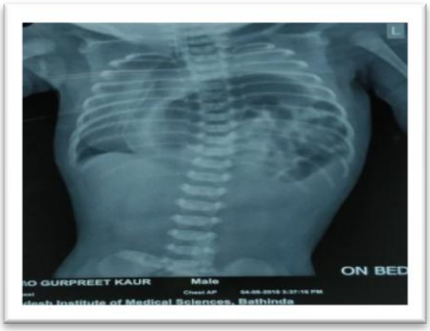

Fig. 1

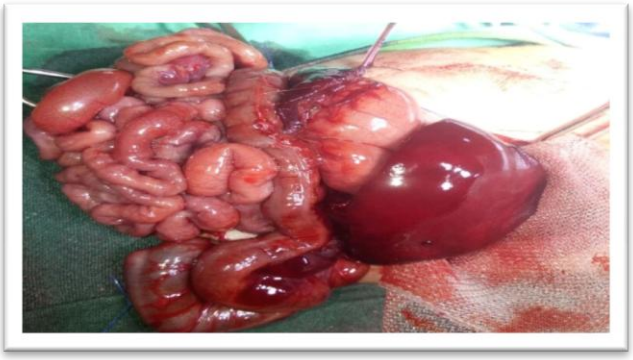

Fig. 2

After stabilizing, the baby was taken up for surgical repair. Subcostal laparotomy was performed. The abdominal organs (stomach, intestine, liver and spleen) had herniated into the thoracic cavity which was successfully restored back into the peritoneal cavity as shown in (fig.2) and the diaphragmatic defect was closed using a mesh. However, 4 hours after the surgery, condition of the baby worsened and died due to severe pulmonary hypoplasia and pulmonary hypertension.

Discussion

CDH is a rare but lethal anomaly, characterized by herniation of abdominal organs into the pleural cavity thus compressing the lungs and displacing the mediastinum to opposite side[7]. The fetal prognosis is depended upon severity of pulmonary hypoplasia and associated cardiac malformation. Degree of pulmonary hypoplasia depends upon the time and extent of herniation of viscera into the thoracic cavity. Such newborns are likely to develop persistent pulmonary hypertension which remains a major cause of mortality as seen in our case despite surgical correction on time[8].

Conclusion

CDH is a therapeutic challenge. Although, CDH can be diagnosed antenatally by ultrasonography and surgical repair is being done in many centers yet the morbidity and mortality is still high because many aspects of the disease are still unknown, so more research and clinical studies need to be done for better understanding of disease and adequate management.

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