

## Peer Review File

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### Reviewer comments-Reviewer A

Neonatal chylothorax is a rare disease that causes breathing difficulties in newborns and is one of the most common causes of pleural effusion during the neonatal period. In the manuscript “A case of successful therapy for neonatal chylothorax with pneumothorax by conservative medical treatment”, authors reported the case of a child in whom a large amount of pleural effusion on both sides of the thorax was first found 3 days before delivery.

Couple questions are required to be answered before it will be accepted.

- (1) In the introduction, please make a brief introduction about the recent treatment of neonatal chylothorax.

Reply: At present, the treatment methods of newborn chylothorax: ① repeated thoracic puncture or closed thoracic drainage. ② Nutrition management: fasting, parenteral nutrition, and pleural effusion were significantly reduced when medium chain triglyceride was fed by milk. ③ Drug treatment: somatostatin/erythromycin/propranolol. ④ Surgical treatment: medical conservative treatment failed, surgical repair fistula. Such as thoracic catheter ligation, pleuroexy.

Changes in the text: Pages 68-72.

- (2) What were the main causes leading to neonatal chylothorax? Please state in the introduction.

Reply: Neonatal chylothorax can be divided into the following 5 categories according to the etiology. ① Congenital chylothorax: congenital dysplasia of lymphatic system; ② traumatic chylothorax: excessive central venous pressure resulting from labor injury or resuscitation may result in hyperdilation and rupture of the thoracic duct; ③ postoperative chylothorax: surgical procedures near the thoracic duct may injure the trunk and branches of the thoracic duct; ④ embolic chylothorax: Parenteral nutrition through the central vein can lead to embolization and rupture of the thoracic duct. ⑤ spontaneous chylothorax: the cause is unknown, the type accounts for 50% of the neonatal chylothorax.

Changes in the text: Pages 59-68.

- (3) In the introduction, it was proposed to add related reference (DOI: 10.21037/tp-20-199) about the neonatal chylothorax.

Reply: Have already added.

Changes in the text: Pages 271-274.

(4) Why to focus on conservative medical treatment in the study? Please state in the discussion.

Reply: The treatment principle of neonatal chylothorax is first active medical conservative treatment, if the conservative treatment is ineffective, then surgical repair fistula under the condition of good nutrition status of the baby.

(5) What were your good suggestions for the treatment of neonatal chylothorax? Please state in the discussion.

Reply: ① We recommend that the rate of pleural effusion suction be controlled according to the pleural effusion volume to reduce pneumothorax complications. ② The treatment of respiratory failure and pneumothorax of neonatal chylothorax with high-frequency oscillation-assisted ventilation is in line with evidence-based medicine, and the improvement of the baby's condition also shows that our respiratory management was effective. ③ Multidisciplinary diagnosis and treatment model provides a rapid, effective and reasonable delivery mode for congenital neonatal chylothorax. EXIT provides favorable conditions for lung expansion at birth for neonatal chylothorax, and it is effective.

Changes in the text: Pages 211-214.

#### **Reviewer comments-Reviewer B**

It is wonderful that proper treatment saved a baby's life.

Three days before he was born, he had a massive pleural effusion. If this pleural effusion had been present for a long time, the lung hypoplasia would have been so severe that it would not have been possible to save her life. In such a case, it is difficult to save a life even if EXIT is done at birth as well as a severe diaphragmatic hernia. In that sense, was EXIT really necessary? Was there a significant difference between performing a C-section, intubating, and performing thoracic drainage?

You have also detailed the postnatal course of the patient, but I don't think chylothorax was treated aggressively.

I felt that there was not enough information for this case to be performed more often in the future.

Reply: Thank you for your question. First of all, the large bilateral pleural effusion was first detected in the patient during the labor examination three days before delivery, so the onset and duration of pleural effusion were not clear. While we currently don't have a better noninvasive test to assess fetal lung maturity. However, you cannot infer a child's poor lung development based on a large amount of pleural effusion. Judging from our treatment

outcomes, fetal lung development is relatively mature. For a large amount of fluid in the bilateral thoracic cavities of the fetus. According to our traditional delivery method, that is, when natural childbirth occurs around 40 weeks of gestation, the pleural effusion gradually increases. However, the limitations of lung development in children are increasingly evident. So we should give birth early, that is, choose a cesarean section. After delivery of the fetus and during umbilical cord ligation, starting to establish pulmonary circulation and adult circulation, due to the massive pleural effusion on both sides of the child, if the alveoli cannot expand and the establishment of pulmonary circulation is blocked, asphyxia must occur, tracheal intubation and thoracic drainage are needed to promote lung recruitment to establish pulmonary circulation. If endotracheal intubation takes a long time or thoracic drainage has poor efficacy, it may even be accompanied by respiratory failure, hypoxic ischemic encephalopathy, and circulatory disorders, resulting in death of the child. So we carry out EXIT. After the child is dissected, before the umbilical cord is tied when pulmonary circulation is about to be established, Under the guidance of B-ultrasound, bilateral pleural effusion is aspirated to create conditions for lung expansion. The child was unable to breathe spontaneously after the umbilical cord was severed, so we gave him an endotracheal intubation. Therefore, our EXIT treatment for this patient with congenital bilateral massive pleural effusion is positive and effective, and should be promoted.

Changes in the text: none.