LARRY’S HERNIA SIMULATING ISOLATED NEONATAL PLEURAL EFFUSION

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ABSTRACT
Unilateral pleural effusion is rare in newborn. Common causes are chylothorax, hemothorax, parapneumonic effusions, empyema and idiopathic. Rarely pleural effusion is associated with congenital diaphragmatic hernia. We report a neonate with congenital diaphragmatic hernia simulating as isolated unilateral pleural effusion managed successfully. We discuss the management and review the literature.

Keywords: Neonatal Pleural Effusion, Congenital Diaphragmatic Hernia, Larry’s Hernia

INTRODUCTION
Congenital isolated pleural effusion is a rare cause for respiratory distress in newborn. Incidence is 1 in 12000 to 1 in 15000 pregnancies (Hwang et al., 2003; Longaker et al., 1989). 19.8% of congenital diaphragmatic hernias are associated with mild pleural effusion, but simulating as isolated pleural effusion is very rare (Van Mieghem et al., 2012; Wooldridge et al., 2003).

CASES
A full term male neonate with birth weight 2.7 kg delivered by normal vaginal delivery, cried at birth, fetal scan at 22nd weeks showed cystic lesion in base of left lung suspected as macrocystic congenital cystic adenomatoid malformation. At birth baby had respiratory distress with Downe’s score of 2/10. Breath sounds diminished over the left hemithorax and cardiac apex shifted to right. There was no dysmorphic features and baby was not hydropic. Other system examinations were normal. Chest X-Ray showed homogenous opacity on left side with mediastinal shift to right. An emergency ultrasound chest showed left sided moderate pleural effusion without internal septations. A diagnostic tap was done and 10 ml of straw coloured pleural fluid aspirated. The aspirate showed transudate containing 2250mg/dl of protein, sugar 204 mg/dl, triglyceride 25 mg/dl and no cells. Sepsis screen and blood culture was negative. ABG was normal. Echocardiogram showed normal study. Karyotype was 46XY. Baby was treated with humidified oxygen through hood and antibiotics. Respiratory distress settled by 16th day of life. Baby was started on expressed breast milk from day 2 of life and direct breast feeds from day 16.
Repeat chest X-Ray after conservative management showed similar findings. Pleural tap repeated to check for chyle, but was transudate as before. CT chest confirmed moderate pleural effusion with mediastinal shift to right. Baby discharged on 21st day of life and advised follow up. But baby was readmitted after 10 days with respiratory distress and Downe’s score of 2/10. Humidified oxygen support was given through hood.
Repeat chest X-Ray showed similar findings as before, hence MRI planned. A review discussion was done with senior radiologist and review ultrasound thorax with Doppler study showed congenital diaphragmatic hernia with left lobe of liver as content and associated pleural effusion. MRI chest and abdomen confirmed left sided congenital diaphragmatic hernia. The content of hernia was part of left lobe of liver through the infracardiac and retrosternal diaphragmatic defect (Larry’s hernia). Left sided pleural effusion was associated as fluid collection surrounding the hernia.
Baby was taken for surgery and CDH repair was done at 52nd day of life by left subcostal incision. A defect was seen in the anterior part of the left diaphragm with herniation of left lobe of liver. Liver was reduced inside the abdomen. A neck like constricted region was seen and a mass of 1 X 2 cms diameter surrounded by a sac was excised and sent for histopathology. Histopathological examination reported it as...
collection of hepatocytes with dilated and congested vascular spaces with fibro-collagenous wall. Diaphragmatic defect repaired in 2 layers after placing an intercostal drainage. Post-operative period was uneventful. Drain removed on 7th post-operative day and baby discharged on 10th post-operative day. Baby fared well at 5 months of age and there is no respiratory distress.

DISCUSSION
Congenital Diaphragmatic hernia simulating pleural effusion is rare (Lau et al., 1997). Anterior hernia through right sterno-costal hiatus is Morgagni’s Hernia (Mentes et al., 2007). Larrys hernia is hernia through left sterno-costal hiatus which is 6% of anterior hernias (Percivale et al., 2005). Sbragia et al., (2000) concluded neonates having liver as hernia can have more adverse outcome than others. USG itself can be conclusive to identify cardiomiadiastinal shift with abnormal cardiac axis and the content of hernia according to Seigel et al., (1981).

In our case there was difficulty in diagnosing the cause for pleural effusion. CT chest was not helpful. Based on clinical suspicion MRI was planned and before that senior radiologist suspected congenital diaphragmatic hernia by USG abdomen with doppler study. MRI confirmed the diagnosis. By its mass effect both congenital diaphragmatic hernia and pleural effusion causes hypoplasia of the ipsilateral lung and respiratory distress at birth. It can also be associated with congenital heart defects, malrotation of gastrointestinal tract, neural tube defects and trisomy 13, 18. Hence, ECHO, USG abdomen and chromosomal analysis were done in our case and it was normal. Treatment includes surgical repair by reducing the abdominal contents and repairing the defect by a mesh. Thoracotomy is done to separate adhesions and laparotomy for obstruction, strangulation, perforation, malrotation and liver hernias.

Conclusion
There are cases misinterpreted by ultrasonogram as pleural effusion in few case reports and diagnosed later as congenital diaphragmatic hernia, as in our patient (Chilton et al., 1978). CT is useful only in adults (Mullins et al., 2001). MRI is superior to ultrasonography in demonstrating liver in congenital diaphragmatic hernia (Cannie et al., 2009).

Failure to consider the diagnosis early can lead to pulmonary hypoplasia, persistent fetal circulation syndrome, pulmonary hypertension and mortality in 50% of the cases, and have been described in few case reports (Nawaz et al., 2000).

Figure 1: Chest X-Ray (A) and CT (B) Showing Mediastinal Shift (MS) to Right and Pleural Effusion (PE) on the Left Side
Case Report

Figure 2: (A) Ultrasonogram Done at 38th Day of Life - Pleural Effusion (EFF) and Liver as the Content of Diaphragmatic Hernia (HERNIA) and (B) MRI Chest and Abdomen – Pleural Effusion (EFF) and Liver as Content of Diaphragmatic Hernia (HERNIA)

Figure 4: Chest X-Ray at 59th Day of Life Showing Bilateral Areated Lung Fields with Normal Cardiac Shadow and Intercostal Drain Insitu

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REFERENCES


