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Case Report

Congenital pneumonia with empyema at birth; a rare presentation

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ABSTRACT

Empyema thoracis is a rare complication of congenital pneumonia in neonates. Case characteristics: A newborn presented with severe respiratory distress had empyema thoracis. Outcome: patient was managed with chest tube insertion and antibiotics. Message: empyema can be a rare complication of congenital pneumonia and along with appropriate antibiotics, chest tube drainage is required for successful management.

Keywords: Congenital pneumonia, Neonatal empyema, Sepsis, Thoracocentesis

INTRODUCTION

Pneumonia presenting at birth or occurring within first 48 hours of life is most commonly caused by E. coli, Streptococci, Klebsiella aerobacter or Enterococci.[1] Empyema thoracis is not a well-known entity in the neonates. Empyema thoracic is characterized by presence of pus or microorganism in the pleural fluid.[2] It is fulminant with rapid progression with a high mortality.[3] Herin we present a newborn with neonatal empyema.

CASE REPORT

A female new born delivered by normal vaginal delivery in our hospital at 36 weak gestation with birth weight 2 kg and had breech presentation. Baby cried immediately after birth with apgar score 8/10 at 1 minute shifted to NICU for respiratory distress. Oxygen was given via nasal prong. Antenatal history was unremarkable with regular antenatal visits.

No history of fever and leaking PV during antepartum period. On examination, respiratory rate 70/min., subcostal as well as intercostal retractions, nasal flaring, grunting and cyanosis was present. On palpation, trachea was shifted to right side along with shift of apex beat also towards right side. On percussion, there was dull note on left side. On auscultation, breath sounds were markedly decreased on left side and there were no adventitious sounds on both sides. Other system findings were unremarkable. Chest X-ray was done which showed homogenous opacity on left side with shifting of mediastinum towards right (Figure 1 and Figure 2) and USG revealed significant left side pleural effusion with collapse and consolidation of underlying lung parenchyma.

CT scan revealed significant amount of free fluid in left pleural space (with fluid extending along oblique fissure) and collapse/consolidation of underlying lung parenchyma. Pleural tap revealed thick pus so, chest drain tube was inserted in left 6th intercostal space in mid axillary line. Pleural fluid showed findings s/o exudate: cell count 930 cells/mm^3, neutrophils 95.26%, lymphocyte 4.74%, glucose 98.9 mg/dl and protein 3.72 g/dl. Pus amounting to around 100 ml was drained out in first 48 hrs though no organism was grown in the culture of pleural fluid after 48 hrs. The respiratory distress was decreased and intensity of breath sounds also improved significantly on left side. Chest drain tube removed after

8 days as no further collection was noted and the baby was given IV vancomycin and amikacin for 21 days, there after she was discharged.

Figure 1: Chest x-ray showing left-side haziness with shifting of mediastinum towards right.

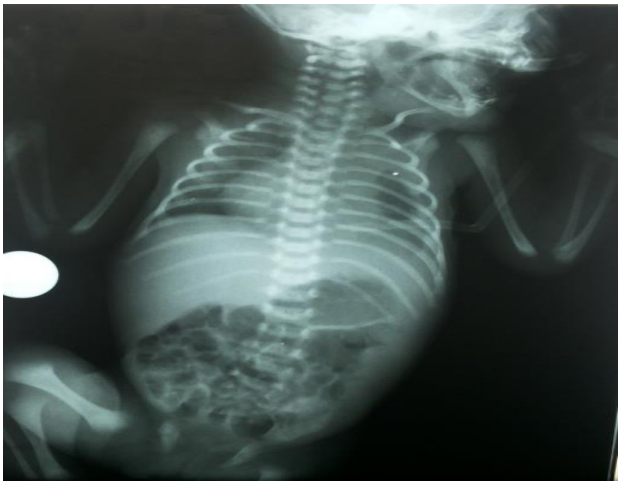

Figure 2: Chest X-ray showing ICD in left pleural space and clearance of previous haziness and expansion of left lung.

DISCUSSION

Empyema thoracis may result from infection of the pleural cavity, surrounding lung tissues or mediastinum eliciting a parapneumonic inflammatory reaction with accumulation of exudative fluid in the plural space; this becomes populated by neutrophils resulting in pus formation. Only few cases of neonatal empyema are described in the medical literature and it is a rare entity in the neonatal period.[4]

Neonatal empyema has a high mortality rate; however, our patient survived because of the timely appropriate management.[5] The etiological agent from previous reports found both gram-positive and gram-negative organisms with staphylococcus auras been most predominant.[5,6] However, culture was negative in the index case either because of broad spectrum antibiotic treatment begun before draining the fluid or microbiological reason like inappropriate selection of culture medium. Experience in the management of neonatal empyema is lacking and no standard protocol is currently available.[4]

Although some clinicians managed conservatively, others have ensured adequate chest drainage, with good outcome.[7,8] In our case, the pus was drained because the patient was deteriorating and he made remarkable improvement afterward, therefore treatment can be individualized.

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REFERENCES

1. McCracken J, Klebsiella infection in newborn. Lancet. 1980;187-9.
2. Kumar L, Gupta AP, Mitra S, Yadev K, Pathak IC, Walia BNS, et al. Profile of childhood empyema thoracic in north India. Indian J Med Res 1980;72: 854-9.
3. Kliegman RM, Stanton BF, Schor NF, St Geme JW. Purulent Pleurisy or Empyema. Nelson Textbook of Paediatrics; 19th edn Elsevier. 2011;404.3:1507.
4. Mazumdar J, Sen S. Neonatal empyema thoracis. J Nepal Paediatr. Soc. 2014;34:65-7.
5. Gupta R, Faridi MM, Gupta P. Neonatal empyema thoracis. Indian J Pediatr. 1996;63:704-6.
6. Hassan I, Mabogunje O. Paediatric empyema thoracis in Zaria, Nigeria. Ann Trop Paediatr. 1992;12:265-71.
7. Lohmeier K, Mayatepek E, Hoehn T. Neonatal pleural empyema in an extremely low birth weight infant. J Matern Fetal Neonatal Med. 2009;22:940-2.
8. St. Peter SD, Tsao K, Spilde TL, Keckler SJ, Harrison C, Jackson MA, et al. Thoracoscopic decortication vs. tube thoracostomy with fibrinolysis for empyema in children: A prospective, randomized trial. J Pediatr Surg. 2009;44:106-11.

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