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Case Report

Paediatrics Section

A Rare Case of Bilateral Empyema in an Infant – Case Report

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ABSTRACT

Infants and children below five years of age are more prone to develop empyema which results due to unrecognised or improperly treated pneumonia. Bilateral empyema in infants are rarely reported. The present case highlights the importance of early interventions by tube thoracostomies and appropriate antibiotics for better outcome.

Keywords: Empyema, Infants, Tube thoracostomy

CASE REPORT

A 11 months old female child from Villupuram (India) was brought to causality with the complaints of high grade fever, cough for one week , rapid breathing for three days and difficulty in breathing for one day. On assessment, the child was febrile, irritable with severe respiratory distress and cyanosis. Examination of the chest revealed no air entry on the left side. There were no added sounds. A working diagnosis of pneumothorax / pyo-pneumothorax was made in view of decreased air entry and cyanosis. Wide bore needle with IV set under water- seal was inserted in the second intercostal space. Plenty of air bubbles were noted and respiratory distress was marginally decreased.

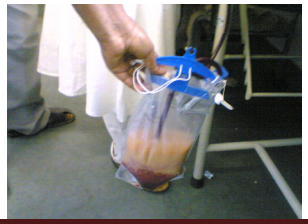
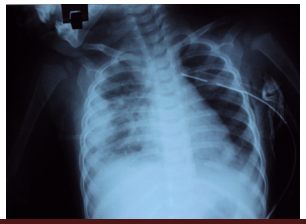
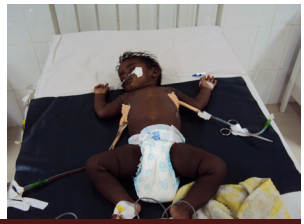
Radiographic findings were as follows:- Chest X- Ray indicated pneumothorax with mediastinal shift to the right side. Right lung also showed evidence of pneumonia [Table/Fig-1]. Emergency Intercostal Drain (ICD) was inserted in the left hemithorax and plenty of pus was drained which was around 400 mL along with air [Table/Fig-2].

Investigations showed Total White Blood Cell count to be 33,000 cells/mm^3 with 78% of neutrophils. Child was started on IV cefotaxime and cloxacillin. Blood culture and antibiotic sensitivity was sterile. Pleural pus grew *Staphylococcus aureus* sensitive to oxacillin.

Child improved with IV antibiotics and ICD drainage. Two days later, child was noted to have few fever spikes and had decreased air entry on the right side. Chest X- Ray showed evidence of effusion [Table/Fig-3]. USG chest done showed moderate effusion with underlying consolidation. ICD was inserted on the right side [Table/Fig-4]. ICD's were removed on day five (Left side) and on day seven (Right side) of admission. Her mantoux test was negative and gastric lavage done for two consecutive days was negative. IV antibiotics were given for 10 days and the child was discharged on tenth day with oral cloxacillin for next fourteen days. Repeat Chest X-Ray on follow up showed normal lung expansion.

DISCUSSION

Staphylococcus aureus is still the commonest organism causing empyema in indian subcontinent [1]. Hot and humid climate and presence of preciding pustules are importantly noted in many cases of staphylococcal empyema as reported by Baranwal AK et al., [2]. Empyema in children are mostly unilateral very few cases are bilateral The reported incidence of bilateral

[Table/Fig-1]: Chest X ray shows left sided pneumothorax with mediastinal shift and right side also shows evidence of pneumonia
[Table/Fig-2]: Pus collected in ICD bag **[Table/Fig-3]:** Chest X ray shows evidence of effusion on right side and ICD on left side
[Table/Fig-4]: The sick child with ICD on both sides

empyema cases of various studies done by Baranwal et al., [2] and Bhatta N et al., [3] were found to be less than 8%. *Staphylococcal aureus* causing bilateral empyema are rarely reported.

Apart from pleural fluid analysis, imaging plays a vital role in diagnosing and managing pleural space disease. Ultrasound is an inexpensive imaging modality which should be used early for identifying pleural fluid debris or loculation [4]. In the present case early USG chest helped us in identifying the opposite pleural disease.

Coverage with proper antibiotics should be started early in all cases of empyema. Anti-staphylococcal penicillin (cloxacillin) and third generation cephalosporin can be used as initial therapy [5]. However amikacin can be used for synergistic effect if the identified organism is staphylococcus aureus [6]. The previous recommendation is to continue antibiotics for 2 to 4 weeks but the consensus guidelines by paediatric infectious disease society America 2011 [7] states that antibiotics should be continued atleast for a minimum of 10 days after subsiding of fever. Antibiotics along with surgical procedures like thoracocentesis, chest tube drainage, with or without usage of fibrinolytic agents VATS or decortication should be employed for large effusion or children presenting with respiratory distress [8]. The child under consideration recovered well with only antibiotics and bilateral thoracostomies and required only short duration of hospital stay in comparison to various studies [9].

CONCLUSION

Most cases of staphylococcal empyema are methicillin sensitive. Majority of empyema respond well with antibiotics and chest tube drainage. Bilateral empyema is relatively uncommon but if identified and treated early outcome is fruitful.

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