

Case Report

Lung abscess in congenital cystic malformation during early infancy

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ABSTRACT

Congenital Pulmonary Airway Malformation (CPAM) previously known as Congenital cystic adenomatoid malformations (CCAM) also known as congenital pulmonary airway disease is a developmental, non-hereditary hamartomatous abnormality of lung of unknown cause. Lung abscess is a rare condition and much rarer in early infancy. If CPAM is suspected as the cause of repeated pulmonary infection limited to single lobe, patient should be treated early with surgical removal of the affected lobe as Type I CPAM the most frequent subtype, is associated with risk of malignant transformation. We present a 52 days old child presented with lung abscess in CPAM.

Keywords: CPAM, Lung abscess, Congenital cystic malformation, Early infancy

INTRODUCTION

Congenital pulmonary airway malformations (CPAM) also known as congenital pulmonary airway disease is a developmental, non-hereditary hamartomatous abnormality of lung of unknown cause.¹ If CPAM is suspected as the cause of repeated pulmonary infection limited to single lobe, patient should be treated early with surgical removal of the affected lobe as Type I CPAM the most frequent subtype, is associated with risk of malignant transformation.² Lung abscess is a rare condition and much rarer in early infancy.^{3,4} Unless the condition is complicated by dissemination, recovery is a rule with appropriate antibiotics alone.⁵ We present a case of CPAM presented as a lung abscess in early infancy. We present a case of congenital cystic adenomatoid malformation with lung abscess in early infancy.

CASE REPORT

A 52 days old female infant presented to the emergency with the chief complaints of fever, vomiting, excessive cry and irritability since 3 days, with swelling in the lower limbs since 2 days progressively increasing to both the flanks, abdomen and gradually over the face, child

also had 1 episode of vacant stare lasting for a few seconds which subsided by stimulating the child. At admission, child was afebrile, Heart rate of 146/min, Respiratory rate of 68/min, CRT-3sec, Blood Pressure of 124/68 mm Hg in left upper limb, Spo2-84-90% with Oxygen by mask. Systemic examination reveals reduced air entry in right infra-clavicular region. Abdomen was soft but revealed mild hepatosplenomegaly. Chest X ray revealed a rounded homogenous opacity involving the right hemithorax in the right upper zone, which was suggestive of a lung abscess (Figure1). Blood picture revealed Hb 13gm%, TLC 21800/cumm with Neutrophils 85%, CRP-24 mg/dl was positive, child had sodium of 112 mEq/L, and was corrected over a period of 48 hours, blood culture was sterile and needle aspiration for cytology couldn't be done. Child started on inj. Vancomycin but later changed to Inj Linezolid (due to drug reaction) given with ciprofloxacin for a period of 3 weeks and converted to oral at discharge and planned for 3 more weeks, (total of 6 weeks). HRCT chest (Figure 2, 3) done at 10 days of admission reveal congenital pulmonary airway malformation.



Figure 1: Homogenous opacity over the right lung indicating abscess.

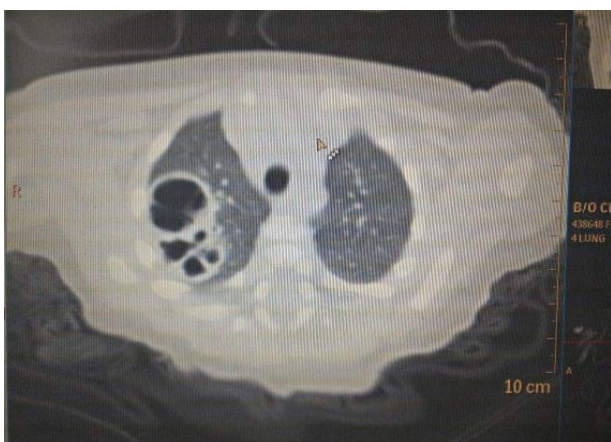


Figure 2: Cystic malformation on CT scan thorax.

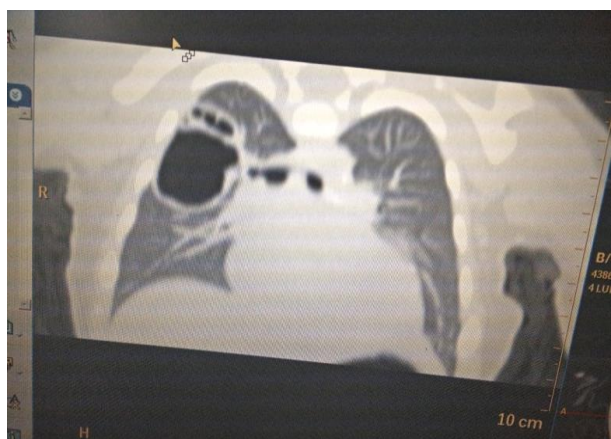


Figure 3: Cystic malformation on CT scan thorax.

DISCUSSION

The incidence of lung abscess in children is 0.7 per 100,000 admissions per year.⁶ Although there is not much studies in our subcontinent to find the exact incidence, they are rare in children and rarer in Infants. Lung abscess is defined as necrosis of the pulmonary tissue and formation of cavities containing necrotic debris or fluid

caused by microbial infection. The formation of multiple small (<2 cm) abscesses is occasionally referred to as necrotizing pneumonia or lung gangrene. Primary Lung abscess are those involving apparently normal children, whereas secondary are in those who are predisposed infection following Immunodeficiency, recurrent aspiration pneumonia and anatomical abnormalities and cystic fibrosis. Pulmonary abscess in children are most commonly secondary to bacterial infections, among the aerobic organisms, *Staphylococcus aureus*, *Klebsiella spp.* and *Pseudomonas aeruginosa* are common, while the most common anaerobes are *Bacteroides spp.*, *Peptostreptococcus*, *Fusobacterium spp.*, micro-aerophilic *Streptococcus* and *Veillonella*.⁷ The mortality is higher with anaerobes. Fungal and protozoal agents may be seen in immunocompromised patients.⁸ Salmonella lung abscess, though rare have also been reported.⁹ Congenital Pulmonary Airway Malformations develop from an Overgrowth of Lung tissue extending from different levels of the airway, generally unilateral.¹⁰ In most of the cases, respiratory distress occurs during the neonatal period, and in about 90% of patients, congenital pulmonary airway malformation is diagnosed before the age of two years due to respiratory infection. Clinically can present at pregnancy with hydrops, polyhydramnios, presents at birth in 90% with respiratory distress, and in infants and children with recurrent pneumonia, abscess formation and spontaneous pneumothorax. Our child presented in early infancy with abscess formation in sepsis, diagnosed radiographically and confirmed the presence of cystic malformation with Computerised Tomography, and was managed conservatively with IV antibiotics for a period of 6 weeks, following which the child improved clinically. The child was planned for segmentectomy and discharged for further follow up.

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Ethical approval: Not required

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