

Case Report

Neonatal Lung Abscess: Case report

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Abstract: A lung abscess is a cavity in the lung parenchyma that contains purulent material resulting from pulmonary infection. We had one day old out born neonate presented with respiratory distress had an air-fluid level on chest CT. Initial therapy with a penicillin and an aminoglycoside were started until identification of organism and susceptibility results are available on the organism isolated from the abscess cavity. The pathogenic organisms were Escherichia coli. Computed tomography of the chest distinguished the mass as a discrete lung abscess, without underlying abnormality. Computed tomography was of great benefit in defining suspected lung abscess in the neonate.

Keywords: Lung abscess, Infection, Escherichia coli

INTRODUCTION

A lung abscess is a cavity in the lung parenchyma that contains purulent material resulting from pulmonary infection. Pediatric pulmonary abscess is a rare respiratory problem in childhood. The incidence of lung abscess in children is 0.7 per 100,000 admissions per year [1]. Advances in the field of antibiotics have drastically reduced the incidence of lung abscesses that too in children [2]. We are reporting a one day old baby with lung abscess and is probably one of the few cases reported in the literature in the modern antibiotic era.



Fig. 1: Chest radiograph demonstrates a consolidated lesion of the right upper lobe



Fig. 2: Computed tomography scan of chest showing thick walled cavitary lesion with air fluid in the right upper lobe

CASE REPORT

One day old male baby, born to a nonconsanguineously married couple was presented with respiratory distress. Baby was on put on ventilator support and started on antibiotics. All necessary investigations were done. Due to right sided opacity in a lung CT chest was ordered. The CT showed -thick walled cavitary lesion with air fluid in the right upper lobe. Bronchoscopy was done and aspirated material was sent for culture and sensitivity. There was a growth of *E. coli*, baby was treated with appropriate antibiotics

according to culture report. Baby was extubated after 5 days and observed in step down and discharged.

DISCUSSION

Lung abscess is a localized infection with central necrosis and suppuration of the lung parenchyma, surrounded by a thick wall of infected and inflammatory tissue. This process may establish communication with an airway and cause partial expectoration of the purulent content and a resultant air-fluid level. Primary lung abscesses are those occurring in otherwise healthy children, whereas secondary are those developing in a child with predisposing factors such as aspiration, pneumonia, cystic fibrosis, gastroesophageal reflux, or immunodeficiency. A primary lung abscess is almost always solitary, whereas secondary abscess can be solitary or multiple. Primary lung abscess occurs predominantly on the right side like in our case and if aspiration is the cause then the upper lobes of either side are commonly involved. Lung abscess in pediatric patients is believed to develop secondary to bacterial pneumonia [2].

The predominant pathogens isolated from primary lung abscesses include streptococcal species, *Staphylococcus aureus*, and *Klebsiella pneumonia* [3]. There was a growth of *E. coli* in our case. Children with a lung abscess, both primary and secondary, have a significantly better prognosis than adults.

Diagnostic difficulty is known to occur even with the modern investigating modalities. In fact, in our case, the lung abscess was diagnosed by chest CT. Common differential diagnosis includes infected congenital cystic abnormalities of the lung such as bronchogenic cyst, cystic adenomatoid malformation, and late-presenting congenital right-sided diaphragmatic hernia.

Management of lung abscess predominantly is based on administration of parenteral antibiotics with anaerobic and staphylococcal coverage, replacing the older methods like pneumonostomy [9], catheter drainage and resectional surgery. Additional computerized tomography (CT)-guided percutaneous drainage or other surgical interventions may become mandatory occasionally, if there is an incomplete or inadequate response to parenteral antibiotics alone [5,

6]. Transtracheal aspiration and drainage are very recently introduced techniques [7, 8]. Complications like pleural hemorrhage, empyema, bronchopleural fistula, or pneumothorax may occur with all these procedures. Our case was managed by Transtracheal aspiration and parenteral antibiotics.

CONCLUSION

Despite the availability of potent antimicrobial agents and advanced diagnostic techniques, lung abscesses remain an important cause of pulmonary disease in infants and children. Due to the rarity diagnostic difficulty of lung abscess in neonates in the modern era, we are reporting this case.

REFERENCES

1. Tan TQ, Seilheimer DK; Pediatric lung abscess: Clinical management and outcome. *Pediatr Infect Dis J.*, 1995;14: 51-55.
2. Mishra R, Mishra T, Ratan K, Abrol P, Kadian Y; Right upper lobe lung abscess in an infant. *Internet J Surg.*, 2009; 20:1.
3. Patradoon-Ho P, Fitzgerald DA; Lung abscess in children. *Paediatr Respir Rev.*, 2007; 8: 77-84.
4. Emanuel BA, Shulman ST; Lung abscess in infants and children. *Clin Pediatr (Phila).*, 1995; 34: 2-6.
5. Al-Salem AH, Ali EA; Computed tomography-guided percutaneous needle aspiration of lung abscesses in neonates and children. *Pediatr Surg Int.*, 1997; 12: 417-419.
6. Yen CC, Tang RB, Chen SJ, Chin TW; Pediatric lung abscess: a retrospective review of 23 cases. *J Microbiol Immunol Infect.*, 2004; 37: 45-49.
7. Adhisivam B, Mahadevan S, Udaykumar C; Lung abscess caused by *Salmonellae*. *Indian Journal of Pediatrics*, 2006; 73: 76-77.
8. Muthusamy S, Pandya H, Luyt D; Cough and tachypnoea in a toddler. *J R Soc Med.*, 2003; 96: 81-82.
9. Lacy SR, Kosloske AM; Pneumonostomy in the management of pediatric lung abscess. *J Pediatr Surg.*, 1983; 18: 625-627.