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Case Report

Ruptured Middle Lobe: A Rare Presentation of Lung Abscess in Children

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A 10-month-old male infant was admitted with the complaints of fever & cough for 22 days, respiratory distress for 3 days. He was dyspneic, tachypneic (RR-65/min) with SpO_2- 95% with oxygen 2L/min by face mask, HR- 10/min with right sided restricted chest movement and diminished breath sound. Initially he was diagnosed as right sided pneumothorax. Chest x-ray was suggestive of congenital lobar emphysema / pneumothorax with pneumonia (Rt). CT of chest revealed emphysematous changes with multiloculated area in right hemithorax with dense opacited base of lung. Per operative finding showed pleural thickening and lacerated middle lobe of right lung due to abscess. And finally infant was diagnosed as ruptured lung abscess of middle lobe with thickened pleura and empyema thoracic. The patient was managed with lobectomy of middle lobe, inj. linezolid after getting C/S which changed to oral form and recovered.

Keywords: Raptured middle lobe, lung abscess.

INTRODUCTION

Ruptured lung abscess usually is an unusual presentation of lung diseases [1]. Lung abscess is resulting from primary causes like pneumonia or secondary [2]. It is uncommon in children with an estimated incidence of 0.7 per 100,000 admissions/year [3, 4]. In few cases, this abscess may rupture and cause secondary empyema via formation of a bronchopleural fistula [2]. This generally takes place if early treatment is not instituted with appropriate antibiotics and postural drainage [1].

Most of the cases we, the physician, often get the diagnosis of chest diseases by clinical and radiological findings and treat accordingly such as pleural effusion, empyema thoracic, pneumothorax etc [2, 5].

Sometimes we, find very unusual consequences and complications of common pulmonary diseases. But we do not easily recognize them both clinically and radiologically. That is why we discuss a ruptured middle lobe, a rare presentation of lung abscess in children to disseminate more scientific information.

CASE SUMMARY

A 10-month-old male infant was admitted in Dhaka shishu (children) hospital on August, 2019 with the complaints of fever & cough for 22 days, respiratory distress for 3 days. He had no history of exposure to TB patient and treated with commonly used antibiotics like Amoxicillin, Flucloxacillin, Ceftazidime both oral and I/V form. On examination he was ill looking, dyspneic, tachypneic (RR-65/min) with SpO_2- 95% with oxygen 2L/min by face mask, HR-110/min. Right sided restricted chest movement with diminished breath sound was present. Initially he was diagnosed as right sided pneumothorax. Chest x-ray was suggestive of congenital lobar emphysema/pneumothorax with pneumonia (Rt). CT of chest revealed emphysematous changes with multiloculated area in right hemithorax with dense opacited base of lung. Per operative finding showed pleural thickening and lacerated middle lobe of right lung due to abscess. And finally infant was diagnosed as ruptured lung abscess of middle lobe with thickened pleura and empyema thoracic. Pleural fluid

C/S showed - Staphycoccus aureus (profuse growth), resistant to all commonly used antibiotics and sensitive to Linezolid, Vancomycin. In Gene Xpert (MTB/RIF) of pleural fluid MTB was not detected. The patient was managed with lobectomy of middle lobe, inj. linezolid after getting C/S which changed to oral form and recovered.

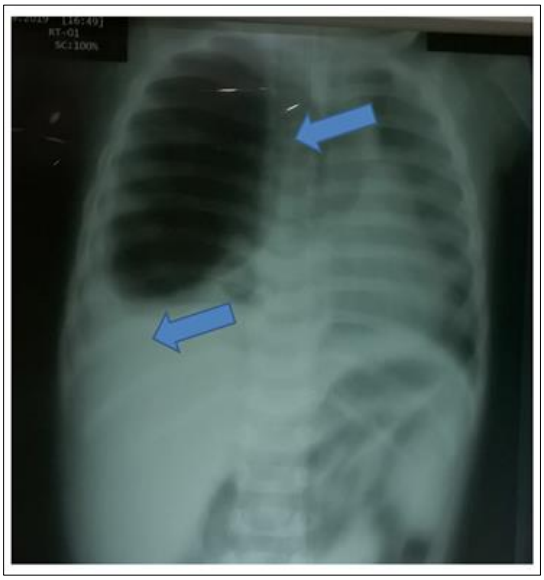

Figure 1: Chest x-ray A/P view shows hyper lucent area in right upper, mid and part of lower zone (arrow) extending to left side of chest having no bronchovascular marking with mediastinum shifted to the left. Dense homogeneous opacity was in right lower zone. Features are suggestive congenital lobar emphysema / pneumothorax with pneumonia (Rt)

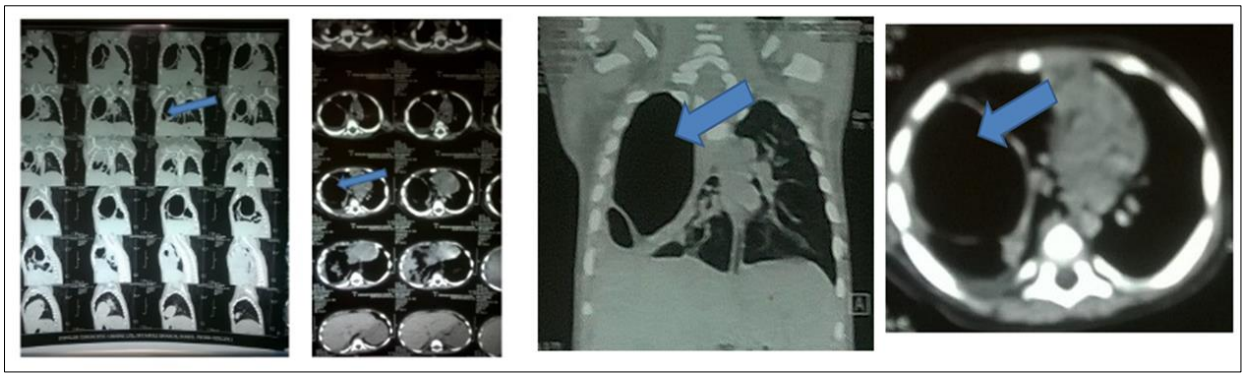

Figure 2: HRCT chest shows emphysematous changes with multiloculated area in right hemithorax with dense opacited base of lung

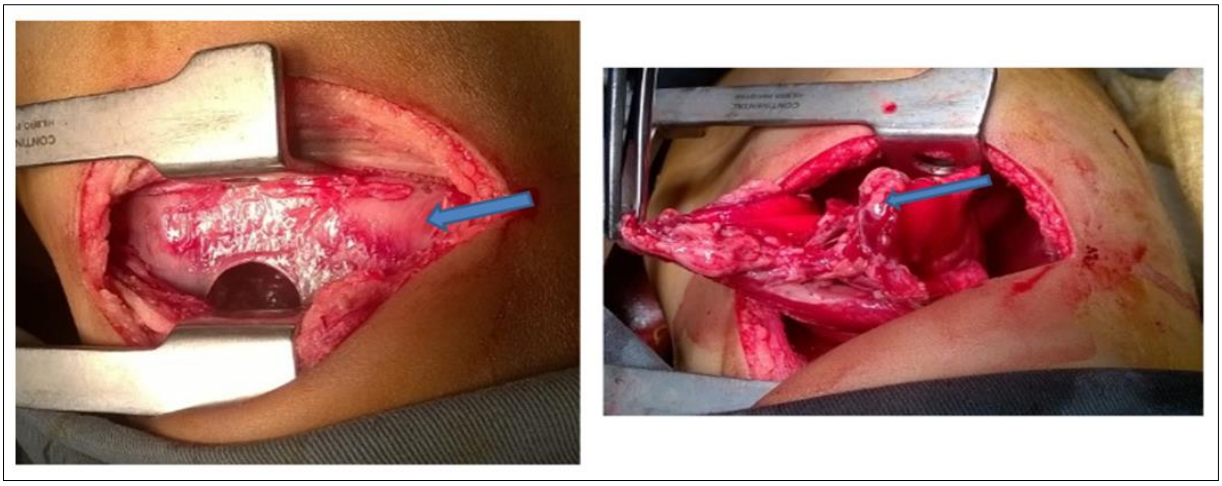

Figure 3: Per operative picture shows (Lt.) pleural thickening and (Rt.) lacerated middle lobe of right lung due to abscess

Figure 4: The boy with his father after recovery

DISCUSSION

In this case, the ruptured middle lobe was due to lung abscesses resulting from pneumonia. The common site of primary lung abscess predominantly develops on the right side like our case. If aspiration is the cause, then the upper lobes of either side are commonly involved [2]. Moreover, ruptured lung abscess in middle lobe is also a rare incident in paediatric population [2].

In a retrospective review of 23 lung abscess in children revealed 11 cases were primary lung abscess and 12 secondary, and they could isolate pathogens in 16 patients and blood cultures yielded only in 3 (13.0%) patients, and the most common microorganism was streptococcus pneumonia [6]. In another retrospective study from taiwan out of 27 children over a period of 16 years, 70% had underlying chronic diseases, and aspiration yielded 63.6 % positive cases [7].

Singhal *et al.*, in their study showed two adult cases of ruptured lung abscess, one in left lower lobe and other in right lobe. In first case, x-ray revealed left hydropneumothorax and finally confirmed by CT of chest. This patient was completely recovered by appropriate antibiotics, intercostal drainage and chest physiotherapy.

In second case the abscess was in right lower lobe and pleural space. Bronchography was done with fiber optic bronchoscope and CT thorax taken. Post-bronchography showed presence of dye in pleural cavity, confirming the presence of bronchopleural fistula. Tuberculosis was diagnosed and well responded with antitubercular drugs. In our study x-ray and CT of chest revealed hydropneumothorax and finally diagnosed per operatively raptured lung abscess in middle lobe with empyema. Our case was treated with lobectomy and appropriate antibiotic and recovered well [2].

Management of lung abscess comprises of medical and few cases surgical like lobectomy. Parental antibiotics should cover gram positive organisms like staphylococcus aureus and anaerobes for 3 weeks followed by oral in uncomplicated cases for 4-6 weeks [7].

For primary lung abscess the prognosis is good and in secondary cases, prognosis is bad in case of aerobic organisms [3].

CONCLUSION

In this case we see the ruptured lung abscess of middle lobe that cannot be diagnosed easily by clinically and radiologically. So, in our daily medical practices if we keep in mind some complex consequence of common diseases along with very common differential diagnosis. Then the delayed to get the final diagnosis and delayed intervention can be avoided.

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