

The Significance of Early Diagnosis and Clinical Suspicion in a Case of Bronchial Aspiration

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Abstract: High morbidity was linked to a delayed diagnosis of a foreign body airway. The presence of a foreign body in the lungs for a longer period of time can result in a more serious complication. The presence of a radiolucent foreign body, a non-organic foreign body, and unwitnessed foreign body absorption both add to the diagnosis of foreign body aspiration taking longer. We present a five-month case of an undiagnosed radio invisible foreign body in the right bronchus in a 6-year-old girl, whose parents observed the initiation of foreign body ingestion. He eventually developed pneumonia and atelectasis.

Keyword: neglected foreign body aspiration; tracheobronchial foreign body; atelectasis; long-term complications

1. Introduction

In school-aged children, foreign body aspiration (FBA) is comparatively uncommon. The majority of patients with an airway foreign body (FB) were between the ages of one and three years, with the prevalence declining as they got older¹. The period between the aspiration of the foreign body, or the onset of symptoms, and the proper diagnosis of FBA was described as more than three days. Significant complications occurred in 95% of patients with a diagnostic delay of more than 30 days after aspirating the foreign bodies². We present a case of an 8-year-old boy with FBA who had been positive for alleged foreign body absorption for five months and had pneumonia and atelectasis.

2. Case report

A 6-year-old boy presented to his pediatrician with a productive cough and a two-week-old fever. The parents had taken the infant to a general practitioner three days before the onset of the symptoms, and the child had been given antibiotics and analgesics, but the symptoms did not seem to have improved. When the baby was diagnosed, he was feverish and mildly tachycardic, but he wasn't toxic. There were no wheezing or other symptoms of a lung condition. The right lung's area had a reduced breath tone, but there was lung crepitation on auscultation.

Chest x-ray showed evidence of homogenous soft density 11.3*6.5mm is seen impacted at the root of the right lower bronchus with consolidation collapse of the lower lobe segment with air bronchogram

A foreign body (Figure 2 peanut) was successfully removed from the right secondary bronchus after rigid bronchoscopy was done. During surgery, the alien body was surrounded by granulation tissue and purulent discharge. The boy responded well to intravenous antibiotics after the foreign body was removed, and he was discharged home after 7 days.



Figure 1: Chest X Ray Shows Right Lung Atelectasis with Suspicion of Radiolucent Foreign Body in the Right Main Bronchus

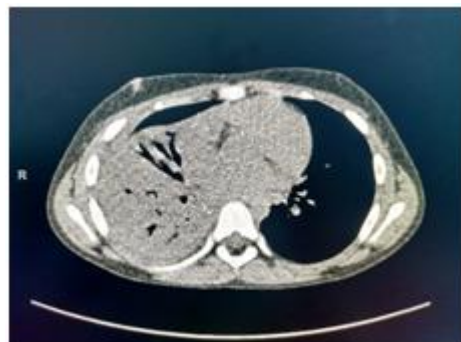


Figure 2: CT CHEST evidence of homogenous soft density 11.3*6.5mm is seen impacted at the root of the right lower bronchus with consolidation collapse of the lower lobe segment with air bronchogram



Figure 3: Foreign body removed by the rigid bronchoscopy

3. Discussion

Around 90% of all FBA events were in children under the age of three. Delay in diagnosis seems to be due to a reluctance to give careful consideration to the diagnosis in normal children older than three years old, as suspicion may be absent, especially among school-aged children (2). If FBA causes acute respiratory failure or goes undiagnosed for an extended period of time, it may be fatal. Due to the mucous membrane's strong response, removing chronic FB can be difficult.

Retained FB, if left untreated, will lead to severe complications such as pneumonia, bronchiectasis, and atelectasis. The higher the morbidity, the longer it takes to detect FBA. There was a high rate of complications in cases where the diagnosis of FBA took more than four weeks. Complications included pneumonia, bronchiectasis, atelectasis, bronchoesophageal fistula, and subcutaneous emphysema in 60.7 percent of patients (3)

Up to four weeks after the foreign body is removed, some patients experience symptoms such as recurrent cough and wheezing. Children diagnosed with FBA after 30 days had a complication risk of up to 60%, with bronchiectasis being the most common complication in 25% of these patients(4). In delayed cases, the duration and features of FB have an effect on symptoms and outcome. A higher morbidity risk was associated with late arrivals and referrals accompanied by bronchoscopy. A symptom-free time can occur after FB inhalation. The FB continues to go unnoticed, resulting in misdiagnosis (5)

In one report, FBA was misdiagnosed and treated as pneumonia in 27 percent of cases. And if a history of choking was often present (6), this resulted in a 49-day delay in the diagnosis of FBA compared to patients with a correct initial diagnosis. A non-organic, non-obstructing foreign body can be subclinical for a while before causing a mucosal response and secondary infection. FBA may also be mistaken for other diseases, leading to misdiagnoses of cough, croup, asthma, and bronchitis. Especially in the presence of a radiolucent foreign body. Cough, dyspnea, wheezing, fever, and stridor are the most frequent health signs. The symptoms of chronic airway FB (3) include chronic cough, intermittent or recurring pneumonia, unexplained fever, lung abscess, and general malaise.

The most important factor that contributed to the delay in FBA diagnosis is parental neglect. Approximately half of the FBs were not found.

Since the original choking incident was not witnessed, there were no symptoms and signs following the choking episode, or the parents lacked medical awareness, for more than 3 days. In certain circumstances, parents were unaware that their children were aspirating. Only as complications such as pneumonia, bronchitis, and fever occur, as in this case, should they seek medical help.

4. Conclusion

Finally, parental understanding is critical. A foreign body swallowing accompanied by choking episodes should not be taken lightly and should be treated medically. A radio invisible foreign body can quickly be detected with a clear chest x-ray. A non-organic, non-obstructing foreign body may not present with any early symptoms, resulting in a delay in diagnosis and, as a result, a high rate of morbidity. Early bronchoscopy and foreign body removal can help to avoid complications during and after the foreign body removal.

5. Conflict of interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References

- [1] Zerella JT, Dimler M, McGill LC, Pippus KJ. Foreign body aspiration in children: value of radiography and complications of bronchoscopy. *Journal of pediatric surgery*. 1998;33(11):1651-4.
- [2] Mu L, He P, Sun D. The causes and complications of late diagnosis of foreign body aspiration in children: report of 210 cases. *Archives of Otolaryngology-Head & Neck Surgery*. 1991;117(8):876-9.
- [3] Saquib Mallick M, Rauf Khan A, Al-Bassam A. Late presentation of tracheobronchial foreign body aspiration in children. *Journal of tropical pediatrics*. 2005;51(3):145-8.
- [4] Karakoç F, Karadağ B, Akbenlioğlu C, Ersu R, Yıldızeli B, Yüksel M, et al. Foreign body aspiration: what is the outcome? *Pediatric pulmonology*. 2002;34(1):30-6.
- [5] Sahin A, Meteroglu F, Eren S, Celik Y. Inhalation of foreign bodies in children: experience of 22 years. *Journal of Trauma and Acute Care Surgery*. 2013;74(2):658-63.
- [6] Hoeve L, Rombout J, Pot D. Foreign body aspiration in children. The diagnostic value of signs, symptoms and pre-operative examination. *Clinical Otolaryngology*. 1993; 18(1):55-7.