



## International Journal of Medical and Pharmaceutical Case Reports

11(3): 1-4, 2018; Article no.IJMPCR.42654  
ISSN: 2394-109X, NLM ID: 101648033

# Missed Foreign Body Diagnosis in a 3 Month Old Infant with Pneumonia: Case Presentation

O. A. Olubosedo<sup>1\*</sup>, E. O. Bello<sup>1</sup>, S. O. Oninla<sup>2</sup>, S. A. Olotu<sup>1</sup>, S. A. Abitoye<sup>1</sup>,  
D. F. Ehinmitan<sup>1</sup> and O. P. Ibuola<sup>1</sup>

<sup>1</sup>Department of Paediatrics, State Specialist Hospital, Akure, Ondo State, Nigeria.

<sup>2</sup>Ladoke Akintola University of Technology Teaching Hospital, Osogbo, Osun State, Nigeria.

### Authors' contributions

*This work was carried out in collaboration between all authors. Author OAO designed the study, managed the literature review and wrote the first draft of the manuscript. Authors OAO, OPI, DFE and SAO managed the patient during hospital admission. Authors EOB, SOO and SAO reviewed the drafted manuscript and also managed the literature searches. Authors DFE and OPI also managed the literature searches. All authors read and approved the final manuscript.*

### Article Information

DOI: 10.9734/IJMPCR/2018/42654

#### Editor(s):

(1) Erich Cosmi, Director of Maternal and Fetal Medicine Unit, Department of Woman and Child Health, University of Padua School of Medicine, Padua, Italy.

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Complete Peer review History: <http://www.sciencedomain.org/review-history/25881>

Case Study

Received 7<sup>th</sup> May 2018  
Accepted 16<sup>th</sup> July 2018  
Published 14<sup>th</sup> August 2018

## ABSTRACT

**Aim:** We present this case report to re-emphasize the importance of having a high index of suspicion for the presence of foreign body aspiration/impaction in children. And that foreign body aspiration/impaction may even occur in pre-ambulant children.

**Presentation of Case:** We write to report the case of foreign body impacted in the throat of a 3 months old child who was initially diagnosed as rhinitis with pneumonia. The foreign body was accidentally discovered and was subsequently extracted without any complications.

**Discussion:** Accidental foreign body ingestion, aspiration and impaction are common in the paediatric population because of various predisposing factors. It may also go unnoticed and may result in late presentation and mis-diagnosis as is the case in this infant that we are reporting.

**Conclusion:** This case report calls attention to the need to carefully and gently explore the mouths of children during examination, especially those with respiratory distress. Caregivers must also be vigilant in caring for their wards.

\*Corresponding author: E-mail: oolubosedo@yahoo.com;

*Keywords: Foreign body; infant; impaction.*

## 1. INTRODUCTION

Foreign body aspiration is a common problem in children. This is probably because infants and toddlers use their mouths to explore their surroundings [1]. Other risk factors for foreign body aspiration in children are carelessness of caregivers, crying/ playing during eating, absent of molar teeth and inadequate control of deglutition [1,2,3].

Children less than 3 year of age account for 73% of cases. Infants and perambulatory toddlers can aspirate objects given to them by older siblings. The objects that are often involved are nuts, particularly peanuts, fragments of raw carrot, apple, dried beans, popcorn and small toy parts [1]. Coins are also common object in the tropics. Others are pins, fishbone, impacted meat and dentures. It may initially present with violent paroxysms of coughing, choking, gagging and possibly airway obstruction immediately the foreign body is aspirated. This may be followed by an asymptomatic interval when the foreign body becomes lodged, reflexes fatigued and the immediate irritating symptoms subside. This stage is most treacherous and accounts for a large percentage of delayed diagnosis and overlooked foreign bodies. It may also result to complications such as obstruction, perforation, erosion, or infection which may direct attention to the presence of a foreign body. Swallowed foreign bodies are more likely to get impacted at the three sites of normal oesophageal narrowing, namely at the pharyngo-oesophageal junction, where the left main bronchus crosses and indents the oesophagus, and where the oesophagus passes through the oesophageal hiatus [4]. The physical examination findings may be normal in 5-40% of patients with airway foreign bodies [2,3]. X-ray which may be plain or with barium meal may reveal radio-opaque and non-radio-opaque materials respectively. The use of barium meal is safe in children. CT is easy, fast, has 100% sensitivity and is therefore the first choice technique for diagnosing suspected upper esophageal foreign bodies that are not expected to be visible on plain radiographs. CT is expensive and is not readily available in the developing countries, Nigeria inclusive. Removal of the foreign body may be done through endoscopy or open surgery. High index of suspicion is therefore necessary for prompt diagnosis of foreign bodies in children. This is because history suggestive of foreign

body aspiration may sometimes be absent [5]. We report this case to re-emphasize and remind the clinicians attending to children especially under-fives the need to examine their nostrils and throats when present with respiratory symptoms.

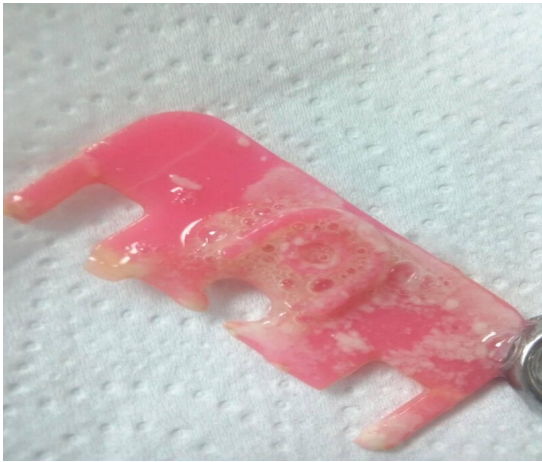
## 2. CASE PRESENTATION

This is the case of a three months old boy who was admitted with complaint of fever, cough and catarrh all of three days. The nasal discharge was copious and muco-purulent. There was reduced sucking at the breast. Mother denied any episode of force-feeding and said that the child had been on exclusive breast feeding. Mother gave doses of paracetamol to the child. At admission, examination revealed an irritable child with nasal congestion and normal temperature. He was grunting and dyspnoeic with a respiratory rate of 50 cycles per minute. There was chest in-drawing and inspiratory stridor. There was transmitted sounds and crepitation in the chest. A diagnosis of acute severe rhinitis with pneumonia was made. He was commenced on antibiotics and intranasal oxygen. The SpO<sub>2</sub> was normal. Child also received top-up feeds using cup and spoon. Mouth suctioning and steam inhalation were also done.

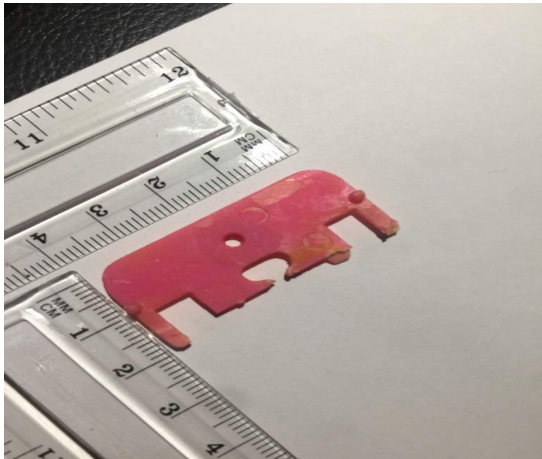
On the third day on admission, child was noticed to be drooling saliva. There was suspicion that child might have aspirated an object. The chest x-ray was normal as no foreign body was seen and the lung fields appeared normal. While cleaning the mouth later on the third day, the care-giver reported that she felt an object in the child's mouth. It was at this time that a closer look into the mouth revealed a pinkish object which was carefully extracted. The object was plastic, measures about 4 × 2 × 0.5 centimeter (Fig. 1 & 2). The object was impacted at the throat.

The stridor and dyspnoea became less immediately after removal. The stridor resolved ten days after the removal of foreign body.

The mother was unsure of the source of the foreign body and could not explain how it got to the child's mouth. Child was discharged home on the 8th day of admission with intermittent stridor. The child was followed up at the out-patient clinic.



**Fig. 1. The object when just removed from the back of the mouth**



**Fig. 2. The object with dimensions after cleaning**

### 3. DISCUSSION

Several cases of foreign body aspiration and impaction have been reported in various age groups and across the globe, since it is a common problem worldwide. It is common in children and the aged. The peak incidence in children is 6 months to 3 years [6]. The child in this case report is very young, 3 months old. This is unusual in this age group. Child is still on exclusive breast-feeding and is not yet able to hold and put objects into the mouth. It is therefore not surprising that the diagnosis of foreign body was not considered at admission. The common objects that children aspirate are usually food particles, coins and small parts of their toys. The diagnosis in this child was

delayed for about 72 hours after admission. Delays in diagnosis have also been reported by various authors, and the duration of delay may be as long as 1 to 6 years [7,8].

The initial diagnosis of rhinitis with pneumonia is probably because symptoms of aspiration and impaction are non-specific and may mimic the symptoms of some other common diseases such as severe rhinitis, pneumonia, asthma, croup, laryngitis and pulmonary tuberculosis others in children [9,10]. However, the pneumonia the child had could have resulted from tracking down of muco-purulent discharges from the upper airway to the lungs. Hence, the clinical features of pneumonia the patient presented with.

It was also not surprising that x-ray did not show the foreign body, since it was plastic and radio-lucent. Normal x-ray may be found in up to 47% of patients with foreign body aspiration [11]. Bronchoscopy and computed tomography have been recommended. Even CT may produce a false negative result in the presence of a foreign body depending on the physical properties of the aspirated material and the slice thickness relative to the size of the foreign body. Therefore, direct visualization of the airways by bronchoscopy is advocated [7].

The foreign body in this report was impacted at the back of the throat because it was rather large in size, measuring about 4 × 2 × 0.5 cm. The large size was probably the reason why the object was impacted at the pharyngo-oesophageal junction and not swallowed.

There was the complication of laryngeal oedema in this child, hence the persistent of stridor after the removal of the foreign body. The stridor resolved ten days after the foreign body was removed. Williams et al. [12] reported that 9.3% of the 140 patients with foreign body had the complication of laryngeal oedema.

A situation where history to suggest aspiration is obtained only after the diagnosis has been made has also been reported from China [7]. Furthermore, not all parents or caregivers may witness or remember the choking episode. The history of choking episode may not be revealed by the children due to fear, embarrassment or limited speech in case of younger children [13].

#### 4. CONCLUSION

Foreign body aspiration/ impaction is a common condition in children and very young babies that are less than 4 months of age should not be overlooked. There may be delayed diagnosis especially when history to suggest foreign body aspiration is not given. Therefore, a high index of suspicion is necessary. The mouth should also be gently explored in children with respiratory distress as the impacted object may be felt as in this case. Improved vigilance by care give is important for prevention.

#### CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

#### ETHICAL APPROVAL

It is not applicable.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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#### Peer-review history:

The peer review history for this paper can be accessed here:  
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