



# Occult Foreign Body Aspiration Masquerading as Bronchial Asthma

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## Abstract

It is vital to revise any diagnosis when the patient is not responding to the standard therapy for the condition. One must look into rare possibilities like foreign body aspiration when a conscious adult patient presents with chronic respiratory symptoms resistant to treatment. A 63-years-old woman presented with progressive and persistent cough, dyspnea and wheezing, with no history of foreign body aspiration. She was diagnosed to have bronchial asthma elsewhere and was on treatment for the same for 3 years. CECT chest was suggestive of bronchial stenosis. Flexible bronchoscopy revealed the presence of a foreign body in the medial basal segment of the right lower lobe, which was removed using grasping forceps. Her symptoms improved following the procedure and were advised for follow-up.

**Keywords:** Occult foreign body; Bronchial Asthma; Aspiration

## Key Messages

- Occult foreign body aspiration should be considered in adults with chronic respiratory symptoms, which are not responding to usual treatment.
- Diagnosis of foreign body aspiration can be made by careful and judicious correlation of history, radiology and bronchoscopy.
- Bronchoscopy is advisable in doubtful cases considering the risk benefit ratio.

## Introduction

Foreign body aspiration is common in children compared to the adult population and usually presents with severe cough, stridor and respiratory distress [1]. Aspiration of foreign bodies in adults invariably leads to symptoms immediately. However, it is possible that the aspirated foreign body is long forgotten and is often diagnosed while evaluating other respiratory conditions [2]. Occult foreign body is often misdiagnosed as either asthma, atelectasis, bronchiolitis, emphysema, trachea-bronchitis or recurrent pneumonia [3,4]. A careful history, physical examination, judicious use of radiography and bronchoscopy can help in early diagnosis and effective management of airway foreign body aspirations.

## Case Presentation

A 63-year-old female homemaker presented to us with a persistent and progressively worsening cough of three years duration, which increased over one month. She had exertional breathlessness and wheezing of one-year, not associated with orthopnea or paroxysmal nocturnal dyspnea. Her past medical history was unremarkable except for diabetes mellitus. She was evaluated and treated with inhaled bronchodilators and cough suppressants elsewhere with which she had no improvement.

On general physical examination, she was moderately built and nourished, afebrile, with a pulse rate of 118 beats per min, blood pressure of 130/78 mm of Hg and a respiratory rate of 24 breathes per min. The respiratory system examination revealed monophonic wheeze, moreover the right side on auscultation.

Laboratory investigations were within normal limits except for elevated blood sugar levels. Chest Roentgenography showed increased bronchovascular markings (Figure 1). Spirometry with reversibility showed pre-bronchodilator FEV1/FVC=0.65 L; FEV1=0.64 L, 35% predicted value; FVC=0.99 L, 43% predicted value; and post-bronchodilator FEV1 of 0.72 L, 39% predicted value, with a reversibility of 11%. A Contrast-Enhanced Computed Tomography of chest (CECT) showed smooth narrowing of caliber with endoluminal wall thickening and specs of calcification

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**Figure 1:** Chest X-ray on admission showing increased broncho-vascular markings.



**Figure 2:** CT image showing endoluminal wall thickening and specs of calcification involving the upper lobar bronchus and bronchus intermedius on the right causing bronchial stenosis.



**Figure 3:** Bronchoscopy image showing foreign body in the right lower lobe bronchus.

involving the upper lobar bronchus and bronchus intermedius on the right causing bronchial stenosis (Figure 2). We did bronchoscopy, which showed narrowing of the right bronchus intermedius with bleeding erythematous mucosa (Figure 3). A grayish-white foreign body was seen in the medial basal segmental bronchus of the right lower lobe, which was carefully removed using grasping forceps. The foreign body measured 1.8 cm × 0.3 cm. The specimen was sent for histopathological analysis, showing a linear calcified structure. Histopathological examination of the bronchial mucosal biopsy specimen showed focally ulcerated mucosa overlying granulation tissue with lymphoplasmacytic infiltrate.

The patient admitted, on further enquiry, that she had aspirated a fishbone three years back, which she believed was coughed out. Considerable improvement in the symptoms was noted by the patient following the bronchoscopy and removal of foreign

body. However, the patient was not willing for a spirometric assessment following bronchoscopy. We started her on nebulized bronchodilators and injectable corticosteroids for 5 days. The patient improved symptomatically and was discharged with inhalational bronchodilator. She was stable during the follow-up visits.

## Discussion

Foreign body aspiration may mimic bronchial asthma, particularly in children less than two years of age [5]. Typical presentation is usually acute with severe cough, stridor, wheezing, often leading to respiratory distress. The possibility of foreign body aspiration is seldom considered in adults if immediate symptoms are unremarkable. Though not common, occult foreign body aspiration is seen in adults, fallaciously diagnosed as asthma, or chronic pneumonia. Such patients usually have cough, hemoptysis, dyspnea and wheezing or even remain asymptomatic with clinical examination showing reduced breath sounds at presentation [4-7].

Inadequate or improper history, low index of suspicion by the physician, and a normal chest radiograph are the factors that lead to delayed or misdiagnosis [5,7].

The identification of foreign bodies, volume loss or atelectasis, air trapping and consolidation distal to the obstruction on chest radiography may aid in the diagnosis [8]. Radiological diagnosis may not be helpful at times, especially if the foreign body is non radio-opaque. The site of impaction varies from person to person, and the most common site involved is the right lower lobe and the most common foreign body being organic matter, such as peanuts [7,9]. Complications tend to occur in occult or impacted foreign bodies. Early complications of tracheobronchial foreign body aspiration may include laryngeal edema, bleeding, pneumomediastinum, and pneumothorax. Late complications such as bronchiectasis, bronchial stricture or stenosis may follow. Sometimes, granulation tissue or inflammatory polyps may obscure the foreign body [7,10]. Removal of foreign body is of utmost importance, which can be done using a flexible or rigid bronchoscope, latter being preferred. The techniques used for foreign body removal include those using grasping forceps, dormia basket or fogarty catheter [11,12]. Fogarty catheter is being increasingly used for removal of impacted foreign bodies [13]. Surgical options may be looked into, when endoscopic techniques fail.

Our patient presented with a long standing persistent cough and breathlessness. She was not responding to conventional bronchodilators and other supportive medications. A forgotten history of foreign body aspiration, which was missed, led to misdiagnosis and improper management. Here the abnormal findings in the CECT chest prompted us to plan bronchoscopy and the detection of foreign body was purely incidental. CT thorax can give us an idea about the presence as well as location of foreign body. Fluoroscopy was found to be useful especially in radiolucent foreign bodies [6]. In our patient the foreign body was removed with the help of grasping forceps, though one has to choose the strategy depending on the nature and location of the specimen and physician preference. Patient condition improved partially following the procedure. Full recovery was restricted probably due to bronchial stenosis which is a known complication of long standing foreign body aspiration. Hence it is of utmost importance to identify foreign body aspiration both in children and adults, and removal at the earliest, in order to prevent the development of complications.

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