

〈Case Report〉

A case of unreported foreign body aspiration mimicking asthma in an adult

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ABSTRACT Unreported or unnoticed foreign body aspirations are rare in adults but not children. However, this prejudice may lead to a misdiagnosis or delayed diagnosis. We report the case of a 50-year-old woman who choked while eating bread rolls containing walnuts and figs; however, she did not notice that she had aspirated anything. Subsequently, she experienced a persistent cough and gradually complained of dyspnea and wheezing. Because of the prominent wheezing in her chest, a physician at a nearby clinic diagnosed an asthma attack and prescribed asthma drugs, including inhaled corticosteroids. However, her symptoms did not improve. The physician doubted the diagnosis of asthma and performed chest computed tomography, which revealed a foreign body in the right truncus intermedius. We then performed a bronchoscopy and confirmed a brown substance embedded in the right lower lobe bronchus, which was picked up using a basket. It was a walnut made from bread. The patient's symptoms immediately improved after removal. Even if an adult patient does not notice or report foreign body aspiration, physicians should consider this for differential diagnosis.

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INTRODUCTION

Foreign body aspiration is rare in adults compared with children¹⁾. Adults typically notice when aspirating and reporting something, whereas children are less likely to do the same. However, such prejudice may prevent physicians from considering foreign body aspiration in adults as a differential diagnosis, which can lead to

misdiagnosis, especially because it mimics or causes other respiratory diseases such as asthma, lung cancer, tuberculosis, bronchiectasis, and pneumonia. Delayed diagnosis causes discomfort owing to persistent symptoms, making it difficult to remove the foreign body.

Foreign body aspiration is not a new disease but has been repeatedly dealt with in case reports^{2, 3)},

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indicating that it should be considered in the differential diagnosis. We encountered an adult case of foreign body aspiration that was misdiagnosed as asthma. However, upon close questioning, the patient was correctly diagnosed and successfully treated. We hope that this case study will prevent physicians from delaying the diagnosis of adult foreign body aspiration and from administering erroneous treatment.

CASE REPORT

The patient is a 50-year-old woman with childhood asthma. One day, she choked while eating a bread roll containing walnuts and figs, but did not notice that she had aspirated something. Subsequently, she developed a persistent cough and gradually complained of dyspnea and wheezing. She visited a local clinic where a physician had heard of prominent wheezing in her chest, diagnosed an asthma attack, and prescribed asthma drugs, including inhaled corticosteroids. Eleven days later, her symptoms did not improve and she revisited the clinic. The physician suspected asthma and performed chest computed tomography (CT) because the chest radiograph showed no abnormalities. He observed a foreign body in the right truncus intermedius on CT and advised her to visit our university hospital for further examination.

The height and weight were 149 cm and 62 kg, respectively. Vital signs included a heart rate of 84 beats/min, a respiratory rate of 24/min, SpO₂ of 97%, and a body temperature of 37.0°C. Strong wheezing was heard in both lungs but was prominent on the right side. Blood examination revealed a slightly increased white blood cell count (10,430 /mL); however, the C-reactive protein level was within normal limits (0.09 mg/dL). Chest radiography revealed no apparent abnormalities (Fig. 1). However, a chest CT confirmed the presence of a foreign body in the right truncus intermedius (Fig. 2). The patient was admitted to our university

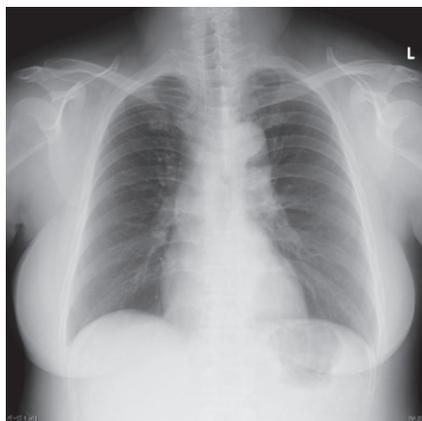


Fig. 1. Chest X-ray showing no apparent abnormality.

hospital and underwent bronchoscopy.

A brown substance was embedded in the right lower lobe of the bronchi (Fig. 3).

Initially, we attempted to remove the tumor using transbronchial biopsy forceps; however, it was soft and could not be grasped. We succeeded in retrieving a basket. The substance was the walnut contained in the bread, identical to that embedded in some bread brands purchased for confirmation. After removal, the patient's symptoms improved immediately, and she was discharged from the hospital the following day. After discharge from the hospital, the patient was followed up at her usual clinic.

DISCUSSION

Although unreported or unnoticed foreign body aspirations are uncommon in adults compared with children, physicians should be aware of their likelihood. The causes include chewing gum²⁾, Japanese kelp⁴⁾, stones, dental fragments, bone fragments, needles⁵⁾, and nuts, such as walnuts in the present case. Physicians should consider that adults do not always notice or self-report foreign body aspiration. The patient was initially treated with inhaled corticosteroids for suspected asthma. Patients may be erroneously treated for symptoms

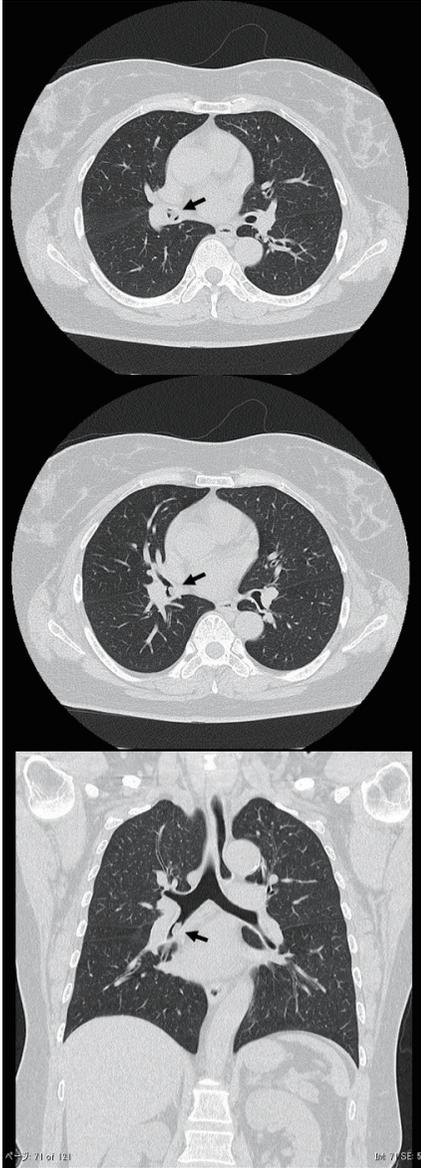


Fig. 2. Chest CT confirming the presence of a suspected foreign body (an arrow) in the right truncus intermedius.

resembling asthma or pneumonia such as cough, wheezing, dyspnea, or fever. They may also be misdiagnosed as having lung cancer when a foreign body is detected on radiological examination. A delayed diagnosis can worsen the patient's symptoms and make it difficult to remove the foreign body, as it may become fixed. Recent guidelines for

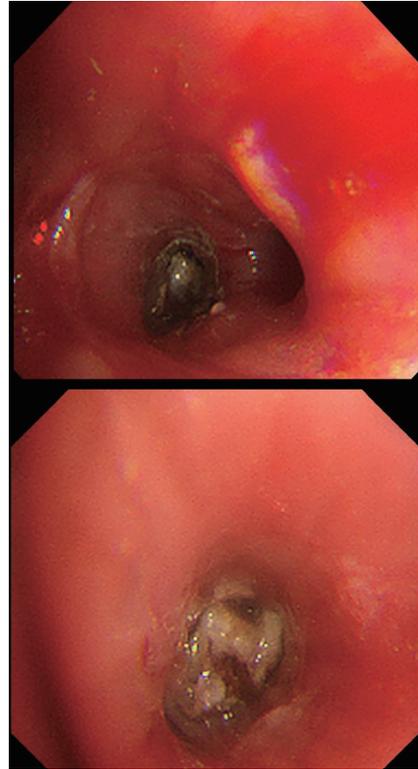


Fig. 3. Bronchoscopy indicating a brown substance embedded in the right lower lobe bronchus.

chronic cough state that a detailed history and examination should be directed to exclude foreign body aspiration, in addition to malignancy, infection, or the use of an angiotensin-converting enzyme inhibitor⁶⁾. The sudden onset of the cough suggested foreign body aspiration. Therefore, even when patients do not report foreign body aspiration, it should be considered a differential diagnosis, especially when the clinical course is atypical or the initial treatment does not work well. Although it was difficult to determine the nature of the foreign body from the X-ray images, careful interviews led to the suspicion that the aspirated object was a walnut.

Chest CT is a useful method for detecting foreign bodies in the tracheal bronchus, as demonstrated in the present case and others^{2, 4)}. X-ray opaque foreign bodies may be missed on chest X-rays, and

bronchoscopy is an invasive screening method. Therefore, a chest CT should be considered when occult foreign bodies are suspected.

Flexible bronchoscopy is usually the initial tool used to manage foreign bodies, owing to its high success rate⁷⁾. In the present case, although chest CT confirmed a suspected foreign body in the right truncus intermedius, bronchoscopy revealed that it was located in the right lower lobe bronchus, suggesting that it might have moved further. First, we attempted to remove it using forceps but failed. Although forceps are most frequently used to remove foreign bodies, they are not recommended for friable objects, such as food substances, because they may break the foreign body into multiple fragments that may migrate into the distal airways⁸⁾. When removing a fragile foreign body, it must be avoided as it collapses and falls further into obliteration. In this case, we used a basket because we believed that it would be difficult to remove the foreign body using forceps. Therefore, we could remove the foreign body without disintegration. It is important to select an appropriate method for foreign body removal based on its characteristics. No bleeding, local inflammation, or increase in purulent sputum was observed during the removal of the foreign body. Baskets are the second most commonly used retrieval tools in bronchoscopy because their flexibility in shape and size enables the removal of friable substances without breaking foreign bodies into pieces⁸⁾. Complications include abscess formation, recurrent pneumonia, bronchiectasis, bronchial stenosis or bronchial granuloma due to prolonged inflammation⁹⁾. In the present case, early diagnosis and appropriate treatment allowed for uncomplicated treatment.

Herein, we report a case of an unreported adult foreign body aspiration using a walnut embedded in bread. Although this can mimic respiratory diseases, such as asthma, careful questioning, and physical examination will help physicians suspect foreign

body aspiration.

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