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To cite this article: Bayram Metin, Şener Yıldırım & Yavuz Selim İntepe (2016) Adult foreign body aspirations treated for many years with the diagnosis of asthma: report of two cases, Acta Clinica Belgica, 71:3, 178-181, DOI: [10.1179/2295333715Y.0000000068](https://doi.org/10.1179/2295333715Y.0000000068)

To link to this article: <http://dx.doi.org/10.1179/2295333715Y.0000000068>



Published online: 09 Feb 2016.



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Case Report

Adult foreign body aspirations treated for many years with the diagnosis of asthma: report of two cases

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While foreign body aspirations are mostly seen in children, they are also observed in adulthood, but in a rare frequency. As it can be asymptomatic for a long time, it can also be confused with many clinical conditions, such as asthma, which can cause chronic cough. Various complications, such as bronchiectasis and pneumonia, can develop in the presence of long-standing aspirated foreign body. In this study, we present two cases one of whom diagnosed with asthma and treated for 30 years, and the other diagnosed with asthma and treated for 10 years. Although no pulmonary complications developed in our first case, bronchiectasis in the right middle lobe developed in our second case.

Keywords: Foreign body, Asthma, Bronchoscopy

Introduction

Although tracheobronchial foreign body aspiration is often seen in children, it is a situation that can be encountered in all age groups.¹ While people with foreign body aspiration are admitted to clinics with serious life-threatening clinical symptoms in general, it is not symptomatic in some cases and they may be observed with symptoms of respiratory diseases, such as non-specific asthma and COPD.² The foreign body cannot be seen on a chest X-ray because of its organic component, and it is a condition that may be difficult to diagnose because of the non-specific symptoms. History is the most important factor in diagnosis. Sometimes aspirated tracheobronchial foreign bodies have been treated without diagnosis or with incorrect diagnoses, such as chronic pneumonia, bronchitis, asthma, bronchiectasis, and even tumours for many years.³⁻⁵ In this study, we present a 73-year-old female patient with foreign body aspiration (bone) who was treated for asthma with complaints of unhealed cough for 30 years. The second patient was a 65-year-old female patient with foreign body aspiration (plant seed) who was treated for asthma about 10 years, and who had cystic bronchiectasis changes in the middle lobe.

Case 1

A 73-year-old female patient who was diagnosed with asthma and treated because of complaints of unhealed irritative cough for 30 years had no improvement in her health in terms of the cough and shortness of breath despite the bronchodilator treatments for many years. In reversibility pulmonary function tests (PFT), while the pre-dose FEV1 values were about 1.20 (40%), the post-dose FEV1 values were measured as 1.40 (50%). There were no abnormal findings on the PA chest radiographs. A suspected calcified foreign body 13×8mm in size at the level of right bronchus intermedius was observed on the chest computed tomography (CT) in the Chest Diseases Clinic where she was admitted. (Fig. 1) Here, fiberoptic bronchoscopy was performed. The inorganic foreign body at the level of right bronchus intermedius was observed on fiberoptic bronchoscopy, but a rigid bronchoscopy was planned because the forceps were not suitable for extraction (Fig. 2). Then, the patient was sent to our clinic and a rigid bronchoscopy was performed on the same day after the patient's preoperative preparations were completed. A foreign body 13×10mm in size similar to bone which was calcified depending on the bronchial secretion has been removed from the right bronchus intermedius. The removed object was sent to pathology, and it was reported as a piece of bone surrounded by calcified plaques (Fig. 3). When our patient was questioned again postoperatively, she stated that she could not remember the foreign body

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aspiration. The patient's cough was decreased from the first postoperative day, the PFT values were significantly improved on postoperative 10th day, and all the symptoms of the patient disappeared. The FEV1 was measured as 1.72 (65%) on the control PFT. The patient was discharged without any problems and her medications for asthma were stopped. She has been followed for 6 months without any needs for medical treatment.

Case 2

A 65-year-old female patient was diagnosed with asthma and bronchiectasis with complaints of cough, sputum production and shortness of breath. She used various bronchodilator drugs for about 10 years. The patient had used a CBAP device because of shortness of breath over the past 3 years. The patient was admitted to the Thoracic Surgery Clinic because of her complaints, and it was observed that there was a nodular lesion obstructing the right bronchus intermedius and bronchiectatic changes in the right middle lobe on thorax CT. The nodular areas were available in the area near bronchiectatic changes in the middle lobe. Intensive bronchodilator treatment and antibiotic treatment because of purulent secretions were started for 3 days for the patient whose preoperative medication was arranged. After the patient was provided to be relieved clinically, a rigid bronchoscopy was performed on the patient. The right main bronchus was observed to be collapsed from the carina and when the bronchoscope was advanced, it was observed that the upper lobe bronchus was open but the bronchus intermedius was almost completely obstructed with granulation tissue. When the lumen was opened by cleaning the granulation tissue with the help of forceps, a black foreign object (plant seed) approximately 7–8 mm in size was observed in the bronchus intermedius at the level of entry of the middle lobe. After the foreign body was removed with the help of forceps, the remaining granulation tissues in the lumen of bronchus intermedius were cleaned. The narrowed bronchial lumen was dilated using bronchoscopy tubes in different diameters. She stated that she did not remember the aspiration of the foreign object in postoperative questioning. After she was medically followed in the service for 3 days, the patient who had no complications in early postoperative period was discharged. In the follow-up, an operation was recommended to the patient for bronchiectasis in the middle lobe, but the patient, who was relieved because the foreign object was removed, did not want the surgery. Therefore, the patient is being followed with medical treatment.

Result

Asthma is a chronic inflammatory disease of the respiratory tract, which is characterised by recurrent airway obstruction caused by many activated cells and mediators as a result of encountering with allergen substances. The chronic inflammation in the airways leads to hypersensitivity of the respiratory tract characterised by recurrent cough and shortness of breath. Pollens, house dust mites, fungal spores, foods, cigarette smoke, odours and exercise-induced asthma are triggers. When a patient with chronic cough and asthma resistant to therapy is evaluated, the other clinical manifestations such as gastro-oesophageal reflux that may cause respiratory distress, vocal cord dysfunction, chronic bronchitis, bronchiectasis and foreign body aspiration must also be considered in differential diagnosis.^{6,7} Foreign body aspiration is mostly seen in childhood, and it is a common situation that the foreign body aspiration is confused with asthma. Although foreign body aspiration is a rare condition in adults, it is frequently seen in predisposing conditions, which are mental retardation, neurological disorders, alcohol and sedative use in adult patients.¹ In our cases, there were none of the above mentioned risk factors.

If the clinical situation is improved with steroid and bronchodilator treatment used in asthma attacks, it is correct to consider the situation in favour of asthma.^{3,7} In our both patients, a full symptomatic improvement could not be achieved despite the intensive bronchodilator treatment received for years, and the need to increase the dose of the bronchodilator treatment and to use the CBAP also aroused in recent years. As it is shown in our both cases, foreign body aspiration should be considered in the early stages in case of unhealed symptoms despite the treatment of asthma.

History, physical examination and radiological assessment should be performed in the diagnosis of foreign body aspirations. They can provide acute or chronic symptoms according to the localisation, size and shape of the aspirated foreign object. A stubborn choking cough is the most common finding of the foreign body aspiration. Sunflower, plant part, corn grain and similar organic foreign objects cannot be seen on X-rays. The foreign object can be observed in the airways with inspiratory and expiratory chest radiographs, lateral radiographs of the chest and the neck. Unilaterally increased ventilation or appearance of atelectasis on X-ray brings to mind the suspicion of foreign body aspiration. Thorax BT is known to be useful in exhibiting endobronchial foreign objects or similar changes, such as ventilation changes, atelectasis, bronchiectasis and pneumonia in the lung parenchyma in the early and late periods.^{4,8}

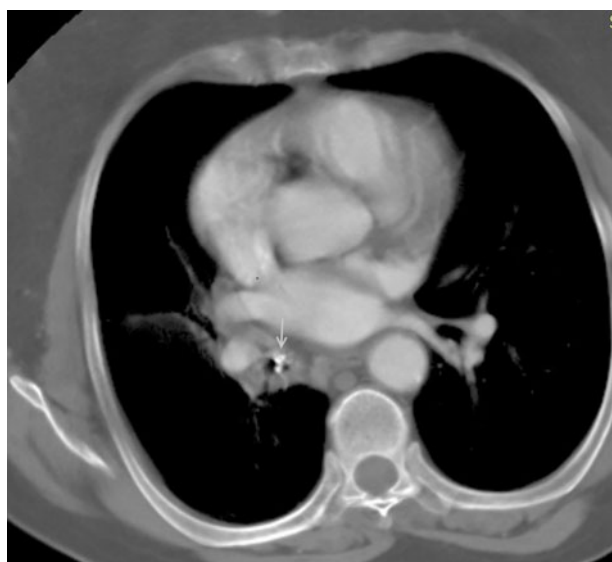


Figure 1 Foreign body into right intermediate bronchus of first cases showed by thoracic CT imaging.

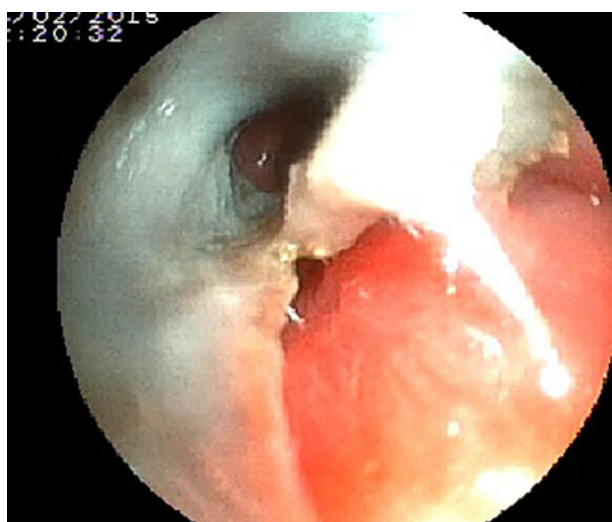


Figure 2 Foreign body into right intermediate bronchus of first cases showed via fiberoptic bronchoscopy.



Figure 3 Foreign body removed than first case was 13 × 10 mm in size and similar to bone.

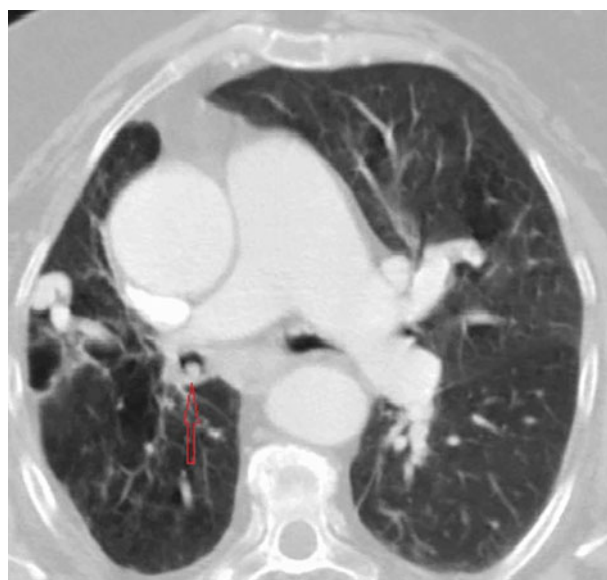


Figure 4 There were nodular lesion obstructing the right bronchus intermedius and bronchiectatic changes in the right middle lobe on thorax CT.



Figure 5 Foreign body removed than second case was a plant seed.

In our both cases, there was no history of foreign body aspirations. Both our cases were evaluated and treated as asthma because of the complaints of chronic cough and shortness of breath for many years. There was no sign of foreign body aspiration on PA chest radiographs of both our cases. After calcified foreign body was seen in the right bronchus intermedius on thorax CT of our first case, she was

sent to our clinic. There were cystic bronchiectasis changes in the right middle lobe on thorax CT images of our second case.

Adverse clinical conditions, such as pneumonia, bronchiectasis, empyema and destroyed lungs, have been claimed to have developed because of tracheo-bronchial foreign bodies. These clinical condition scan also occur in the late periods as well as in the early periods. As bronchiectasis can develop in a short time like 2 months, bronchiectasis can develop after many years.¹ In our first case, although there existed a foreign body for 30 years, no findings of bronchiectasis were detected radiologically. In our second case, cystic bronchiectasis changes were observed in the right middle lobe as a result of a 10-year period but it is not known exactly when the bronchiectasis developed.

Bronchoscopy is the gold standard method that should be applied in all patients with suspected foreign body aspirations. It has been stated in the literature that bronchoscopy should be performed for all patients with a history of foreign body aspiration even if they are asymptomatic and radiologically normal. In this way, although the rate of negative result is high for foreign body aspirations, when it is considered that the complications are prevented in those with positive results, this rate may be ignored.⁹ Rigid bronchoscopy is a preferred method when compared with fiberoptic bronchoscopy because of its facilities like the ease in removing the foreign body, the ease in the airway control because of its being applied during sleep, its ease in using large diameter forceps and providing continuation of the dilation and the airway.^{1,8,9} In our first case, fiberoptic bronchoscopy was performed first, but it was observed in the rigid bronchoscopy under general anaesthesia that a foreign body in the right bronchus intermedius existed. In our second case, after the foreign body was removed, the stenosis in the right main bronchial system was expanded by dilating and cleaning the granulation tissue and by using bronchoscopy with different diameters.

Consequently, foreign body aspiration should be considered in patients who do not respond to bronchodilator treatment for chronic asthma symptoms, such as irritative cough and shortness of breath. Bronchoscopic evaluation should be performed in all asthma patients who have no radiological evidence, and who do not improve with medical treatment. Fiberoptic bronchoscopy can be used for this purpose, but when foreign body aspiration is

observed, the foreign body should be removed and rigid bronchoscope should be performed to ensure the continuity of the airway by cleaning the dilatation and the granulation tissue.

Acknowledgements

All the participants are informed about the study and have been obtained from patients where appropriate, an ethics Committee (institutional review board) has given approval. And the study was performed according to Declaration of Helsinki as revised in 2000. There is no conflict of interest between the authors. We did not send this manuscript to other any journals.

Disclaimer statements

Contributors BM: writer, surgeon, ŞY: analyzer, surgeon, YSI: clinician, corrector.

Funding None.

Conflict of interest There is no conflict of interest between the authors

Ethics approval All the participants are informed about the study and has been obtained from patients where appropriate, an ethics Committee (institutional review board) has given approval. And the study was performed according to Declaration of Helsinki as revised in 2000.

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