



Foreign body aspiration in a 60-year-old man: A case report

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Foreign body aspiration occurs throughout the world and can manifest in various forms. This medical condition can occasionally take place with no symptoms or without any acute symptoms. Diagnosis and treatment of this disease require the full recognition of the associated symptoms in the patient. Misdiagnosis or delayed diagnosis in these patients is associated with significant risks and complications. We describe a 60-year-old man presented with dyspnea caused by the aspiration of a door hinge swallowed in a suicide attempt. The patient had a history of psychosis. After patient hospitalization and implementation of imaging procedures, an object was detected in the left bronchus. The aspirated foreign body can be removed in 98% of the cases; however, in case of failure, the patients should be subjected to thoracotomy. Tracheostomy may occur if the foreign body is larger than the subglottic region. Steroids and antibiotics are not routinely required before bronchoscopy; however, they are administered if observing a severe inflammation or airway infection. The patient can be discharged from the hospital on the same day in case of not having acute emergency problems or complications, such as pneumonia, pulmonary abscess, and persistent hypoxia.

Keywords: Aspiration, Foreign body, Iran

Introduction

Foreign body aspiration occurs throughout the world and can manifest in various forms. This medical condition can occasionally take place with no symptoms or without any acute symptoms. However, it can also present with serious and harmful symptoms and cause irreversible damages to the lungs [1]. The incidence of foreign body aspiration in adults, unlike children, is mostly due to aging, neurological and mental disorders, loose tooth, alcoholism, and addiction [2,3]. The most commonly aspirated foreign bodies in children include toys, screws, and other small household objects, while in adults, foods, such as chickpea, almonds, plant seeds, and bones, mostly account for this condition [4].

Diagnosis and treatment of this disease require the full recognition of the associated symptoms in the patient. Misdiagnosis or delayed diagnosis in these patients is associated with significant risks and complications. The signs and symptoms of the patients depend on the type of the aspirated body, its location in the respiratory

system, its size, and the duration it remains in the respiratory system. Organic compounds cause more intense inflammation in the respiratory system. On the other hand, the aspiration of small mineral materials often occurs without any pain or symptoms and manifests in the long run in the form of respiratory problems caused by airway obstruction [5].

In general, three phases occur after the ingestion and aspiration of the foreign body. The first phase (primary incidence) involves the incidence of intense coughing, choking at the time of eating, retching, bluish discoloration of the face, and airway obstruction immediately after the foreign body aspiration. The second phase (asymptomatic phase) includes the settlement of the foreign body in the respiratory system and subsidence of the symptoms. This stage is ambiguous and causes late patient referral to the hospital. Furthermore, in this stage, the physician may also fail to detect the presence of the foreign body due to the absence of symptoms, and consequently, the definitive or proper treatment may not be administered. The third phase (stage of complications) includes wounds, obstruction, or infection that facilitate the detection of the foreign body by the physician [6].

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Computed tomography (CT) scan is an excellent method for the diagnosis of this condition [7]. The aspiration of a foreign body can result in a number of complications, including acute airway obstruction and sudden death, pneumonia, lung collapse, pulmonary abscess, and septicemia. Foreign body aspiration is treated by bronchoscopy, which also facilitates a definitive diagnosis of this condition, under general anesthesia. However, in case the foreign body cannot be removed by bronchoscopy, thoracotomy method is applied for the management of the condition [8]. The proposition of bronchoscopy resulted in a sharp decline in the rate of mortality caused by foreign body aspiration, which formerly accounted for a high mortality [9]. Based on the evidence, the consideration of the length of the time the foreign body remains in the respiratory system and implementation of patient physical examination are matters of significant importance in the diagnosis of this medical condition [10].

Case presentation

A 60-year-old man referring to the emergency department of the 5th Azar Hospital in Golestan, Iran, and presented with dyspnea caused by the aspiration of a door hinge swallowed in a suicide attempt. The patient had a history of psychosis. After admission and implementation of imaging procedures, an object was detected in the left bronchus (Figure 1).



Figure 1. Location of the door hinge in the left bronchus

The patient was transferred to the operating room 12 hours after admission. After the administration of sedation for the patient under the supervision of anesthesia team, the thoracic surgery specialist surgery successfully removed the foreign body through rigid bronchoscopy. After recovery, the patient was transferred to the general ward. He was discharged with good general

condition and without any symptoms suggesting respiratory problems or bronchial damage.

Discussion

Foreign body aspiration is less common in adults than in children. This condition is accompanied with such symptoms as coughing, dyspnea, and airway obstruction in children. Foreign body aspiration is associated with aging, neurological disorders, and alcohol consumption in adults [11].

The aspiration of a foreign body in the airways can lead to atelectasis, perforation, inflammatory reactions, pulmonary inflammation, pneumothorax, and even death [13]. This condition more commonly occurs in the right bronchus than in the left one mainly due to the larger diameter of the right bronchus and greater left bronchial angle in relation to the foreign object [14].

Early diagnosis and timely treatment are very important measures that can prevent the incidence of serious complications. Development of granulation tissue and infection is usually observed in cases with delayed presentation. In this regard, tissue reaction in patients treated in less than 24 h is reported as 0.8%. However, this reaction is presented as 20% and 100% in patients receiving the treatment after 2-20 and 30 days, respectively [15].

This condition is usually diagnosed and managed by means of imaging techniques, such as X-ray, CT scan, and bronchoscopy. Chest X-ray is the technique of the first-choice when the foreign body is located in the thoraco-brachial region. CT scan is applied prior to the implementation of bronchoscopy [16].

Most of the foreign bodies are removed by both rigid and flexible bronoscopies based on their size and location [11]. Rigid bronchoscopy under general anesthesia is the best technique for the diagnosis and treatment of these patients. On the other hand, flexible bronchoscopy is more available and more widely used by trained physicians [6]. Typically, the rigid type is used to remove the object, whereas the fiberoptic type is utilized for the diagnosis of the condition.

Furthermore, the cases with head and neck trauma and those with a foreign body in the subsegmental bronchi are managed with fiberoptic bronchoscopy. Despite the conventional use of rigid bronchoscopy to diagnose and treat this medical condition, recent studies have reported similar success rates for fiberoptic and rigid methods. Therefore, in case of being sufficiently

experienced, the fiberoptic technique that does not require general anesthesia can be implemented to this end [17].

Conclusion

The aspirated foreign body can be removed in 98% of the cases; however, in case of failure, the patients should be subjected to thoracotomy. Tracheostomy may occur if the foreign body is larger than the subglottic region. Steroids and antibiotics are not routinely required before bronchoscopy; however, they are administered if observing a severe inflammation or airway infection. The patient can be discharged from the hospital on the same day in case of not having acute emergency problems or complications, such as pneumonia, pulmonary abscess, and persistent hypoxia.

Conflicts of interest

None declared.

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