

A Case of Foreign Body Getting Lodged in Trachea During Removal

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(Received:11/07/2014, Accepted: 08/10/2014)

Abstract :

Foreign body aspiration in the adult airway is very rare. A neglected foreign body can occur when the patient is mentally challenged or is in an unconscious condition such as following trauma. The diagnosis can be difficult and may be missed even by experienced doctors because the initial choking episode is not witnessed. It is important for clinicians to maintain a high index of suspicion for the diagnosis of foreign body aspiration. Removing the aspirated foreign body under appropriate anaesthetic technique needs skilful expertise. Retrieval procedure is risky and sudden decompensation of the patient can occur especially when the foreign body gets lodged in the trachea during removal. In our case while attempting to remove the foreign body, it got lodged in trachea, making ventilation impossible. We report a case of successful anaesthetic management of a foreign body in the airway, intraoperatively causing life-threatening hypoxemia.

Keywords: Arecunut, bronchoscopy, foreign body aspiration

Introduction

Foreign body aspiration is a condition seen commonly in children. Foreign body aspiration in adults is common in the setting of advanced age, underlying neurological disorder, poor dentition, alcohol consumption and sedative use^{1,2}. It can present in a variety of ways, ranging from no or trivial symptoms to irreversible damage to the lung which may be life threatening³. Aspiration of organic material such as nuts, seeds, vegetables and bones have been described in adults⁴. A retained foreign body can result in inflammatory response and granulation tissue formation around the object. Extraction of this sort of object is complicated by the smooth, hard, curved surface which prevents grasping of the object, especially in the confined space of the bronchus⁵. We report a case of a foreign body aspiration which remained in the right bronchus for 15 days, successfully removed by rigid bronchoscopy.

Case Report

A 29-year-old woman presented with a fifteen day history of distressing dry cough along with a three day history of fever and right chest pain. Patient also gave history of sudden onset cough and choking on chewing betel quid 15 days back. On physical examination, she was febrile and appeared toxic. Chest examination

revealed right basal dullness to percussion with reduced breath sounds on auscultation. A chest radiograph (fig.1) showed right middle and lower lobe collapse. A virtual bronchoscopic CT thorax done, showed a foreign body in the right bronchus intermedius with surrounding oedema.

Patient was posted for rigid bronchoscopy for foreign body removal on the same day. In the operation theatre patient premedicated with injection glycopyrrolate 0.02mg/kg and fentanyl 2 microgram/kg. Preoxygenated with 100% oxygen and induced with iv propofol 2mg/kg, paralysed with iv succinylcholine 2mg/kg and anaesthesia maintained with 100% oxygen, isoflurane and intermittent apnoeic ventilation through side port of ventilating rigid bronchoscope. Due to friability of oedematous foreign body many attempts were made to remove it. As the surgeon needed longer time to remove the foreign body patient was further paralysed with injection vecuronium. While attempting to remove the foreign body, it got lodged in trachea, making ventilation impossible. Patient desaturated SpO₂ < 50% with onset of hypoxia and bradycardia interrupting further removal of foreign body. Surgeon was requested to push the foreign body back into the diseased bronchi. Anaesthetists took over the airway and positive pressure ventilation initiated. Initially there was resistance to ventilation, later the ventilation was smooth and oxygen saturation returned to baseline.

Bronchoscope reinserted and repeat foreign body removal attempted. The big chunk of foreign body (fig.2)

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was successfully taken out. Bronchoscope was brought out after confirming that there were no remnants of foreign body in the airway. Further patient was intubated and ventilated electively. Injection hydrocortisone 1mg/kg and salbutamol nebulisation given. Patient was reversed with spontaneous ventilation efforts. Patient extubated after confirming adequate breathing efforts and adequate conscious level.

Discussion

Although foreign bodies which are present in the tracheobronchial tree are rare in adults, clinicians must be aware of their likelihood. In our case diagnosis was missed previously, and was treated with antibiotics based on clinical and radiological suspicion. Our case highlights the potential diagnostic challenge posed by this condition, and illustrates the importance of obtaining a good history and maintaining a high index of clinical suspicion to arrive at the correct diagnosis. Coughing, wheezing, dyspnea and noisy breathing are the common presentations. Failure of early interventions can also lead to complications such as hypoxia, stenosis, and infection.

Tracheobronchial obstruction by a foreign body was first described as a cause of wheezing by Struthers in 1852. In adults, the most commonly aspirated material are food particles. Significant neurological impairment, alcohol and drug intoxication and poor dentition are identified risk factors for such events in adults. However, as seen in this case, foreign body aspiration can occur, even in the absence of identifiable risk factors.

Foreign bodies that are able to pass through the vocal cords often lodge at the carina and right main stem bronchus. Knowing the location, type, degree of airway obstruction is very important because it will influence the approach for removal and for anaesthetic technique. A long-standing foreign body can move into bronchus by migration and endobronchial erosion from the lung parenchyma. In current practice, flexible bronchoscopy becomes the first choice for initial evaluation of bronchial foreign body and this allows successful removal in majority of cases. However, rigid bronchoscopy is still considered a reasonable option for removal of bronchial foreign body, especially in children.



Fig.1

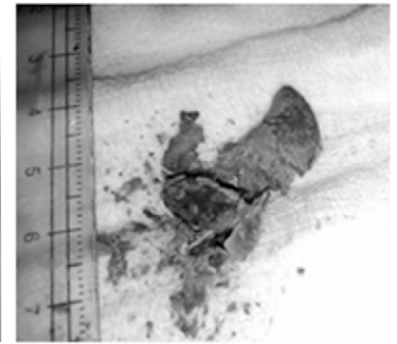


Fig. 2

During bronchoscopy under general anaesthesia with apnoeic ventilation the foreign body was removed in piece meal because organic foreign bodies absorb water and increase in size and tend to be slippery, thus making their retrieval difficult. Attempt was made to remove a big part of foreign body, which lodged in the trachea. The diseased lung was already compromised due to inflammatory reaction of bronchial mucosa to foreign body. Due to obstruction of the trachea ventilation became impossible.

Conclusion

In conclusion, foreign body aspiration should always be considered in the aetiology of recurrent pulmonary infections, haemoptysis, lung abscess and middle lobe syndrome all of which may necessitate a surgical intervention. A retained foreign body can result in inflammatory response and granulation tissue formation around the object which make the foreign body removal difficult and needs anaesthetist and surgeon vigilance during its removal. As in our case foreign body got lodged in trachea producing obstruction of both lung and making the clinical situation worse.

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How to Cite this article :

Patil G, Ajjappa A. A Case of Foreign Body Getting Lodged in Trachea During Removal J Pub Health Med Res, 2014;2(2):55-6.

Funding: Declared none

Conflict of interest: Declared none