

Case Report

Delayed Presentation Of A Girl With A Sour Plum Seed In The Trachea

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Abstract:

Foreign body in the airway is very rare as compared to the alimentary tract. Food particles constitute among the commonest foreign body. The airway obstruction caused by foreign body dislodgement often present with acute emergency condition. The pathognomonic history includes history of choking and noisy breathing. It is an acute emergency and requires immediate medical attention. However in small number of patients the earliest symptom may be ignored leaving only mild neck discomfort. We report a case of comfortable girl with foreign body airway who finally sought treatment after presented with delayed sign and symptoms of partial airway obstruction.

Key Words: sour plum seed, trachea

Introduction

The incidence of foreign body airway in the United States is up to 3500 deaths per year from 2005 to 2007¹. Approximately 80% of this is in the paediatric age group, with peak incidence between one to two years of age². The male to female ratio is 2:1³. In adult, the incidence of foreign body airway is associated with 3.3% mortality with the patient mean age is 65 years with increased in age correlating with more worse outcome⁴.

Acute asphyxia may occur if a foreign body occludes any part of upper airway from oropharynx to the major bronchi³. The trachea was the most common site of foreign body lodgment in the airway accounting for 52.2% cases⁵. Among the risk factors leading to the high incidence of foreign body airway are children who are running while eating or playing with small objects, elderly with poor dentition or lack of coordinated swallowing mechanism, carelessness and curiosity⁶.

Foreign body airway usually present as acute emergency. On rare occasions it can be in delayed mode of presentation. Early presentations are common in younger children, with the presence of respiratory distress symptoms or swallowing difficulty. While delayed presentation is more common because of mild symptoms tolerated by the patients or it can be accidental detection in asymptomatic cases. The delayed symptoms of foreign body may mimic with other common conditions such as asthma, recurrent pneumonia, upper respiratory tract infection and persistent cough⁵.

Case Report

A 12-year-old girl presented with a voice change after accidentally ingested a sour plum seed during eating while swimming a day before. Apart from that, she was still able to tolerate orally well without any odynophagia, dysphagia or any difficulty in breathing. Physical examination revealed a comfortable girl with no noisy breathing. There was presence of hoarseness and audible inspiratory stridor during deep inspiration. On laryngoscopy, no

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foreign body was noted. There was no pooling of saliva either. Auscultation of the lungs revealed loud transmitted sound heard in bilateral lungs field.

Lateral neck radiograph revealed an opaque foreign body in the trachea at the level of C6 (Figure I). On chest radiograph, there was no hyperinflated lung or emphysematous changes noted. She was rushed to operating room immediately for direct laryngoscopy and bronchoscopy. The patient was put under inhalational sedation. Intraoperatively, a sour plum seed was visualized below the vocal cord at the level of subglottis and it was removed using a crocodile forceps through the suspended laryngoscope. There was neither any difficulty in removal of foreign body nor any desaturation episode occurred during the procedure. After the removal, the remainder of trachea up to the level of carina was examined and was found to be normal. There was no other foreign body or any laceration seen over the mucosa surface.

She was observed for overnight in general ward and discharged well on the next day without any complication post operatively.



Figure I: A lateral neck radiograph revealed an opaque foreign body (in circle) at the level of C6 vertebra



Figure II: A sour plum seed removed

Discussion

Foreign body dislodgement into the airway is a life threatening event. It is relatively frequent accident in children and is a leading cause of accidental death in children in less than 5 years of age⁷. 64% of airway foreign bodies in younger children were found to be food items, often nuts and seeds⁸ while in adults the common items are medications and meats⁷.

Foreign body airway can cause partial or complete airway obstruction depending on the type of foreign bodies, size, shape and level of obstruction. The “Heimlich manouvre” is emergency manouvers that are recommended in managing patient with airway obstruction to encourage expectoration of laryngeal foreign body in children⁹.

A partial obstructing foreign body will cause signs and symptoms of incomplete airway obstruction such as difficulty in breathing, stridor, altered voice, dysphagia or odynophagia. While when airway obstruction is complete, the patient will be unable to breathe or to phonate and may present in comatose and apneic episodes. In our case, the small size oval-shaped sour plum seed in relative to trachea diameter does cause partial airway obstruction.

Plain neck and chest radiograph play important roles in diagnosis of radio-opaque foreign body. However, radiolucent foreign bodies such as rubber material, groundnuts and bolus of meat are not easily detected by plain radiograph, hence indirect changes should be looked for. Hyperinflated lung or obstructive emphysema may suggest the foreign body airway. The chest radiograph sensitivity was 66% with a specificity of 51%¹⁰.

Establishing a secured patent airway is the most important goal in the resuscitation of a patient with foreign body airway. Once patient is able to breathe spontaneously and the oxygen saturation is satisfactory, the best approach is to observe the patient for any sign of complete airway obstruction while mobilizing the necessary providers for prompt removal in operation theatre.

In operation theatre, the patient should be fully pre-oxygenated with all appropriate equipments

ready, sedation titrated and topical anaesthesia administered. In this case, inhalational sedation was used. Otherwise further manipulation will be more difficult once patient become apprehensive and uncooperative.

Direct laryngoscopy and bronchoscopy can be both diagnostic and therapeutic in managing patient with airway obstruction. 99% of foreign body airways were successfully treated endoscopically¹¹. With careful insertion of laryngoscope, inspecting at each level of insertion before advancing the scopes to ensure the foreign body is not pushed further down by tip of laryngoscope. Once the foreign body is identified, the removal can be done using either Magill forceps or other instrument such as crocodile forceps. The sharp foreign body should be grasped gently to prevent further trauma to the respiratory mucosa.

If no foreign body is identified with the glottis clearly visualized, the foreign body below the vocal cord is possible and the bronchoscopy should be performed to visualize the foreign body and a quick and efficient removal can be performed.

In the worse senario, if the foreign body failed to be removed, the intubation may be needed and strategy to convert obstructing tracheal foreign body to an obstructing mainstem bronchus may be considered to allow patient to ventilate with one lung. Tracheostomy may be indicated to reduce the risk of morbidity, mortality, anxiety or failed endotracheal intubation.

In our case, the cause of foreign body inhalation is due to carelessness. With the presence of symptom

and sign of incomplete airway obstruction, these had contributed to the delayed in seeking treatment. Darrow (2011) reported about 20.4% patient with foreign body airway presented to hospital between first to seventh days of incidence. The most common reasons for delay in seeking treatment were asymptomatic cases, financial constraint beside an inappropriate diagnosis and treatment given in the peripheral hospital¹¹.

Post operatively, most of the patients can be discharged within 24 hours without any steroid or antibiotic prescription. In some cases, the repeat radiograph and bronchoscopy may be indicated if there is uncertainty about complete removal and in persistence of the symptoms.

Incidence of airway obstruction can be reduced by education on eating habits such as to chew the food completely and not eating while doing vigorous activities¹²⁻¹³. Small objects should be kept away from toddlers. Any suspicious history of choking should be evaluated for foreign body obstruction to prevent further complications.

Conclusion

Foreign body airway can present with either early or late presentation depends on the degree of symptom severity. Establishing a secured and patent airway is the main goal in resuscitation of patient with acute upper airway obstruction to reduce morbidity and mortality. The high index of suspicious is essential in suspected foreign body airway in children even though the examination revealed normal clinical findings and the reference to experienced otolaryngologist is advisable.

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