Case Report

DOI: http://dx.doi.org/10.18203/issn.2454-5929.ijohns20200071

Dentures that keeps airway patent: a case report

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Received: 28 December 2019 Accepted: 14 January 2020

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ABSTRACT

Foreign body aspiration is a life-threatening condition that requires immediate attention and intervention. Foreign body aspiration in adults usually occurs during dental procedure or motor vehicle trauma. Classical symptoms include choking, cough, haemoptysis, hoarseness or stridor. This case report presents an incident of a foreign body lodged at the subglottic region in an adult wearing dental prosthesis; the main complaint was hoarseness post motor vehicle accident. High index of suspicion coupled with correct investigation will facilitate the diagnosis of a foreign body in the airway thus immediate intervention can be taken to prevent morbidity and mortality.

Keywords: Foreign body in adult, Subglottic foreign body, Dentures

INTRODUCTION

Foreign body aspiration is an uncommon issue in adults. About 80% of reported cases occur in children below 15 years of age. Foreign body aspiration can be a life-threatening condition if the aspirated object is large enough to cause complete airway obstruction. Here, we report on a case of a 61-year-old male who aspirated his dentures post motor vehicle accident and underwent successful extraction of the foreign body endoscopically.

CASE REPORT

A 61-year-old male presented to the otorhinolaryngology ward complaining of hoarseness and throat pain. He was referred by the emergency department of a district hospital after was involved in a motor vehicle accident. The patient was riding a motorcycle, and he crashed into a car in front of him. Post trauma, the patient sustained hoarseness, throat and facial pain, epistaxis, laceration of the lip and avulsion of the lower tooth. He had been wearing dentures for the upper quadrant of the teeth for the past five years. He complained of throat discomfort and hoarseness but denied any noisy breathing, dyspnoea, haemoptysis or chest pain.

During clinical examination, neither stridor nor chest indrawing was observed. Laryngeal crepitus was present. The auscultation of the lungs was clear and air entry was equal. Oral cavity examination was unremarkable. Cervical x-rays were conducted (Figure 1) and indirect laryngoscopy was performed, revealing a whitish object, which led to suspicion of a foreign body at the subglottic region. The foreign body was lodged in a horizontal position with certain subglottic areas still patent, thus breathing was not affected. However, the left vocal cord was immobile with obvious pooling of saliva at the supraglottic region. Other supraglottic structures appeared normal.

Subsequently, the patient was transferred to operating theatre for airway study and removal of foreign body under general anaesthesia with spontaneous ventilation. Direct laryngoscopy was performed using havas operating laryngoscope. Foreign body identified, noted major part of the foreign body located at subglottic with superior part of the foreign body lodged at posterior commissure of the left vocal cord (Figure 2). Optical forceps were used for the removal procedure. Foreign body was extracted with single attempt via oral cavity (Figure 3).



Figure 1: Lateral view of cervical X-ray showed loss of cervical lordosis with presence of two curvilinear radiopaque shadow, located at level C6.



Figure 2: Bedside indirect laryngoscopy showed foreign body lodged at glottis.

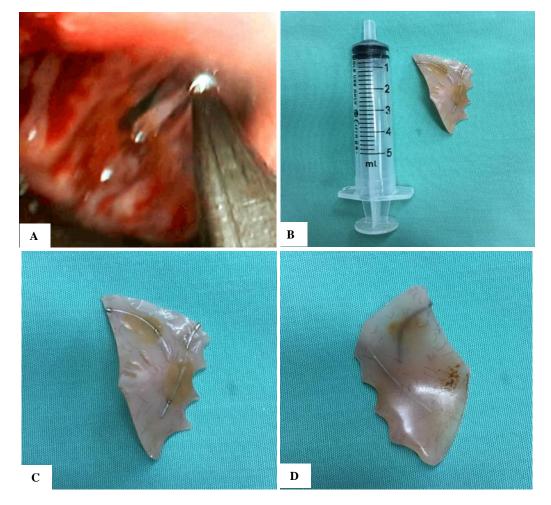


Figure 3: (A) Foreign body seen in subglottic, removal done in operating theatre using optical forceps, (B-D) foreign body denture, extracted out.

Noted two curvilinear wire as seen in cervical X-ray.

Postoperatively, patient was well, with no more hoarseness. He was successfully discharged a day after the procedure without any complications.

DISCUSSION

Having a foreign body in the airway is a rare occurrence, especially in adults. A foreign body in the tracheobronchial tree is uncommon due to airway protection mechanisms.² Coughing and swallowing are highly coordinated reflex behaviours whose common purpose is to protect the airway. The thyropharyngeal muscle responds to cough inducing stimuli to prepare a transient holding area for material that has been removed from the subglottic airway. The cricopharyngeal muscle coordinates with the larynx for pressure regulation when air is moving from the upper airway to the thorax (inspiration or swallow) or vice-versa (expiration reflex or vomiting).³ However, the incidence does not decrease over time.

Airway foreign bodies can be classified as inorganic or organic substances. Inorganic substances such as dental crowns, pins, coins and tacks are usually inert and sometimes may be tolerated for many years with a paucity of symptoms.⁴ The most common aspirated foreign bodies among adults are organic, for example fragment of bones and seed.⁵

The clinical presentation of the airway when a foreign body has entered depends on the site of impaction. With a large asphyxiating object occluding the larynx, acute presentation of severe coughing, choking, hoarseness and gagging is frequently seen. Sometimes, the patient may not be able to speak, gesticulates wildly and presents with cyanosis. If the foreign body is lodged below the cord in subglottic or tracheal region, an inspiratory stridor with bouts of coughing may be noted. If the foreign body passes into the bronchi, there may be minimal symptoms other than unilateral or localised wheezing.⁴ Therapeutic removal of foreign bodies is not a new concept. The earliest report of therapeutic removal of a foreign body in airway via bronchotomy was performed in the early 1800s. The first endoscopic removal occurred in 1897. Chevalier Jackson revolutionized the concept of endoscopic foreign body removal in the early 1900s with principles and techniques that remain in use today.6

In this patient, a diagnosis of foreign body in the airway was achieved due to a high index of suspicion, even though patient claimed he witnessed his dentures dislodging from his oral cavity. A cervical X-ray showed two curvilinear radiopaque shadows at the level of C6-C7, leading to suspicion that an object may be lodged in the trachea. While symptoms, physical examination findings and clinical history had high sensitivities, radiological findings had the highest specificity. Based on these findings, the decision to proceed with endoscopic operation was made.

Our case reported successful extraction of the foreign body using optical forceps assisted by direct laryngoscopy. The rationale of using direct laryngoscopy in this case instead of rigid or flexible bronchoscopy was due to the location of the foreign body, which was visualised with direct laryngoscopy. The most cited methods for removing foreign bodies in airways are rigid and flexible bronchoscopies. Surgical extraction of foreign bodies through bronchotomy or even segmental resection under general anaesthesia is the last resort in cases where extraction using bronchoscopy has been unsuccessful. The presence of an experienced surgeon and anaesthesiologist is vital to prevent significant morbidity and mortality associated with unsuccessful retrieval attempts using a bronchoscope. ¹

CONCLUSION

A thorough history and physical examination with radiological investigation from two views is sufficient for early diagnosis of a foreign body in the upper airway and can thus prevent further possible complications.

ACKNOWLEDGEMENTS

Authors would like to thanks all the staff in the Otorhinolaryngology Department, Radiographer, and Operating Theatre staff.

Funding: No funding sources Conflict of interest: None declared Ethical approval: Not required

REFERENCES

- 1. Mahmoud M, Imam S, Patel H, King M. Foreign body aspiration of a dental bridge in the left main stem bronchus, case report. Medicine. 2012;142(4):1021.
- 2. Figueiredo R, Machado W. Foreign body aspiration through tracheostomy: Case report. Braz J Otorhinolaryngol. 2005;71(2):234-6.
- 3. Pitts T. Airway protective mechanisms. Lung. 2014;192(1):27-31.
- 4. Rafanan A, Mehta A. Adult airway foreign body removal. What's new? Clin Chest Med. 2001;22(2):319-30.
- 5. Blanco Ramos M, Botana-Rial M, Gallas Torreira M. Update in extraction of airway foreign body in adults. J Thoracic Dis. 2016;8(11):3452-6.
- Medscape. Foreign Bodies of the Airway. Available at: https://emedicine.medscape.com/article/872498. Accessed on 24 NOvember 2019.
- 7. Kiyan G, Gocmen B, Tugtepe H. Foreign body aspiration in children: The value of diagnostic criteria international. J Paediatr Otorhinolaryngol. 2009;73(7):963-7.

Cite this article as: Razak SFA, Jamarun SA, Sanudin SH. Dentures that keeps airway patent: a case report. Int J Otorhinolaryngol Head Neck Surg 2020;6:394-6.