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Earring aspiration in a toddler: A case report

DOI:<http://dx.doi.org/10.4314/njp.v46i3.5>

Accepted: 28th August 2019

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Abstract: Aspiration of foreign body is not an uncommon life-threatening emergency in pediatric practice. Objects that are commonly aspirated include nuts, beans, toys, and in very rare instances jewelries among others.

This is a 2 year old female toddler who presented in our facility on account of sudden onset of cough which became recurrent with associated difficulty with breathing of one month duration. Symptoms were first observed immediately after she was noticed to have aspirated a piece of her rigid earrings that was left on a table at home. She had chest x-ray that showed evidence of an opaque foreign

body in the left main bronchus for which she had fluoroscopy-guided bronchoscopy with removal of a rigid metallic ear-ring. The patient was subsequently discharged on the second day post-operation.

Ear-ring aspiration is uncommon in children, but when it occurs it could result in grave consequences. Parents and guardians should suspect possibility of such aspiration if there is a missing ear-ring belonging to a child who has sudden onset of respiratory difficulty.

Keywords: Toddler, Aspiration, Fluoroscopy, Bronchoscopy.

Introduction

Foreign body aspiration is a common cause of respiratory emergency that portends significant morbidity and mortality in children.¹⁻⁵ Mortality rate from aspiration among children in sub-Saharan Africa ranges from 2.7 to 8.3%.⁶⁻⁸ It is most common among young children who are below five years old but the peak age is one to three years;^{1,9} the reason is attributed to the incomplete dentition in this age group, ease of distraction while eating coupled with their curiosity and increased oral tendency.² Poor parental supervision is also a major risk factor in this present age when many children are left at home while parents strive hard for daily living. There is a slight male preponderance in the distribution of affected children, and this is largely due to the inquisitive and energetic nature of males.^{2,10} Choking, sudden onset of paroxysmal cough, difficulty with breathing and sometimes wheezing are common symptoms associated with foreign body aspiration.^{2,4,11} Chest x-ray is a useful diagnostic modality of foreign object aspiration;¹²⁻¹³ computerized tomographic scan (CT scan) is more sensitive⁷ but its cost is prohibitive. Fluoroscopy-guided bronchoscopy is the most common therapeutic intervention for removal of aspirated foreign body in children,^{3,9} and has high success rate. Tracheostomy may also be life-saving if object is located in the trachea with impending respiratory failure. Prognosis following aspiration depends on the type of foreign body, site of arrest,

presence of asphyxiation and delay in diagnosis before intervention.^{2,14}

Case Report

O. G, a 2 year old female toddler who presented in our facility on account of sudden onset of cough and difficulty with breathing which have been recurrent for one month. Symptoms were first observed immediately after she was noticed to have accidentally swallowed a piece of her rigid earrings that were placed on a table at home. There was no bluish discoloration of her lip nor extremities. She had no history suggestive of cognitive impairment. Parents had applied home remedies with the hope that the child would pass the object in stool but this proved abortive and symptoms persisted. After about three weeks of onset of symptoms, she presented at a Specialist hospital, where she did chest x-ray that showed evidence of foreign body in the left main bronchus with left sided mediastinal shift and opacity on the left lower zone (Figure 1). She was subsequently referred to a University Teaching Hospital where she had a second referral to our facility due to logistic reasons. On examination, she was conscious with no cyanosis and no feature of respiratory distress except during episodic cough. She had stable vital signs, however respiratory system examination showed reduced breath sound in the left lower and middle lung zones while other systems were essentially normal. She had a repeat

chest x-ray in our center that showed similar findings; she subsequently had fluoroscopy-guided bronchoscopy with removal of a gold-plated metallic earring (Figure 2). Her vital signs were normal few hours after the operation and she had a repeat chest x-ray that was essentially normal (Figure 3). The patient was subsequently discharged on the second day post-operation. She was scheduled for a follow up visit in two weeks but parents defaulted.

Fig 1: X-ray film showing opaque object (earring) in left main bronchus.

(A) Postero-anterior view, (B) Lateral view



Fig 2: Extracted Earring after removal through fluoroscopy-guided bronchoscopy



Fig 3: X-ray film immediately after removal of foreign body.



Discussion

Objects that are commonly aspirated are either organic or inorganic, but the former is more common in most reports.^{2,5} Nuts, beans, vegetables are more commonly aspirated organic substances, while the aspirated inorganic objects include jewelries and whistles.^{2,5} The rarity of aspiration of earring could be due to the presence of

its hook or sharp end which may cause injury while handling or cause trauma to the mouth when making attempt to swallow or aspirate. Once aspirated, earring may result in total tracheobronchial obstruction with attendant asphyxia if intervention is delayed. In addition, the hook can cause bleeding due to mucosal injury along the airway. Bronchi are the most common affected sites followed by the trachea while the bronchioles and larynx are least affected.¹⁵⁻¹⁶ A large pool of reports have posited that aspirated objects are more common in the right bronchus compared to the left bronchus owing to the relatively wide width and straight course of the former compared to the latter.^{16,17} It has been observed that erect and right lateral positions tend to favor aspiration in the right bronchus whereas left lateral position increases tendency of object aspiration in the left bronchus. Lack of eyewitness account by adults often makes the suspicion of aspiration extant.

Common radiographic findings suggestive of aspiration include opacity of metallic aspirated object, atelectasis, emphysema, and even pneumonic changes etc. However a normal finding on plane chest radiograph does not exclude aspiration;^{4,13} this may occur if aspirated object is small and radiolucent.¹² Bronchoscopy is a more objective diagnostic modality as well as the most common therapeutic intervention for removal of aspirated foreign in children.⁴ In our report, there was no inflammatory exudate around the gold-plated earring during bronchoscopy; this is due to the anti-inflammatory properties of gold.¹⁸ Site of impaction of aspirated object, presence of asphyxiation and time lapse before intervention are important prognostic indices following aspiration. Prevention of foreign body including earring aspiration involves strict parental supervision and avoidance of small jewelries and toys in young children below five years old. This will help to reduce the morbidity and mortality associated with accidental injuries in children.

Conclusion

Earring aspiration is uncommon in children, but when it occurs it could result in grievous medical and surgical emergency. It should be suspected if there is a missing earring belonging to a child who has sudden onset of breathing difficulty. As a way of prevention, caregivers may rather avoid use of earring among children who are below three years old.

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