Case Report

Unusual presentation of subglottic foreign body in pediatrics: two case reports

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Abstract

History of foreign body aspiration presumably is as old as mankind. 90% of foreign bodies aspirated are bronchial and only 10% foreign bodies are laryngeal or tracheal. Our first case is unique in sense aspiration was due to fruit gel chocolate which clinically presented as a catastrophic event due subglottic obstruction and child's life was saved with tracheal aspiration following intubation. The second case was unique in sense unlike usual severe symptoms following subglottic foreign body aspirations this child presented with time lapse of seven days after aspiration and only stridor as symptom.

Keywords: Foreign body, Larynx.

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INTRODUCTION

Foreign body aspiration is a potentially fatal accident likely to happen as long as children continue exploring the world using their hand and mouth. Larynx being narrow part of airway has spincteric action. Impaction of foreign body in Larynx is very rare as most subjects are able to cough it out spontaneously. [1] Below we present two rare cases of subglottic foreign body aspiration managed in our hospital.

CASE 1

7 month male child brought to pediatric emergency with history of sudden onset respiratory distress while playing with his 7 year old elder siblings. There was history of severe choking spell which the mother guessed to be due to fruit gel chocolate aspiration given to elder sibling. On receiving the child in hospital, the child was gasping, pale with cold peripheries, pulses were not felt, heart rate< 40 beats per minute. Child presented with cardio respiratory arrest. Immediate resuscitation in form of chest compression, fluid bolus and securing airway was done. Laryngoscopy done while securing airway did not show any visible foreign body. Possibility of subglottic foreign body causing complete airway obstruction was kept in mind. Child was intubated with intention to secure airway as well push the subglottic foreign body in order to relieve obstruction. Sodabicarbonate followed by saline used intra tracheally and suctioning done showed a green mucoid aspirate resembling the colour of fruit gel chocolate which mother guessed as may be cause of choking. After 10 minutes of bag and tube ventilation child completely recovered. A chest X ray taken immediately after recovery was completely normal. Routine investigations done were normal. The child was discharged after 48 hours following recovery.

CASE 2

6 year old male child came to pediatric OPD with history of biphasic stridor since seven days. He had history of choking spell seven days back noticed by grandmother. The child on examination had mild tacypnea , bilaterally equal air entry and biphasic stridor. The child was otherwise normal, no history of change in voice, no respiratory distress or cough noted. Child was maintaining oxygen saturation in room air. All routine investigations were normal. X-ray of neck lateral view taken showed a subglottic narrowing at C6-C7 region (Fig 1-2). An emergency rigid bronchoscopy done revealed an areca nut in subglottic region causing partial obstruction of airway. Areca nut was removed enmasse. Intravenous hydrocortisone was given prior to bronchoscopy to prevent laryngeal edema. Stridor disappeared. Child was discharged after 48 hours post bronchoscopy

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Figure 1: X-ray neck lateral view - Subglottic opacity at level of C6-C7

Figure 2: Areca nut removed by Rigid bronchoscopy

DISCUSSION

Laryngeal and tracheal foreign bodies account for <10% of aspirated foreign bodies. The incidence of foreign body aspiration has 2 peaks first peak is in toddler age group and second at 10 year to 12 years.[1] 90% of aspirated foreign bodies are food and toys among which 80% are nuts and vegetables. Only 25% cases present within 24 hours and 75% cases within 1 week following aspiration.[2] Infantile aspirations account for < 9% of all foreign body aspirations.[3] A laryngeal foreign body completely obstructing airway is fatal. A foreign body to enter larynx will be a possibility only when normal reflex action is interfered by sudden inspiratory efforts while eating , fright, play and laughter.[4] Most complications in foreign body aspiration is due to diagnostic delay >24 hours.67% cases experience one or more complications due to foreign body aspiration.[5]Subglottic region is too small, since foreign body does not pass subglottic region it completely obstructs trachea causes hypoxemia, bradycardia and cardiac arrest resulting before catastrophic event can occur.[6] In our first case aspiration has presented in early age group, as against the median age of 1 to 3 years.[1] Child was brought to hospital with cardio respiratory arrest. There was not enough time to take expert support for inmmediate endoscopy or tracheostomy. With history and fatal clinical presentation diagnosis of complete subglottic obstruction was made and child was intubated during which the foreign body pushed further to clear the airway. The foreign body aspirated by this child was a fruit gel chocolate which easily gets dissolved. Immediate use of soda bicarbonate and saline intra tracheally to dissolve gel chocolate cleared the airway. Tracheal aspirate matching the colour of fruit gel chocolate brought by mother confirmed aspiration as cause for fatal event. This is one rare aspiration case reported due to fruit gel chocolate in Indian set up. Reports suggest performing tracheostomy for laryngeal foreign body, but it is not necessarily an absolute indication for tracheostomy as seen in our patient. The second case was partial subglottic obstruction caused by areca nut. Subglottic foreign bodies are immediately symptomatic, usually complete, as described early by Fraga J C *et al*, complete obstruction of trachea causes hypoxemia bradycardia and catastrophic event can occur. Only 8% of all subglottic foreign body aspirations present with stridor alone as presenting complaint.[1] In our case initial choking event for short duration was followed by biphasic stridor as only presenting symptom. Child was otherwise normal. He had time lapse of seven days past aspiration when he came to hospital which was rare in subglottic aspirations which present very early usually immediately after aspiration.

CONCLUSION

Subglottic foreign body aspirations have varied presentations, catastrophic event to only stridor or aphonia. Partial obstructions though rare but are known and may have longer time lapse between aspiration and diagnosis. Performing tracheostomy for laryngeal foreign body is not necessarily an absolute indication.

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