

Unusual Aero Digestive Foreign Bodies: A Study Revealing the Challenges And Management In Pediatric Patients

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Abstract

Introduction: Aero-digestive foreign bodies are prevalent in our part of the country. They impose great challenge for a clinician due to compromised airway and are particularly dangerous when they occur in young children. Most common foreign bodies in this part of country are areca nut, ground nut and Bengal gram. Apart from these usual foreign bodies, we encountered some unique foreign bodies, the diagnosis and management of which, was difficult due to varied and overlapping clinical presentations. So purpose of this study was to document the variety of rare foreign bodies and their clinical presentations.

Methods and methodology: It was a cross-sectional study on patients presented with history and symptoms of aero digestive foreign bodies in our hospital from July 2016 to April 2019.

Results: We were able to witness many unusual presentations of rare foreign bodies. Operative technique and management had to be modified according to type of foreign body in order for its safe removal.

Keywords: aero digestive tract. foreign body, high index of suspicion

Introduction

The study of Foreign Bodies in the Air and Food passage is a subject of great clinical interest. However, the importance of Foreign Bodies in Air and Food passage was not particularly noted until the early part of 19th century. This is one of the frequent complications that an otorhinolaryngologist frequently meets in his professional life. Many times they can prove fatal to the patient¹. For clinical purposes Foreign Bodies are grouped into those that require immediate removal and those that can wait for ideal operative procedure. Foreign Bodies are relatively common in children, but their presence in adults can by no means be ignored. In this study an attempt is made to study the problems caused by the Foreign Bodies in aero digestive tract, difficulties encountered during removal, and complications following removal^{2,3}

Aim To review and document unusual cases of aero digestive foreign bodies encountered and managed in our hospital from July 2018 to April 2019.

Methods and methodology

It was a cross-sectional study on patients presented with aero digestive foreign bodies in our hospital from July 2018 to April 2019. All patients of paediatric age

group, who presented with a complaint or suspicion of an inhaled or ingested foreign bodies, were included in the study. Data was recorded for patient's age, sex, date of inhalation of Foreign Body, date of diagnosis, any significant symptoms or signs, diagnostic radiographic maneuvers employed and radiographic findings. Additional information recorded included prior medical evaluation, procedures undertaken to remove the foreign body, intra operative findings and complications. The type of object and exact location of foreign body was also identified. Patients were followed up on 1st week, 2nd week and 1st month for any complication.

Case 1

4 year male patient presented with 1 day history of ingestion of a toy and vomiting. X-Ray neck soft tissue lateral view and PA view was done that revealed a radiopaque foreign body (METALLIC SPINNING TOP) at level of cricopharynx (*Fig. 1*).

Surgical challenge in this case was to safely remove this pointed tip object without tearing the hypopharyngeal wall. The sharp pointed tip was projecting towards laryngeal inlet. With the help of toothed long forceps firstly the pointed tip was rotated upwards and the spinning top was removed gently without traumatising the hypopharyngeal mucosa (*Fig. 1*).

Case 2

8 month old female child presented with one day history of absolute dysphagia. X-ray chest was done that revealed a radiopaque foreign body at cricopharynx (*Fig. 2*). Great surgical challenge was there in this case because its sharp pointed metallic part was piercing the hypopharyngeal mucosa and any inadvertent attempt could cause an esophageal perforation in the small child.

So help of wire cutter was taken and the pointed end was first cut through its base and then this ear ring was safely removed through hypopharyngoscopy (*Fig. 2*).

Case 3

2 yr old female pt presented with cough, fever, difficulty in breathing for one day duration. On examination bilateral lungs air entry was equal. X-ray chest PA view showed a radiopaque foreign body in left bronchus (*Fig. 3*). Bronchoscopy was done and during the procedure a metallic bead was seen in secondary bronchus. Due to its shape and surface it was extremely difficult to mount a grip over the bead. In order to remove it, a long single toothed forcep was used to firstly rotate the bead in such a way that its hollow part faces upwards. Then grip was taken from its shallow area and bead was removed using the same single toothed force (*Fig. 3*).

Case 4

A 5 year old female patient presented with history of ingestion of sapota seed followed by cough and breathing difficulty. X-ray chest PA view showed hyperinflation of one sided lung. So rigid bronchoscopy was done. Sapota seed was visualised in right main bronchus but it was technically difficult to remove it due to its slippery nature. Second main problem in this foreign body is its tendency to slip at subglottis level even if pulled out from bronchus. To overcome these challenges, optical long forcep with serrated jaws was used to obtain a firm grip and it could be removed successfully (*Fig. 4*).

Case 5

A 4 year male patient presented with history of cough and fever for last one month. He had history of ingestion of cap of pen. Chest x-ray showed mild hyperinflation of right sided lung field. Bronchoscopy

was done to remove this pen cap. This foreign body is very rare in bronchus and particularly very difficult to remove due to its shape. It tends to lodge in most suitable diameter bronchus and it gets snugly fitted into the airway. Optical long forceps with serrated jaws was used to remove this foreign body from right bronchus. (Fig.5).

Results

Maximum number of cases was seen in age group of 0-5 years. There was difference in sex distribution; female to male ratio was 3:2. Among various types of Foreign Bodies 3 were found in bronchus and 2 at cricopharynx. These foreign bodies were very difficult to remove.

Discussion Foreign bodies in aerodigestive tract are one of the real emergencies having considerable mortality and morbidity⁴. High degree of suspicion and skill are required for their management⁵⁻⁸. Metallic long and sharp foreign bodies can get stuck into oropharynx and hypopharynx through oral route and can cause troublesome complications. Major difficulty is to identify the site and approach for exploration.

Foreign body Aspiration[FBA] is a frequently encountered and life-threatening condition in young children. Early complications are asphyxia, cardiac arrest, obstructive dyspnea, laryngeal/ glottis edema and loss of consciousness, which can lead to later complications like secondary infection and obstructive bronchiectasis⁹. In cases of nuts or vegetables aspiration, the parents may give a history of such consumption, which increases the suspicion of FBA. But in some cases, the parents are generally unaware of such an intake by their kids, thus reducing the chances of being diagnosed as foreign body aspiration. So we found unusual foreign bodies in respiratory tract of

children and recommended both therapeutic and diagnostic bronchoscopy even in the absence of positive history for foreign body ingestion. So a high index of suspicion is required by Otorhinolaryngologists and pediatricians for diagnosing in children. Foreign body aspiration should always be considered as a possibility in both an acute or chronic respiratory case, even in the absence of any history of foreign body intake. Bronchoscopic evaluation of bronchial tree is both diagnostic and therapeutic, and should be done with the slightest doubt of foreign body aspiration. Proper instruments and all possible types of forceps for different types of foreign bodies should be available before attempting the foreign body removal.

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Legends Figure

Figures of Unusual Foreign Bodies Final Series

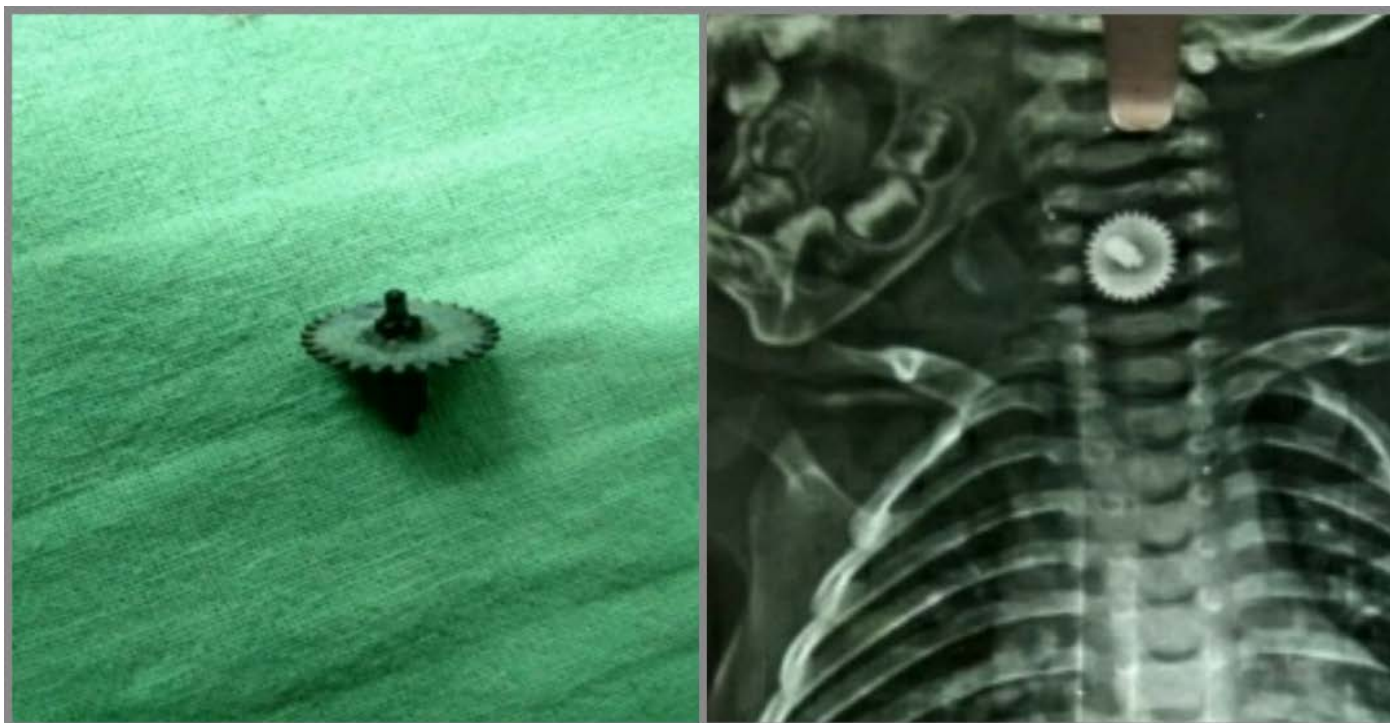


Figure: 1 X-ray chest PA view showing spinning top and same after its removal.



Figure: 2 Chest x-ray PA view showing metallic foreign body at level of the level of cricopharynx and after removal.



Figure: 3 Chest Xray PA view and lateral view showing metallic bead in left bronchus and bead after its removal.



Figure: 4 Seed of sapota after removal from main right bronchus.

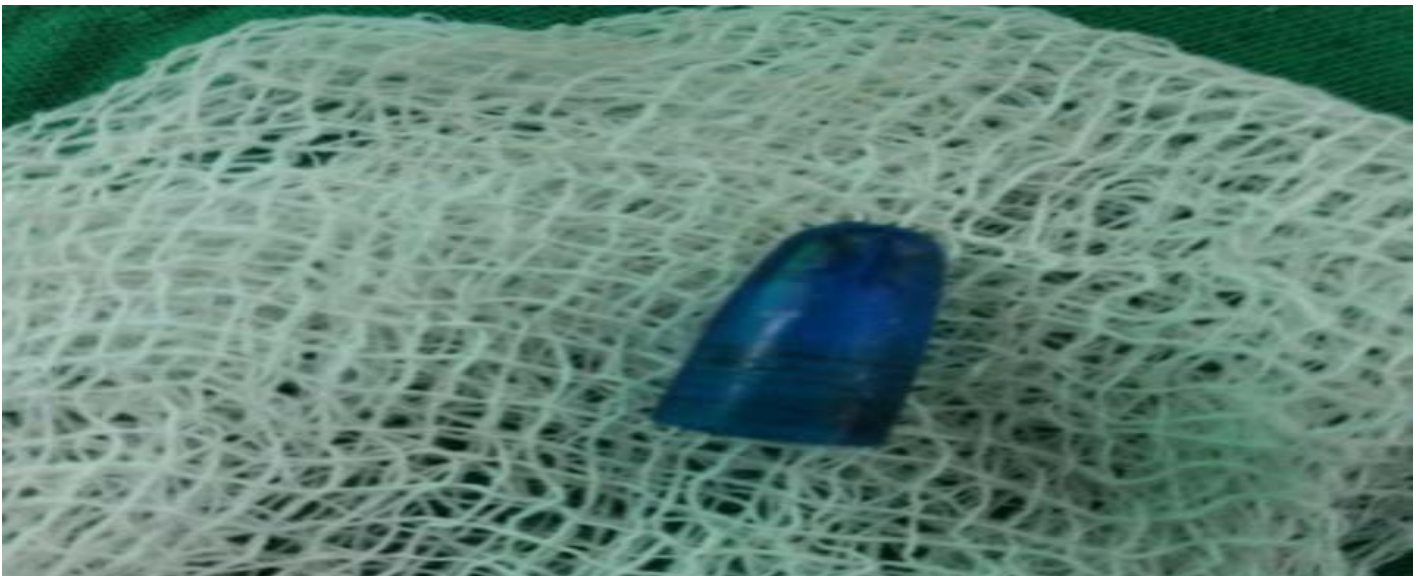


Figure: 5 Cap of pen after its removal from right main bronchus.