Airway Foreign Bodies

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Objectives: The objective of this study is to review the management of foreign body inhalation, the type of foreign bodies commonly inhaled, the site of impaction and the complications related with it. **Design of Study**: Retrospective clinical study. **Setting:** Mayo Hospital Lahore, ENT Unit I. **Period:** April 1999 to September 2000 (18 months). **Materials and methods:** 32 consecutive patients with suspected foreign body inhalation were included in this study. A total of 35 bronchoscopies were carried out in these 32 patients. The patient data was collected on the basis of management complications and follow-up. **Results:** Total number of cases was 32 including 24 males (75%) and 8 females (25%). Age range of the patients was 6 months to 30 years (average 6.65 years). Most commonly inhaled foreign bodies were plastic whistles in 19 cases (66%). The most common site of impaction was right main bronchus (62%) followed by left main bronchus (24%). Complications occurred in 2 patients (7%). **Conclusions:** Foreign body in the airway is a common problem affecting young children mainly. The most common foreign body inhaled is a whistle. It is a preventable problem and educating the parents, teachers and other childcare providers in this regard is highly desirable.
Key Words: Foreign Bodies, Airway, Bronchoscopy

Foreign body in the airway is one of the most serious E.N.T emergencies with significant morbidity and mortality. Children between the ages of 1-3 years are most susceptible to the inhalation of foreign bodies [1,2,3]. All types of foreign bodies (both organic and inorganic) have been removed from the airway. The most common foreign bodies in world literature are organic in nature[4].

Common clinical manifestations are coughing, choking and wheezing[5] and decreased air entry on the side of foreign body impaction. The most frequent site of impaction is right main bronchus[6].

The removal of airway foreign body can be challenging even for the most experienced endoscopist[7]. Complications of procedure are less if done by experienced hands and complication rate is about 6%[8]. The objective of this study is to review the management of foreign body in the airway, the types of foreign bodies commonly inhaled, the site of impaction and the complications related with the procedure.

Materials and Methods:
The study was carried in Mayo Hospital, ENT Unit 1 from April 1999 to September 2000. 32 consecutive patients of suspected foreign body bronchus were admitted through the Emergency or the Out-patient Departments. A total of 35 bronchoscopies were carried out in these patients using rigid bronchoscopes. The procedures were done under general anesthesia. Those patients undergoing elective bronchoscopies were given steroids and antibiotics for at least 24 hours prior to the procedure. The data was compiled on the basis of management and follow-up.

Results:
Out of the total of 32 cases undergoing bronchoscopy, there were 24 males (75%) and 8 females (25%). The age range was 6 months to 30 years (average 6.65 years).

A total of 35 bronchoscopies were carried out. One patient underwent 3 procedures and another patient underwent 2 procedures for removal of same foreign body. Foreign bodies were discovered and successfully removed in 29 patients (91%) while no foreign bodies were present in 3 patients (9%).

There were 25 inorganic foreign bodies (86%) and only 4 organic foreign bodies (16%). Common foreign bodies were whistles (19 cases-65.4%), Betel Nuts (2 cases-7%), nails and screws (2 cases-7%), small plastic pieces of ball pens (2 cases-7%), seed (1 case-3.4%), pop corn (1 case-3.4%), a piece of metallic tracheostomy tube (1 case-3.4%) and a rubber cap of a small bottle (1 case-3.4%). Table 1.

Table 1: Types of Foreign Bodies

Inorganic			Organic		
Type	No.	%age	Type	No.	%age
Plastic whistle	19	65.4	Betel Nuts	2	7
Plastic pieces	2	7	Seeds	1	3.4
Nails & Screws	2	7	Pop corn	1	3.4
Piece of metallic tracheostomy tube	1	3.4			
Rubber cap	1	3.4			
Total	25	86.2		4	13.8

The site of impaction was right main bronchus in 18 patients (62%) and left main bronchus in 7 patients (24%), both left and right main bronchi in 2 cases (7%), sub-glottis in one patient (3.5%) and inter-arytenoid area in one patient (3.5%).

Complications occurred in 2 cases only (7%). Stridor occurred post-operatively in a patient who had a betel nut impacted in subglottic region. One patient developed fever due to atelectasis post-operatively but this resolved in 24 hours.

Discussion:

Foreign body aspiration is not an infrequent E.N.T emergency. Almost 90% of aspirations occur in children less than 3 years of age[2]. Average age in our patients was 6.65 years.

The diagnosis of foreign body aspiration is often difficult because the actual event of aspiration is frequently not witnessed in children. In addition the signs and symptoms of pediatric foreign body are non-specific, which may delay diagnosis and this in turn increases the risk of complications[9]. Foreign body should therefore be strongly suspected in susceptible patient population who present with a suggestive history even when no physical or radiographic evidence can be seen[10].

Food items especially peanuts are common items aspirated by infants and toddlers whereas older children are more likely to aspirate non-food items such as whistles, pen caps, pins and paper clips[11]. This finding was also confirmed in our study as the average age of our patients was higher and we had more inorganic foreign bodies.

We had a large number of patients (19) who had inhaled a peculiar type of whistle, which produces sound when the air is sucked in. These whistles come as free gifts in some proprietary potato chips packets.

The most common site of impaction is right main bronchus[7]. In our study right main bronchus was the most common site of impaction (62%) as well.

Complications are few if the procedure is carried out carefully. The two complications that we had were related to the foreign bodies and not to the procedure.

Conclusion:

Foreign body in the airway is one of the most serious ENT Emergencies. The most common foreign body inhaled is a whistle in our study. It is a preventable problem and educating the parents, teachers and other childcare providers in this regard is highly desirable.

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