ANALYSIS OF TRACHEOBRONCHIAL FOREIGN BODIES WITH RESPECT TO SEX, AGE, TYPE AND PRESENTATION

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Background: Foreign body inhalation is one of the life threatening emergencies. It may happen at any age, however, most of these accidents occur in children especially below the age of five. **Methods:** This prospective study was done at Department of Otolaryngology, Head and Neck Surgery, Ayub Teaching Hospital, Abbottabad, from 1 January 2003 to 30 June 2005. A total of Eighty one patients, referred from the casualty and Paediatric unit with suspicion of tracheobronchial foreign body were included in the study. **Results:** Eighty one were studied. Fifty (61.7%) were male and thirty one (38.3%) were female. Sixty three (77.8%) were below five years, thirteen (16%) were between five and fifteen years and five (6.2%) were above fifteen years. Sixty seven patients (82.7%), presented mainly with chocking, while fifty nine patients (72.8%) had stridor and forty five patients (55.6%) had cough at initial presentation. Seventy two (88.9%) patients had decreased air entry and forty two (51.9%) had wheeze on auscultation, whereas cyanosis was noticed in five (6.2%) patients. Peanut was the commonest foreign bdy, retrieved in forty five patients (55.6%). Other foreign bodies were whistle (18.5%), maize seed (13.6%), bean seed (6.2 %), nuts (2.5%), sewing needle with thread, dice and denture (1.2%) each. **Conclusions:** Foreign body inhalation is more common in male patients, mostly below five years of age. Chocking is the commonest symptom and decreased air entry on auscultation is the typical examination finding. Peanut has been found to be the commonest type of foreign body.

Key words: Tracheobronchial, Foreign body, Peanut.

INTRODUCTION

Tracheobronchial foreign body is one of the most serious life threatening emergency. In USA, it is the fourth leading cause of accidental deaths in children under five years of age, accounting for about 8% of such deaths, while 90% of patients are less than four years and the maximum prevalence is between one and two years[1,2] . Children in this age group are particularly at risk due to getting more independent as they are growing, not being observed as frequently while feeding, being more curious and active and because of their indigenous nature of exploring the objects in their mouth. Typically, there is history of child playing around and a sudden episode of choking and respiratory distress. The episode may be accompanied with cyanosis as well. Usually the foreign body ends up in one of the major bronchi and breathing stabilizes somewhat after the initial threat. Adults fall victim sheer out of negligence, playing around with the foreign body, usually common pin or a stable or needle, in the mouth, especially while working. Foreign body inhalation may occur in elderly, particularly when they have primary neurological disorder and decreased gag reflexes due to Parkinsonism, senile dementia, strokes, seizures and alcohol intake. Other possible situations are surgical procedures under sedation, particularly dental procedures.

MATERIAL AND METHODS

All the patients reporting to ENT department with history or suspicion of foreign body inhalation, either from the casualty department or referred from the pediatric department, were registered for the study. All the patients were explored through rigid bronchoscopy under general anaesthesia and orotracheal intubation. Only those patients were finally included for the analysis where a foreign body was retrieved from the tracheobronchial airway.

RESULTS

Foreign body inhalation was found to be more common in males with a male to female ratio of 1.6/1 (Table 1)

Most of the patients (77.8%) were below 05 years. 16% were between five and fifteen years and only 6% patients were above 15 years of age. The youngest child was of 16 months old. (Table 2)

The commonest symptom was choking, noticed in 82.7% patients followed by stridor (72.8%) and cough (55.6%) (Table 3). Clinical examination revealed decreased air entry on chest auscultation, as the commonest sign, found in 88.9% patients, followed by wheeze in 49.4% whereas cyanosis was noticed in 6.2% of the patients (Table 4)

Peanut happened to be the most retrieved foreign body in 55.6% patients, followed by whistle (17.3%), maize seed (13.6%), bean seed (6.2%), nut

(2.5%), sewing needle with thread, dice and denture (1.2% each). (Table 5).

Table 1. Sex of the patients (n =81)

Sex	Number	%
Male	50	61.7
Female	31	38.3

Table 2. Age of the patients (n = 81)

Age	Number	%
= 05 years	63	77.8
05 to 15 years	13	16
> 15 years	05	6.2

Table 3. Symptoms of the patients (n = 81)

Symptoms	Number	%
Choking	67	82.7
Stridor	59	72.8
Cough	45	55.6

Table 4. Signs of the patients

(n =81)

Signs	Number	%
Decrease air entry	72	88.9
Wheeze	42	51.9
Cyanosis	05	6.2

Table 5. Types of foreign body (n =81)

Type	Number	%
Peanut	45	55.6
Whistle	15	17.3
Maize seed	11	13.6
Bean seed	05	6.2
Nuts	02	3.7
Sewing needle with thread	01	1.2
Dice (Ludo goti)	01	1.2
Denture	01	1.2

DISCUSSION

Inhalation of foreign body is a serious and life threatening emergency. An inhaled foreign body can get lodged at any point from the supraglottis to the terminal bronchioles. The two main factors that determine the outcome of an inhaled foreign body are its size and site of impaction.

Thus, large foreign bodies which cause complete obstruction at any point from supraglottis to the carina can result in death while partial obstruction of the airway or impaction beyond the carina causes less severe signs and symptoms. The prevalence of foreign body inhalation in our study was more common in males. That finding correlates well with another study conducted in the same population[3]. Swanson KL and Tariq P have reported similar observation[4,5].

Majority of our patients were below the age of five years. Swanson KL has reported that most of their patients were below four years age[4].

Higher prevalence in paediatric population is mainly on account of curiosity on part of children and that makes them put anything they can have hands on, into ear, nose & throat. Secondly parents are to be blamed for leaving the child playing, usually with small toys etc, on his/her own, as the mother has to look after the household. Thirdly, there is no check or control over the type and quality of toys sold in the market. Usually there is temptation in the form of small toys packed in food packets to promote their sale, e.g. whistle etc. Persistent respiratory embarrassment would dictate to seek medical attention. However, significant number of cases settle down somewhat as the foreign body settles in the lower respiratory passages. These are the children who are reported to have repeated lower respiratory tract infection and repeated antibiotic courses. That is the reason, children with recurrent lower respiratory tract infection for no other genuine reason, should have bronchoscopy to rule out an inhaled foreign body.

In adults, foreign body inhalation can occur, though rarely. Mostly, it happens on account of negligence while at work and holding something in the mouth.

In elderly, a number of factors increase the risk of foreign body inhalation, such as primary neurological disorders like senile dementia, seizures etc, medication e.g. narcotics, barbiturates or benzodiazepines.

Removal entails bronchoscopy. Mostly, rigid bronchoscopy is employed, but in patients not fit for general anaesthesia or failed attempt due to difficult access, flexible bronchoscopy is an option.

We in our study had three (6 %) patients who were above fifteen years of age. These three patients had no such risk factors and they were otherwise perfectly healthy.

In this study, the main presenting features were choking (82.7%), stridor (72.8%) and cough (55.6%). Tariq P observed that common presenting features in decreasing order of frequency were sudden onset of respiratory distress, cough and choking[5]. Yeh LC observed cough to be the commonest manifestation followed by dyspnoea[6] Whereas, Zerella JT concluded that choking is the most common symptom of foreign body inhalation.[7] Similarly cough and choking were the main presenting symptoms observed in almost all the patients studied by Black RE [8].

This study revealed that the most prevalent clinical finding was decreased air entry (88.9%), followed by wheeze (49.9%) and cyanosis (6.2%).

Similar findings have been reported by others as well with slight variation in the frequency of various signs.[5,6,8,9]

As regards the type of foreign body, we encountered peanut in more than half the patients (55.6%), followed by whistle (17.3%), maize seed (3.6%), bean seed (6.2%), nut (2.5%), sewing needle with thread, dice and denture (1.2% each) others have also reported peanut to be the commonest finding[6,8,10]. However, Burton EM reported that peanut accounted for only 33% of the inhaled foreign bodies in his study[9]. Similarly, whistle was the commonest inhaled foreign body in the study by Farooqi T, accounting for about 57.7% cases[11]. Khan N has also reported portions of nuts and plastic objects, more common than other foreign bodies[12]. Schmidt H concluded that 87% of the inhaled foreign bodies were organic in nature[13].

CONCLUSION

As majority of patients are young children, it is highly desirable that they are kept under supervision at all times, especially while taking food and playing.

Mass education through media is mandatory to prevent such accidents. Same can be accomplished through lectures in the mosques and schools in the rural areas, by the health personnel.

Prompt medical attention should be extended in such cases and there need to be high index of suspicion of an inhaled foreign body in children with recurrent lower respiratory infection. That would entail a close working relationship between Physician, Paediatrician and Otolaryngologist.

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