

THE INCIDENCE OF INHALED FOREIGN BODY IN WEST MALAYSIA

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SYNOPSIS

In this paper the incidence of inhaled foreign body in the tracheobronchial tree at the University Hospital Kuala Lumpur, West Malaysia, is reviewed. Children are the usual victims. Food-related substance (peanut) is the most common foreign body. Successful removal of foreign body by bronchoscopy is achieved in the great majority of cases (86%). Prevention can be achieved by educating the parents not to give nuts to children below the age of 3 years.

INTRODUCTION

Inhalation of foreign body is potentially a dangerous condition and prompt diagnosis is essential to avoid mortality and morbidity. High index of suspicion, a proper history, careful physical examination of the chest and routine X-ray of the chest will lead to prompt diagnosis.

This paper reports our experience of inhaled foreign bodies in the tracheobronchial tree at the University Hospital, Kuala Lumpur, West Malaysia. It describes the nature of foreign bodies, their clinical presentation, management and associated complications.

MATERIAL

Twenty-two children were admitted for removal of inhaled foreign body in the University Hospital between 1970 and 1980. There were 16 boys and 6 girls. All but 2 children belonged to low income group families. Their age ranged from 7 months to 5 years. Seventeen children (77%) were between 12 and 24 months old. Nineteen children (86.4%) presented with a definite history of an inhaled foreign body. Three children did not give a history of foreign body aspiration. Only 9 children (41%) were brought for immediate treatment and 10 children were brought late. The symptomless interval ranged from 2 days to 2 weeks. Eighteen children (81.8%) presented with stridor and dyspnoea (Table 1). Chest signs were observed in 14 children (63.6%). Chest X-rays showed abnormality in only 9 children (45.5%); the rest had normal chest X-rays.

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TABLE 1

SYMPTOMS	
Positive history	19 (86.4%)
No history	3 (13.6%)
Stridor	11
Dyspnoea	10
Wheeze	5
Cough	5
SIGNS	
Normal chest	8
Abnormal chest	14
Rhonchi	8
Diminished air-entry	6

MANAGEMENT

All 22 children underwent bronchoscopy and foreign bodies were removed from 19 children (86%). One child required thoracotomy for the removal of peanut in the right bronchus. In one child foreign body was not found and another child coughed out a foreign body after a tracheostomy. Nine foreign bodies were removed from the right main bronchus; 8 from the trachea and 2 from the left bronchus. The commonest foreign body was a peanut (10 cases), followed by watermelon seed (4 cases). Post-operative complications occurred in 8 cases (Table 2). There was 1 death due to bronchopneumonia.

TABLE 2

POSTOPERATIVE COMPLICATIONS	
Subglottic oedema	3
Bronchopneumonia (1 death)	2
Pneumothorax	1
Cardiac arrest	1
Respiratory failure	1

Three children were admitted without a history of an inhaled foreign body. One child presented with features of bronchopneumonia which an intensive course of antibiotics did not resolve. Prompt diagnostic bronchoscopy led to the removal of a disintegrating vegetable foreign body and complete recovery. In the second child presented with pneumonia, which did not resolve after a course of antibiotic therapy, the history was reviewed and the parents recollected aspiration of a foreign body. The removal of a fishbone was followed by complete recovery. The third child presented with sudden onset of stridor and dyspnoea was treated initially as a case of chest infection. Quick diagnostic bronchoscopy revealed a foreign body. These cases illustrate the importance of having a high index of suspicion of inhaled foreign body and the usefulness of diagnostic bronchoscopy in unresolved chest infection.

DISCUSSION

All patients were under the age of 5 years. There is a peak incidence observed in the age group between 12 and 24 months (74%) at which age, a child's ability to move around increases but he has no molars to chew nutty substances. This series substantiates Elhassani's (1) observation that the incidence of an inhaled foreign body is much more common in the poor than in the well-to-do.

The boys being more active and inquisitive, it is no surprise that male children dominate all the reported series. In half the children treatment was delayed and the important factor for delay is the latent period before the onset of symptoms. The symptomless interval depends upon whether the foreign body is vegetable or non-vegetable substance and it causes obstruction or not. A vegetable foreign body produces severe mucosal reaction within a few hours causing vegetal bronchitis. Non-vegetable foreign body produces slight mucosal reaction with few symptoms. An obstructive foreign body produces severe symptoms immediately after aspiration.

In this series the most common presenting symptoms were stridor and dyspnoea. This is in contrast to Pyman's series (2) in which cough and wheezy breathing were the common symptoms. Haemoptysis in a child, in the absence of bronchiectasis and blood dyscrasia, is almost always due to an inhaled foreign body (2). The most common clinical signs are rhonchi and diminished air entry. X-ray of the chest must be taken in all cases and the common radiological features are collapse, obstructive emphysema or consolidation. It must be remembered that chest X-ray will be normal in about one third of the cases.

An inhaled foreign body should be removed without delay by bronchoscopy under general anaesthesia. No other methods are worthy of a moment's consideration (3). Rigid bronchoscopy is found more suitable for the removal of foreign body. It is essential to select a suitable sized bronchoscopy and proper grasping forceps for the removal of foreign bodies. Prolonged bronchoscopy should be avoided since it leads to subglottic oedema with respiratory distress. Every child should be observed carefully for 24 hours after bronchoscopy.

Complications occurred in 8 our patients. Three children developed subglottic oedema after prolonged bronchoscopy, which responded to cortisone therapy. Three children had serious complications (cardiac arrest, pneumothorax and respiratory failure) when bronchoscopy was performed by inexperienced physicians in District Hospital. All three were successfully resuscitated and transferred to University Hospital, where removal of foreign bodies was accomplished by an experienced surgeon. Two of our patients developed bronchopneumonia, one of them died in spite of intensive antibiotic therapy.

CONCLUSION

When a child presents with an initial episode of choking, gagging and coughing while eating and then develops wheezy breathing and dyspnoea, it is almost certain that the child has aspirated a foreign body. Bronchoscopy should be carried out without delay when a child presents with a definite history of inhaled foreign body or with sudden onset of wheeze, stridor and dyspnoea. A diagnostic bronchoscopy is necessary for a child presenting with a history of chronic or unresolved chest infection to rule out a forgotten foreign body.

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