

A Clinical Study on Foreign Bodies in Upper Aero-Digestive Tract

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Abstract

Background: Aim of current study was to identify the patients with foreign-body ingestion and aspiration, develop a suitable algorithm for their management and study various complications following their removal.

Methods: The present study was carried out on hundred patients diagnosed as case of foreign-body in upper aero-digestive tract on the basis of history, examination and investigations.

Results: Out of hundred patients of foreign body ingestion and aspiration in my study, 90 were children of age less than 10 years. Mean age of patients was 9.32 ± 6.39 Yrs. In 84.00% cases type of foreign body was coin. In the trachea-bronchial tree, ten emergency bronchoscopies were done with successful removal of foreign bodies in 100.00% cases.

Conclusion: Early detection by meticulous history, imaging modality & prompt management remains basis for favourable outcome and prevents fatal complications.

Keywords: Aero-digestive, Cricopharynx, Oesophagoscopy, Tracheo-bronchial

Introduction

The pediatric population represents a significant proportion of referrals for the thoracic surgeon. Children present challenging diagnostic and therapeutic problems which often require specialized training and equipment. The aspiration or ingestion of a FB often illustrates this point. A chart review was undertaken at our department of any child with a diagnosis of tracheobronchial or esophageal FB, who underwent endoscopy. From this data, several points regarding epidemiology, diagnosis, subsequent management and findings were elicited.¹

The commonly encountered foreign bodies vary geographically. Coin ingestion seems to be the commonest worldwide problem.²

Other common non-food items are school stationery, balloons, and toys. Pharyngeal fish bones are well reported from countries where fish forms a part of the staple diet. Over the years, there has been a rise in the incidence of disk-type battery ingestion in the paediatric population, which can lead to serious consequences. Seeds and nuts are frequent causes of trachea-bronchial obstruction worldwide. Accidental aspiration of peanuts is commonly responsible for airway obstruction in children in Southeast Asia and Africa, and kola nuts, which are traditionally used in Africa, may be inhaled accidentally. It is difficult to eradicate the problem, as children, by nature, are curious and exploratory. It is important to develop a comprehensive approach

to the early recognition and timely management of aspirated and ingested foreign bodies, as complications from delayed diagnosis can have significant health implications. Serious complications from aspirated foreign bodies such as severe airway obstruction and death, tend to occur in infants and younger children due to the small size of their airways.³⁻⁴

Material and Methods

The present study is a prospective study, conducted on hundred patients diagnosed as case of foreign body in upper airway or digestive tract on the basis of detailed history, physical examination and necessary investigations. Out of hundred patients, ninety belonged to foreign

body ingestion in upper oesophagus while the rest ten were cases of foreign body aspiration in trachea-bronchial tree.

All patients with a provisional diagnosis of foreign body ingestion underwent X-ray neck & upper chest both antero-posterior and lateral views.

Foreign body removal was done by forceps using rigid endoscopy and patients were observed post-operatively for complications and relief.

Results

Out of hundred patients of foreign body ingestion and aspiration in my study, 90 were children of age less than 10 years. Mean age of patients was 9.32 ± 6.39 Yrs. In 84.00% cases type of foreign body was coin.

Table 1: General profile of patients

Mean age	9.32±6.39 Yrs	
Male : Female	64 : 36	
Digestive tract	90(90.00%)	
Airway tract	10(10.00%)	
Type of foreign body	Coin	84(84.00%)
	Groundnuts	3(3.00%)
	Pin	2(2.00%)
	Others	11(11.00%)

Table 2: Radiological evidence of aero-digestive foreign bodies

Radio-opaque foreign bodies	90(90.00%)
Atelectasis	3(3.00%)
Obstructive emphysema	2(2.00%)
Pneumonia	2(2.00%)
Normal	3(3.00%)

Coins were the most common radio-opaque foreign body seen in the upper digestive tract.

Table 3: Operative procedures performed and their outcome

Procedure	No of cases	Complication
Oesophagoscopy	90	2
Bronchoscopy	10	1
Total	100	3

In the trachea-bronchial tree, ten emergency bronchoscopies were done with successful removal of foreign bodies in 100.00% cases.

Discussion

Foreign bodies in upper aero-digestive tract are relatively common particularly in children, but their presence in adults can by no means be ignored. The tendency of the small children is to put whatever comes to their grasp into their mouth. Most of these foreign bodies are due to carelessness of the children, their parents and people staying with them. This includes improper preparation of food, putting inedible objects in the mouth, hasty eating and drinking habits, beetle nut chewing, permitting children to play while eating, talking while food is in the mouth, giving food like ground nuts to children who are yet to get molar teeth to chew them, improper supervision of small children playing, leaving small objects in reach of babies and allowing them to play with buttons, small toys, coins, beads, etc.

Foreign body removal from throat is difficult and is associated with large number of complications in an inexperienced hand. Most common of them are, injury to surrounding structures, perforations, injury to vocal cords and mediastinitis.

Our review confirmed the earlier findings of Banerjee et al.⁴ and Rothman et al.⁵ that the highest incidences of foreign body aspiration and ingestion were in children below three years. Since these children lack molar teeth, edibles placed in the mouth are usually broken up but not chewed which they easily ingest aspirate, especially if the child is running, playing, or talking. The natural propensity of attempting to gain knowledge by putting things into mouth and the tendency of parents to thump or spank the children for acts of naughtiness at feeding time were also contributory factors. This age group may also be involved due to immature co-ordination in the swallowing mechanism. In the

study of Steven C, 6 the average age of patients with foreign body aero-digestive tract was 3 years.

Conclusion

Patients with oesophageal foreign bodies are asymptomatic or had transient symptoms at the time of the ingestion, such as a sensation of something stuck in the chest, refusal of feeds or dysphagia, drooling, The initial evaluation of a patient with suspected foreign body ingestion should include plane radiographs (anteroposterior and lateral) of the neck, chest, and abdomen. Other imaging modalities or direct advancement to upper endoscopy may be helpful in identifying radiolucent foreign bodies. Urgent and sometimes emergent intervention to remove a foreign body is indicated when the object is sharp and long, or if there are signs of oesophageal obstruction.

Tracheo-bronchial foreign body aspiration is a serious and potentially fatal condition, especially when occurring in a small child. Foreign body aspiration should be strongly suspected in children presenting with a history of choking episode or with persistent or recurrent pulmonary infections. Even in the absence of clinical or radiological evidence, bronchoscopic evaluation in these patients may prove valuable.

Emergency bronchoscopy is warranted in case the patient is in acute respiratory distress, otherwise an elective procedure with adequate preparation along with an efficient anaesthesiologist should be considered.

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