

REMOVAL OF FOREIGN BODIES IN AERODIGESTIVE TRACT

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ABSTRACT

BACKGROUND: Accidental foreign body ingestion is common otolaryngological emergencies. Foreign body ingestion is encountered in both children and adults. Foreign body aspiration is commonly seen in children. Treatment of foreign body is prompt by invasive removal under general anaesthesia for maximum safety and minimal trauma.

A total of 56 patients over 2 years' period were studied. Early rigid oesophagoscopy/flexible bronchoscopy are effective and safe in removal of foreign body to prevent any complications.

OBJECTIVES

To evaluate early diagnosis and removal of foreign body in prevention of complications and to determine a common age group in the incidence of foreign body ingestion/aspiration.

MATERIAL AND METHODS

Patients with history of ingested/aspiration of foreign body between August 2014 to July 2016 are included in this study. A total of 56 cases of aerodigestive tract foreign bodies were treated. Patients with history of ingested/aspiration of foreign body were clinically examined. Routine neck and chest x-ray in both AP and lateral were taken. Rigid oesophagoscopy or bronchoscopy under GA were done on emergency basis in sharp objects and patients in respiratory distress. Oesophagoscopy under GA is performed within 24 hours in cases of blunt foreign bodies.

RESULTS

In our study of 56 cases, foreign bodies were common among children (0-14) years is 76.5%. Adults is 23.5%. No complications were encountered in this study.

CONCLUSION

Based on these observations, we conclude that foreign body ingestion/aspiration are common in children, prompt removal by invasive procedures under general anaesthesia is safe, causes minimal trauma and prevents complications.

KEYWORDS

Foreign Body, Early, Rigid Oesophagoscope, Flexible Bronchoscope.

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INTRODUCTION: Accidental foreign body ingestion are common in children and frequently seen in adults also.^[1] Most common foreign bodies in children are coins, but marbles, button, batteries, safety pins and bottle caps are also reported.^[2-4] In adults, common foreign bodies are bones, dentures and metallic wires. Foreign bodies which have gone beyond the oesophagus will pass uneventfully through intestinal tract in 70-80% cases. Radiological localisation is mandatory^[5] in decision making. Smooth foreign bodies do not pose much threat, but may cause airway obstruction. Rigid endoscopic removal of foreign body is safe and effective, but often requires GA.^[6] Flexible fiberoptic endoscopic removal has gained popularity over past decade.

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MATERIALS AND METHODS: Patients with history of ingested/aspiration of foreign body between August 2014 to July 2016 are included in this study. A total number of 56 cases of aerodigestive tract foreign bodies were treated. Patients with history of ingested/aspiration of foreign body were clinically examined. Inability to swallow saliva was a frequent symptom of foreign body impaction in digestive tract. Pain while swallowing was major symptom in cases of sharp foreign bodies in digestive tract. The symptoms of aspirated foreign body are highly variable depending on the site of impaction, nature of the foreign body and the degree of functional impairment that results.

Some common symptoms of aspiration of foreign body are 1. Pain - Useful localising symptom. Pain if present is usually immediate, moderately severe, well localised and persistent. It occurs most commonly with impacted sharp foreign bodies. There may be no pain with inhaled foreign bodies in the tracheobronchial tree. Dull, substernal aching maybe present with an impacted bolus of meat in the thoracic oesophagus. 2. Cough - Occurs when there is aspiration into larynx or tracheobronchial tree. 3. Haemoptysis and haematemesis - Occurs when there is a laceration or rupture in aerodigestive tract.



Signs of a foreign body are highly variable depending on the localisation. 1. Point tenderness - Elicited by palpation of the oral cavity, larynx, trachea or neck. 2. Respiratory distress - Stridor, indrawing, cyanosis indicate the need for rapid localisation of obstruction and immediate supportive and prompt definitive management. 3. Surgical emphysema - presence of surgical emphysema indicates a complicated foreign body with perforation of aerodigestive tract and a pathway into the fascial spaces of neck or mediastinum.

INVESTIGATIONS: A thorough otolaryngological and head and neck examination are done. Radiological localisation is mandatory in decision making. Direct findings on radiological examination are visualisation of radiopaque foreign bodies. Metal objects are completely radiopaque^{7,8} whereas fish bones are generally radiolucent. Indirect findings on radiographs include loss of normal cervical lordosis due to impacted foreign body resulting in irritation of prevertebral muscles. Calcification of the laryngeal cartilages may result in false positive interpretations of foreign bodies in the soft tissue films. Chest films are useful in showing segmental or lobar collapse. Modified barium swallow (low volume) is useful in outlining the site and extent of obstructing foreign body.^{9,10}

MANAGEMENT: Any airway obstruction is managed on an emergency basis. Anaesthetic laryngoscope and Magill forceps if accessible can be used quickly to clear airway. Foreign bodies in bronchus are removed by bronchoscopy. Tracheostomy can be a lifesaving procedure in upper airway obstruction. Upper digestive tract foreign bodies are generally managed on elective basis by rigid oesophagoscopy.

RESULTS: In children, foreign body was commonly seen (76%) in 1-14 years of age. 73% were seen within 24 hours of ingestion of foreign body. 27% were seen between 24-48 hours [Table 1]. Majority of the coins were impacted at cricopharynx (77%) in 34 cases. Among airway foreign bodies, 7 cases had right bronchus aspiration (58%), 3 cases in left bronchus (25%), 2 were found in trachea (16.5%) [Table 2]. Common foreign bodies seen in children in airway are scarf buttons (6 cases), coconut piece (4 cases) and groundnut (2 cases) [Table 3]. In children, common type of foreign body were coins 30 cases (53.5).

In adults, foreign bodies seen are 13 cases, 23%, [Table 1] of which the most common type of foreign body is mutton bone (61.5%). Other foreign bodies are fish bone 3 cases (23%), dentures 2 cases (15%). There was history of ingestion of foreign body while having food after alcohol consumption. Common sites of foreign body impaction are mutton bone at cricopharynx and oesophagus, fish bones at vallecula and base of the tongue, dentures were found at cricopharynx.

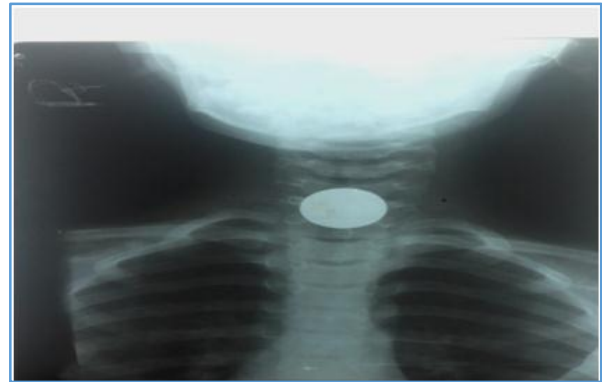


Fig. 1: FB at Cricopharynx

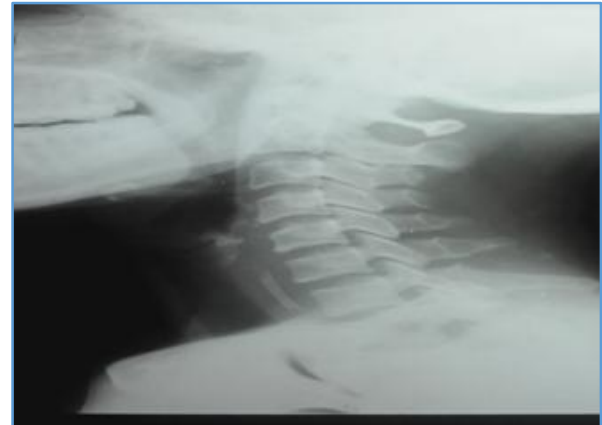


Fig. 2: Mutton Bone at Cricopharynx



Fig. 3: Coin at Cricopharynx Lateral View



Fig. 4: Coin below Cricopharynx

CONCLUSION: In our series, majority of foreign bodies in upper digestive tract were impacted at cricopharynx and in airway at right bronchus. Foreign bodies can cause erosions if present for a long time. In our series, there were no major complications due to foreign bodies. Bronchoscopy and rigid oesophagoscopy are routinely used as an effective tool to remove foreign bodies, respectively. Based on the above observations we conclude that foreign body ingestion/aspiration are common in children, prompt removal by invasive procedures under general anaesthesia is safe, causes minimal trauma and prevents complications.

Age in Years	Airway	Food Passage	Total
0-5	8	22	30
6-10	3	8	11
11-14	1	1	2
15-25	-	2	2
26-35	-	2	2
36-45	-	1	1
45-55	-	6	6
>55	-	2	2
	12	44	56

Table 1: Location of Foreign Body According to Age

Airway		Food Passage	
Right bronchus	7	Cricopharynx	34
Left bronchus	3	Oesophagus 4	4
Trachea	2	Vallecula	4
		Base of the tongue	2
Total	12	Total	44

Table 2: Site of Foreign Body

Airway		Food Passage	
Scarf button	6	Coins	30
Coconut piece	4	Mutton bones	8
Groundnut	2	Fish bone	3
		Teeth dentures	2
		Button	1
Total	12	Total	44

Table 3: Types of Foreign Bodies

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