

## Retrospective Analysis of Foreign Bodies in Aerodigestive Tract in a Tertiary Care Teaching Hospital.

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### ABSTRACT

**Introduction:** Foreign body (FB) lodgment in the aerodigestive tract is a common accident that most otolaryngologists have to deal with, it carries an unmistakable potential for grave consequences, constituting an important cause of morbidity and mortality. Present study was conducted to study demographics, various types of foreign body and incidence of foreign body in the aerodigestive tract.

**Material & Methods:** Retrospective analysis of total 110 cases of suspected foreign body in aerodigestive tract coming to outpatient and emergency ward was conducted.

**Results & Conclusions:** Out of the 110 cases, air passage was found to be the commonest location of the foreign body (66.36%). FB in air passage occurred commonly in age group (0-20 years, while middle age group (21-40 years) commonly suffered from the lodgment of foreign body in the food passage. Most common site of lodgment of FB in airway was right bronchus while in food passage, commonest site found was cricopharynx.

**KEYWORDS:** Aerodigestive tract, Endoscopy, Foreign body.

### INTRODUCTION

Foreign body (FB) lodgment in the aerodigestive tract is a common accident that most otolaryngologists have to deal with, it carries an unmistakable potential for grave consequences, constituting an important cause of morbidity and mortality. The complex anatomy of the aerodigestive tract makes the prevention of foreign body accidents an impossible task.<sup>1</sup>

Majority of these foreign bodies gets impacted in the narrowest sites of the tract. The site of lodgment of the foreign bodies depends upon the size, shape and surface quality, composition of the patient during the ingestion/inhalation. In the review of 100 cases of esophagoscopies for suspected foreign body ingestion, Gonzalez et al<sup>2</sup> discovered that impactions were most common in the cervical esophagus (46%), followed by the middle third (18%), pyriform sinus (6%) and distal third of esophagus (2%). Gilyoma et al<sup>3</sup> found the cricopharyngeal sphincter to be the commonest site of impaction (68.5%) in the food passages.

Ono<sup>4</sup> reported that the most frequent site of foreign body lodgment in the airway is bronchus (321cases) followed by trachea (74) and larynx (51). Kim et al<sup>5</sup> reported 99 (50%) in the right main bronchus, 63 (32%) in the left main bronchus, 6 (3%) in the trachea, 5 (2%) at carina and 14 patients had multiple foreign bodies.

Entry into the right main bronchus is more often than

into left bronchus as the right bronchus is straight in line with trachea, shorter and more in diameter. Once the foreign body crosses the narrowest cricopharynx and enters the oesophagus, it usually enters the stomach.<sup>6</sup> Therefore; present study was conducted to study demographics, various types of foreign body and incidence of foreign body in the aerodigestive tract.

### MATERIALS & METHODS

Present study was conducted in the department of ENT, UPRIMS&R, Saifai, Etawah, Uttar Pradesh, India. Retrospective analysis of total 110 cases of suspected foreign body in aerodigestive tract coming to outpatient and emergency ward was conducted.

Cases were divided according to the location of foreign body into FB in air passage and FB in food passage. Further they were classified according to the exact location of the foreign body. The foreign bodies in the aerodigestive tract was diagnosed clinically and radiologically in the patients having history of aspiration/ingestion of some foreign body accidentally presenting with symptoms and signs suggestive of foreign body aerodigestive tract. Most foreign bodies were removed in EMOT while some of the cases required general anesthesia as they were impacted deep down in the air or food passages.

**Table 1: Age distribution according to lodgement of FB in Air & Food passage**

Age	Air Passage		Food Passage	
	No.	%	No.	%
0-10	21	28.77	1	2.7
11-20	29	39.73	4	10.81
21-30	13	17.81	17	45.95
31-40	3	4.1	10	27.03
>40	7	9.59	5	13.51
<b>Total</b>	<b>73</b>	<b>100</b>	<b>37</b>	<b>100</b>

**Table 2: Site of FB in air passage (n-73).**

Site of Foreign Body	No.	%
Nose & nasopharynx	16	21.92
Left Bronchus	12	16.44
Larynx	5	6.85
Right Bronchus	32	43.84
Trachea & Sub Glottis	8	10.96

**Table 3: Site of FB in Food passage (n-37).**

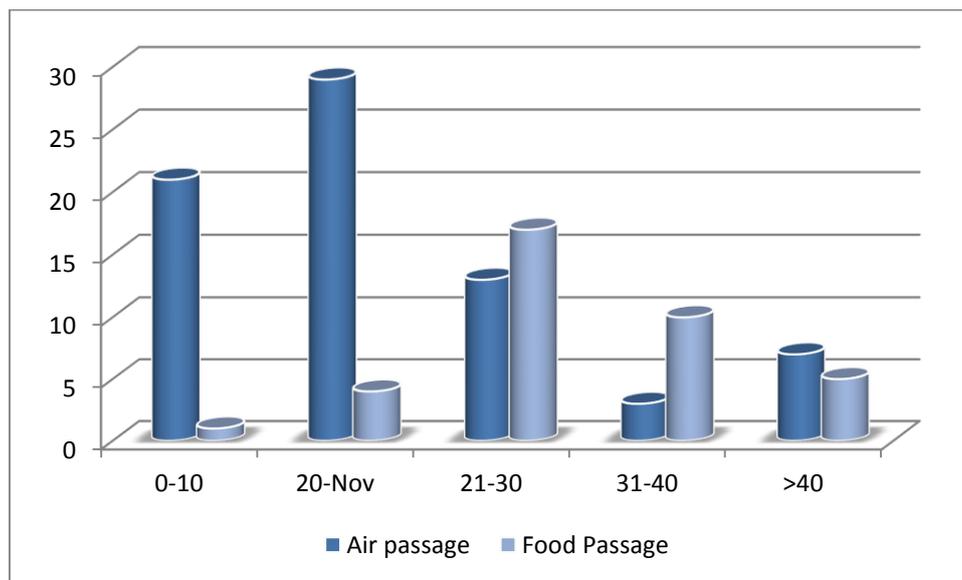
Site of Foreign Body	No.	%
Cricopharynx	28	75.68
Oesophagus	6	16.22
Pyriform Fossa	3	8.1

**RESULTS**

Out of the 110 cases, air passage was found to be the commonest location of the foreign body (66.36%). FB in air passage occurred commonly in age group (0-20 years-68.49%), while middle age group (21-40 years) commonly suffered from the lodgment of foreign body in the food passage (72.97%). Most common site of lodgment of FB in airway was right bronchus (43.84%) followed by nose & nasopharynx and left bronchus, while in food passage, commonest site found was cricopharynx (64.86%) followed by oesophagus.

**DISCUSSION**

Foreign bodies in the aerodigestive tract continue to be a common problem affecting the adults and children alike. A carefully obtained history with a high level of suspicion is most contributory to the diagnosis. In this study, it was observed that foreign body in the air passage is commonly seen in 0-20 year’s age group whereas the foreign body in food passage was seen commonly in elders. Usual foreign bodies include fish bone, coin, bone piece, nails, buttons, dentures, ear rings. Most common site of lodgment of FB in airway was right bronchus (43.84%) followed by nose & nasopharynx and left bronchus, while in food passage; commonest site found was cricopharynx (64.86%) followed by oesophagus. Out of all patients, around 85% came with a positive history of FB aspiration or ingestion.



**Fig 1: Age distribution according to lodgement of FB in Air & Food passage.**

In cases of aspirated FB there was definitive history of pharyngeal cough, choking and wheeze and in case of ingestion there was a history of dysphagia. Plain radiographs of the neck, chest and abdomen identify the radio opaque FB, while fluoroscopy using barium for non-radio opaque foreign body. The removal of foreign body is certainly a challenge to every endoscopist. The idea of dealing with a very young child with a history of

inhalation of foreign body can be a daunting task not only because of the demands that the removal of a foreign body makes on their skills, but also on account of the unpredictability in the degree of difficulty of the procedure.<sup>1</sup>

Jackson<sup>7</sup> suggested that most of these foreign bodies in food passages could be prevented by care in the preparation of food, special care in people wearing

dentures, and avoidance of putting inedible objects such as coins and buttons into the mouth.

The most common presentations of a foreign body in the airway were dyspnea, choking and cough, which are similar to those of Kim et al.<sup>5</sup> Among the signs, rhonchi and inspiratory stridor were most common. In the pharyngoesophagus, the most common symptoms were dysphagia and foreign body sensation. Odynophagia was found to be a more reliable indicator of a retained foreign body.<sup>8</sup> Odynophagia and inspiratory stridor are reliable signs of a foreign body in the pharyngoesophagus and tracheobronchial passage, respectively. Bones are the predominant type of foreign body and cricopharynx is the most frequent site of foreign body impaction in food passage and right bronchus in air passage. Radiological evaluation is the single most important diagnostic tool, but does not preclude endoscopy. Rigid endoscopy with forceps removal under general anesthesia is the preferred management modality. Delay or hesitation in performing endoscopy can result in life-threatening complications and irreparable damage.<sup>9-10</sup>

#### CONCLUSION

The commonest site of the foreign body in the air passage was right bronchus and lodgement of FB was particularly common in 0-20 age group. They are mostly observed in children owing to their natural propensity to put things in mouth, inability to masticate well, cry, laugh and shout while eating or playing. Thorough examination and radiographic findings will help to know the exact location of the Foreign Bodies. While in food passage, commonest site found was cricopharynx followed by oesophagus.

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