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### RESEARCH ARTICLE

#### PROSPECTIVE STUDY OF FOREIGN BODIES IN FOOD AND AIR PASSAGE.

**Dr. Rajaganesh MS ENT<sup>1</sup> and Dr. Arul Sundaresh Kumar MS ENT<sup>2</sup>.**

1. Assistant Professor, Madurai Medical College, Madurai.
2. Associate Professor, Madurai Medical College, Madurai.

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Foreign Body, Air passage, Food Passage, Cricopharynx, Trachea, Bronchus, Oesophagus

#### Abstract

The problem of foreign bodies in air and food passages is one of the commonest and most frequently encountered in the daily ENT practice. By air and food passages it is meant, laryngotracheobronchial tree and oesophagus alone. It is particularly significant since such accidents due to inhalation or ingestion of foreign bodies continue to take formidable toll of lives every year. It is mostly accidental; and negligence on the part of the patient is the major contributing factor for the lodgement of foreign bodies in air and food passages. Because of the impending danger of complications, they have to be attended to as emergencies. Endoscopic removal of foreign body or visualisation of the tract cannot be substituted for any other methods of examination.

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#### Introduction:-

Aims and Objectives:

The aim of this study is prospective analysis of the varieties of foreign bodies in the Air and Food passages with special reference to etiology. The patients who attended the departments of E.N.T. diseases, Government Rajaji Hospital, Madurai during the years 2005 to 2006 form the subject of present study.

#### Materials and Methods:-

The materials for this study are patients who attended Out Patient department since one year. Totally there were 51 cases in air passage and 80 cases in food passage. All cases were sincerely analysed for age, sex, incidence and common presentations they made, type of foreign body, their site of lodgement and how they were managed. Retrieval of the foreign body were made in possible methods available in our department.

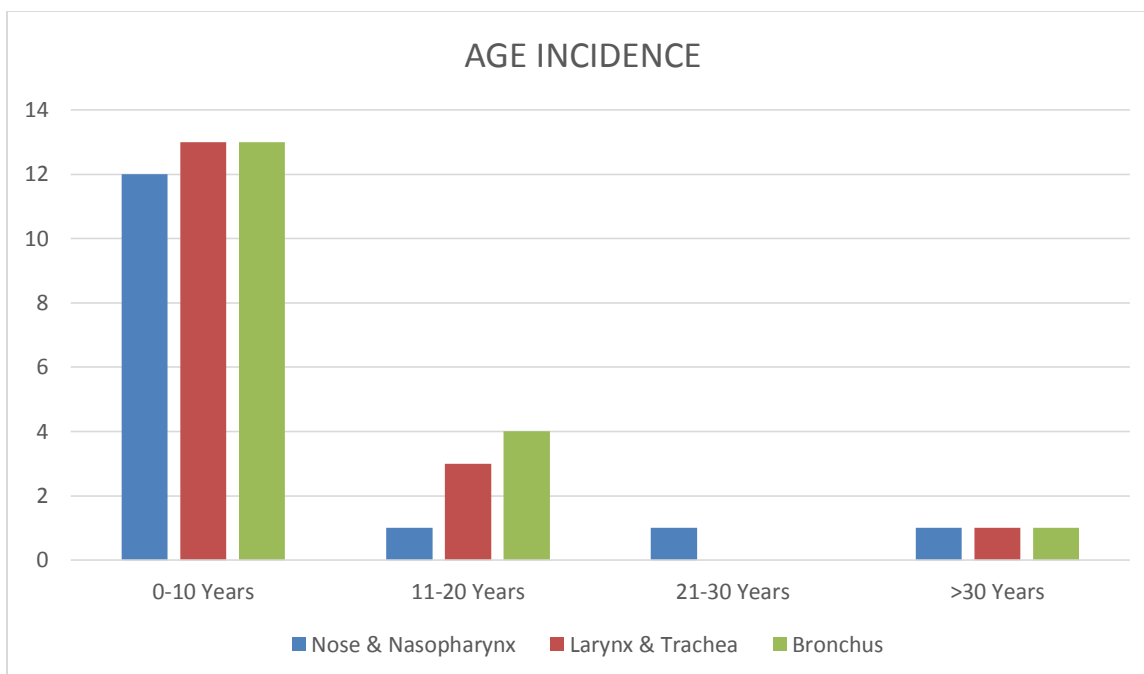
#### Study:-

The following observations were made regarding age, sex, incidence, type of foreign body, site of lodgement and presentation.

##### 1. AGE

**Corresponding Author:- Dr. Arul Sundaresh kumar.**

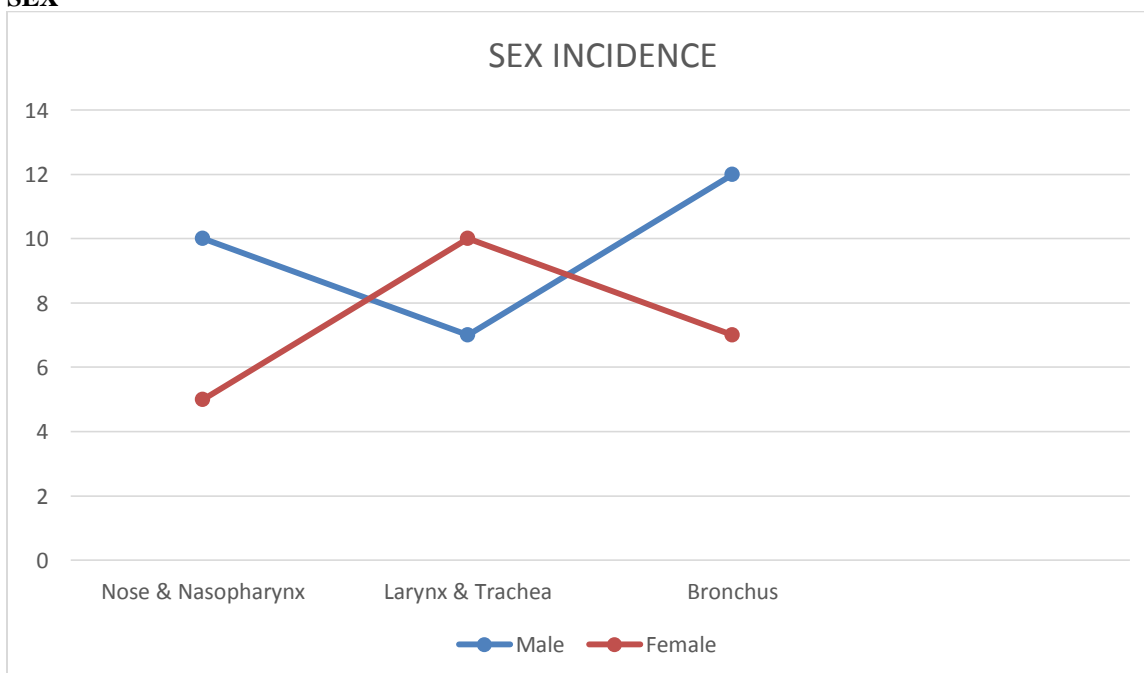
Address:- Associate Professor, Madurai Medical College, Madurai.



Age	Nose & Nasophaynx	Larynx & Trachea	Bronchus	Total	%
0-10 years	12	13	13	38	74.5
11-20 years	1	3	4	8	15.7
21-30 years	1	-	-	1	1.96
>30 years	1	1	2	4	7.8
Total	15	17	19	51	100

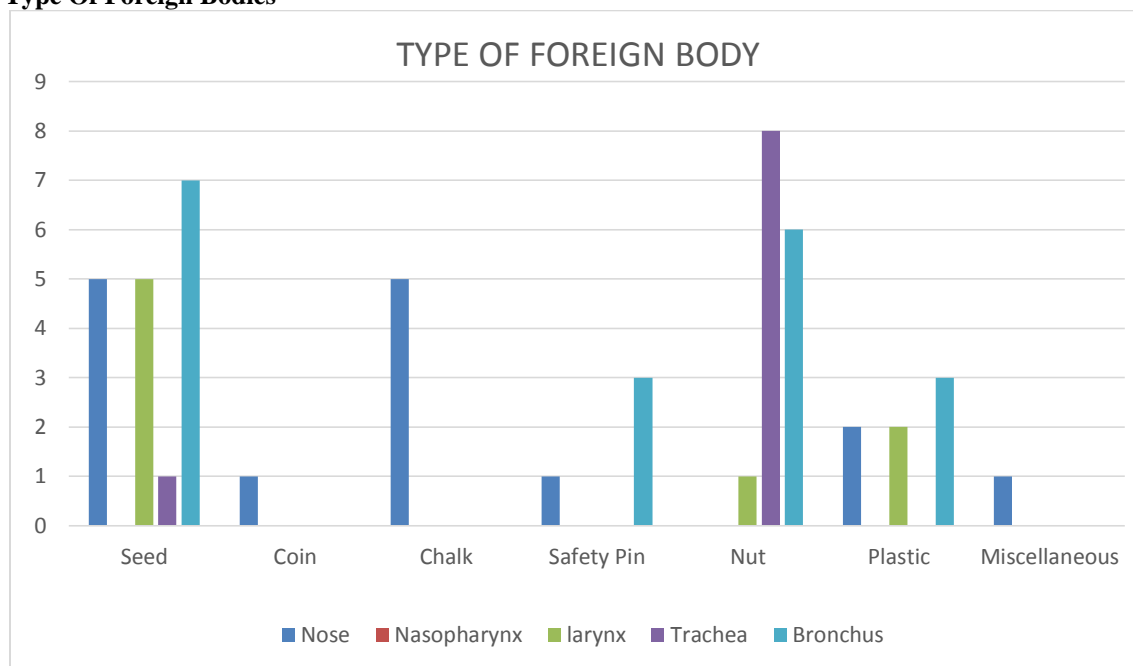
Among age , foreign bodies were common in children less than 10 years of age and among the passage it was common in bronchus

## 2. SEX



Sex	Nose & Nasophaynx	Larynx & Trachea	Bronchus	Total	%
Male	10	7	12	29	56.9
Female	5	10	7	22	43.1
Total	15	17	19	51	100

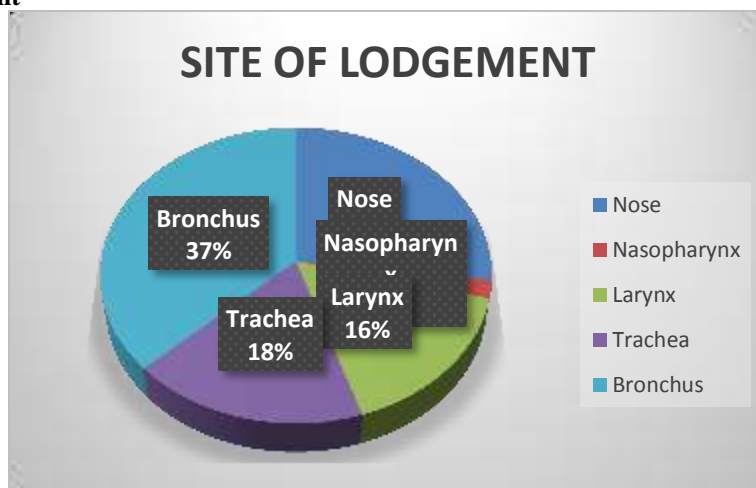
### 3. Type Of Foreign Bodies



Site	Seed	Coin	Chalk	Safety Pin	Nut	Plastic	Miscellaneous
Nose	5	-	5	1	-	2	1
Nasophaynx	-	1	-	-	-	-	-
Larynx	5	-	-	-	1	2	-
Trachea	1	-	-	-	8	-	-
Bronchus	7	-	-	3	6	3	-

Among foreign bodies, most common was vegetable seed in all places of nose, larynx, bronchus except trachea where nut was common followed by plastic foreign bodies like whistle.

### 4. Site of Lodgement



Site	Case in numbers	%
Nose	14	27.5
Nasophaynx	1	1.96
Larynx	8	15.7
Trachea	9	17.6
Bronchus	19	37.3
Total	51	100

Side	Right	Left
Nose	7	7
Bronchus	14	5

## 5. Presentation

### Nose

Presented as unilateral Nasal obstruction in almost all cases.

Usually there was history of putting foreign body.

Except in two cases where one was a psychiatric patient having put a fruit seed in his Left Nasal cavity and the other was a plastic paper that was put and forgotten and presented a having unilateral foul smelling discharge Left Nasal cavity

### Larynx & Trachea:-

Usual presentation is aspiration of foreign body in an apparently normal patient who developed sudden coughing, choking, difficulty in breathing, stridor.

When the foreign body was mobile and was in trachea, there was palpable thud & Auditory slap in some cases.

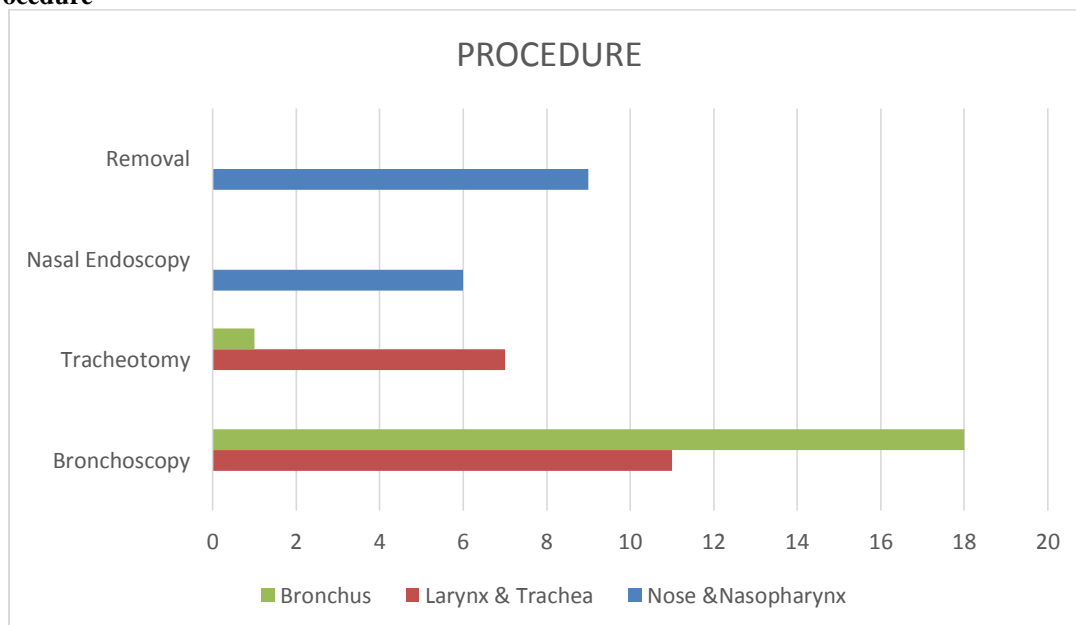
### Bronchus:-

Usually there was a history of foreign body aspiration.

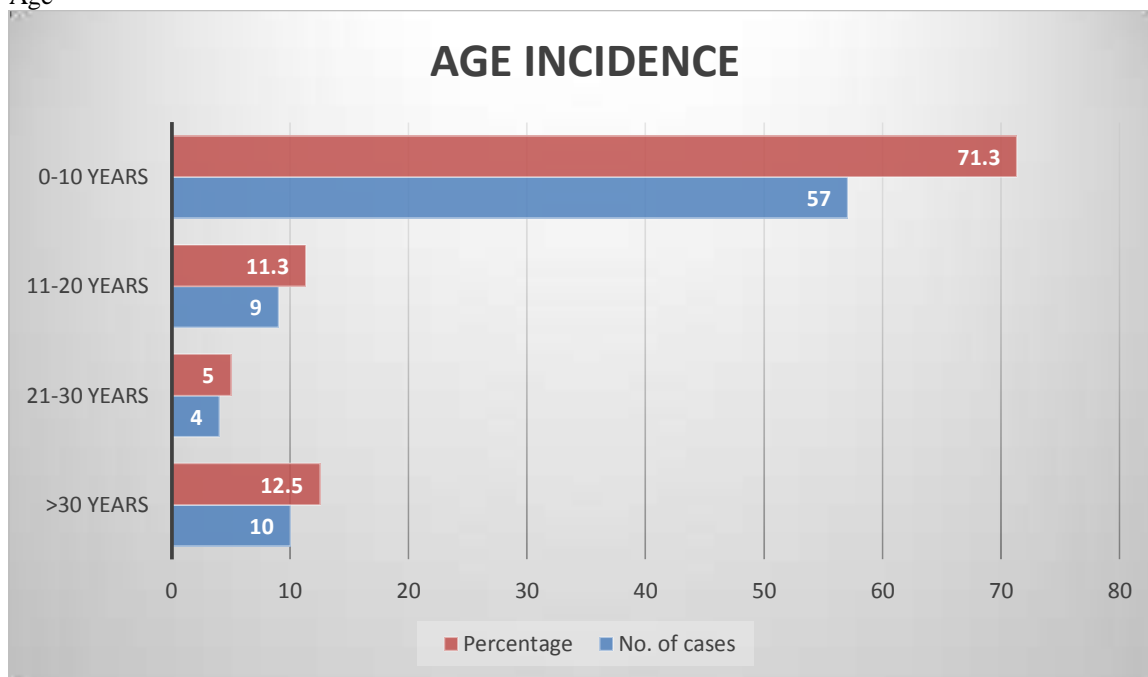
In pediatric age group, there was features of Lower Respiratory Infection not responding to medication. These cases were referred from pediatric department due to failure of medical management and for Bronchoscopic evaluation on doubt of foreign body.

In five cases there was history of Foreign body aspiration followed by asymptomatic period, patient presented due to failure to see foreign bodies passed via naturalis and Roentogram done to rule out its presence.

## 6. Procedure

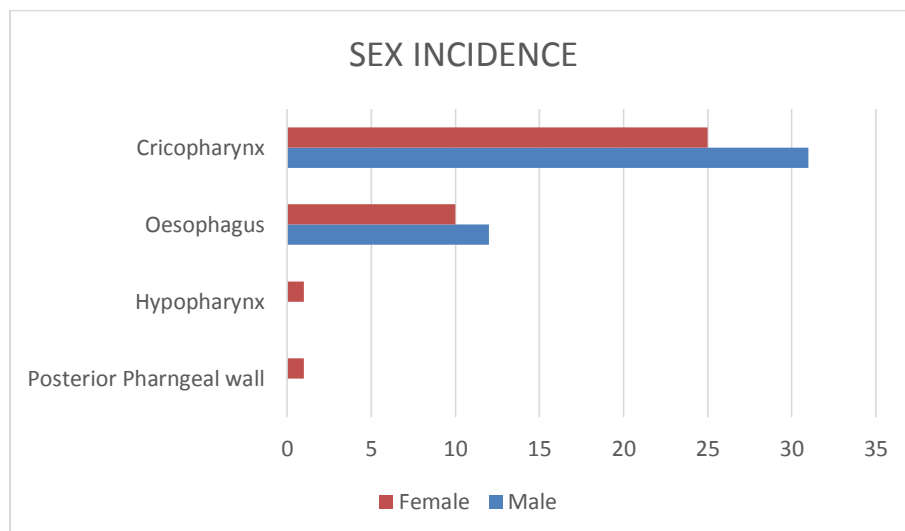


Site	Removal	Nasal Endoscopy	Tracheotomy	Bronchoscopy
Nose & Nasopharynx	9	6	-	-
Larynx & Trachea	-	-	7	11
Bronchus	-	-	1	18

**Food Passage:-****1. Age**

Age	No of cases	Percentage
0-10 years	57	71.3
11-20 years	9	11.3
21-30 years	4	5
>30 years	10	12.5

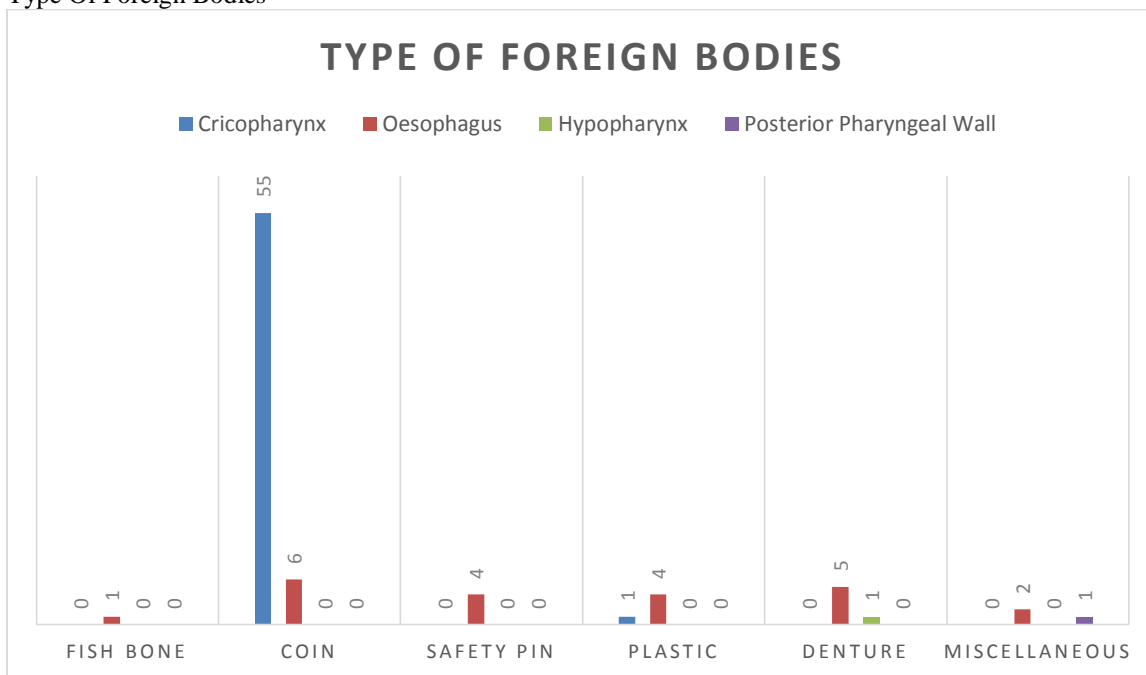
Most common in age 0-10 years of age

**2. Sex**

Site of foreign body	Male	Female	Total
Cricopharynx	31	25	56
Oesophagus	12	10	22
Hypopharynx	-	1	1
Posterior Pharyngeal Wall	-	1	1
	43	37	80

Male have a slight edge over females.

### 3. Type Of Foreign Bodies



Most common foreign body was coin followed by Denture , safety pin, plastics

### 4. Site Of Lodgement

Site	No of Cases	%
Cricopharynx	56	70
Oesophagus	22	27.5
Hypopharynx	1	1.25
Posterior Pharyngeal Wall	1	1.25

Most common site of lodgement of foreign bodies was in Cricopharynx followed by oesophagus.

### 5. Procedure

Site	Direct laryngoscopy	Oesophagoscopy	Spontaneous Expulsion
Cricopharynx	55	6	1
Oesophagus	-	22	-
Hypopharynx	-	-	1
Posterior Pharyngeal Wall	1	-	-
Total	56	28	2

### Discussion:-

A sincere attempt was made in the study and analyse all cases of foreign in food and air passage.  
Total number of cases 131

**Incidence:-**

Among 131 cases of foreign bodies about 80 cases were in food passage, which is common than Air passage, in which about 56 were in Cricopharynx. Similarly about 51 cases of foreign bodies in Air passage, 19 were lodged in Bronchus, mainly in the right main bronchus.

Among various ages, children <10 years were most common presentation than adults and adolescents, only 14 cases were seen in ages >30 years. Among children males were having slight edges over the females.

**Types of Foreign Body:-**

The commonest foreign body was coin in food passage and seed in Air passage. Foreign bodies like fish bone, safety pin, plastics, whistle, denture were also seen in food passage, besides rare foreign body like raw meat, gold ring. In air passage, besides vegetable seed, foreign bodies like groundnut, safety pin whistle, chalk pieces & gold ornaments were seen. Children playing with coin, safety pin & whistle formed a common causal factor. In adults hurried eating, improperly fitting dentures, alcoholic intoxication are main causative factors. SITE OF LODGMENT Commonest site of lodgement in the food passage was at the level of Cricopharynx. Next was upper third Oesophagus. In air passage Right bronchus was commonest followed by Nasal cavity, Trachea, Larynx and Subglottis. SYMPTOMS Among foreign bodies in Air passage, in most cases, there was choking, gagging, coughing and dyspnoea which followed a symptomless interval. Many children with foreign body in bronchus were brought with a past history of foreign bodies 3-4 days. On examination, there was respiratory distress ranging from mild to severe depending upon amount of volume lost on effective ventilation, with decreased air entry into the affected side, in some cases, lung collapse was seen. In cases of foreign bodies in larynx and trachea. Children were brought with stridor and respiratory distress. Usually in all these cases there was history of foreign body aspiration.

The most common symptom of foreign bodies in food passage was dysphagia. In some cases there was sensation of lump in throat and discomfort. In malignancy, foreign body sensation may be the first symptom, even though we have not had any such cases in this series.

**Investigation:-**

Besides, foreign body ingestion or inhalation typical history radiological investigation in the form of X-ray soft tissue neck AP and lateral views, X-ray chest PA and lateral views were taken. Infants X-ray "Base of skull to Pelvis" is requested.

**Treatment:-**

For foreign bodies in larynx and Trachea sometimes in bronchus who presented in stridor emergency tracheostomy was done and foreign body carefully retrieved via tracheostome, when such foreign body descend to bronchus, bronchoscopy was done. In patients with mild to moderate stridor, emergency bronchoscopy was done and foreign body removed through the scope.

In cases of foreign body in nose, removal with Nasal foreign body forceps was done and in missed cases, using Nasal endoscopy & short GA, foreign body was removed. Nasal endoscopic removal was also done in few cases. Regarding foreign bodies in food passage, when in Cricopharynx Direct Laryngoscopy was done. Under short GA and foreign body removed. In some cases, after relaxation, foreign body entered upper's Oesophagus, during which same was removed using Oesophagoscope. For cases of Oesophageal foreign body, Oesophagoscope was done and foreign body removed with suitable forceps. Regarding Anesthesia' all patients were premedicated with anticholinergic drug and monitoring was done by pulse, blood pressure and pulse-oximetry. In food passage direct laryngoscopic procedures were done after mask ventilation and induction with intravenous agent like thiopentone, propofol and depolarising muscle relaxant sequence. For in nasal cavity short intravenous agent like ketamine was given. For oesophagoscopy orotracheal intubation was done and volatile agents were given. For bronchoscopy induction with intravenous agent and muscle relaxant succinyl choline, assisted ventilation done by side arm of scope. Some of tracheostomy were done under GA spontaneous ventilation with halothane.

**Conclusion:-**

- 1) The problem of foreign bodies in air and food passage is one of the common and frequently encountered in daily ENT practice.
- 2) Endoscopic removal of foreign body or visualisation of the tract cannot be substituted for any other methods of examination in history of medicine.

- 3) The foreign bodies were more commonly seen in children than adults
- 4) The common site of lodgement was Cricopharynx in food passage and Right Main Bronchus in Air passage.
- 5) In almost all cases Endoscopic removal was possible.
- 6) Paediatricians, Radiologists and Otolaryngologists should always think of vegetable and non-opaque foreign bodies of occult nature in children having sudden obstructive lung Pathology until proved otherwise by Bronchoscopy "All that wheezes is not Asthma".
- 7) High Index of suspicion, early diagnosis and appropriate management considerably decreases morbidity and mortality.

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