

## ORIGINAL ARTICLE

# To Determine the Frequency of Common Site of Lodgment of Foreign Body in Respiratory Tract of Children

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## ABSTRACT

**Aim:** To determine the frequency of common site of lodgment of foreign body in respiratory tract of children.

**Setting:** Pediatric and ENT Departments, Khyber Teaching Hospital, Peshawar.

**Study Design:** Descriptive cross-sectional study.

**Duration of Study:** six months i.e. 30/6/2018 to 30/12/2018

**Methodology:** 300 cases were included. Demographic characteristics like, name, age, gender and address was recorded. H/O inhaling a specific foreign body and time elapsed was noted. General physical examination for signs of respiratory distress was noted. Chest X ray was performed. Examination of oral cavity and nostrils was performed for a suspected foreign body. If nothing found, the patient was immediately shifted to ENT department for emergency bronchoscopy to remove the suspected foreign body. The type of foreign body recovered and the site of respiratory tree from where it is removed were noted.

**Results:** Mean age was 12 years with SD  $\pm$  2.16. 51% children were male while 49% children were female. Site of lodgment of foreign body among 300 patients was analyzed i.e. 1% patients had oral cavity, 7% had nasal cavity, 1% patients had oro-pharynx, 3% patients had larynx, 13% patients had main trachea, 30% had right bronchus, 15% patients had left bronchus, 1% patients had right bronchiole, 1% patients had left bronchiole in respiratory tract of children.

**Conclusion:** Frequency of site of lodgment of foreign body was i.e. oral cavity 1%, nasal cavity 7%, oro-pharynx 1%, larynx 3%, main trachea 13%, right bronchus 30%, left bronchus 15%, right bronchiole 1% and left bronchiole 1%.

**Keywords:** Lodgment, foreign body, respiratory tract, children.

## INTRODUCTION

Aspiration or ingestion of foreign bodies are common in infants and children. Children are mostly aspirate foreign material due to lack of molar teeth. Talking, laughing and running during chewing process increase the chances<sup>2</sup>. Children age > 3 years having more chance as compared to other age groups. Foreign body aspiration can cause problems and must be treated properly<sup>1</sup>. Suffocation due to FB is a leading cause of death in children aged 0-3 years<sup>3</sup>.

The objective of the study was to determine the frequency of common site of lodgment of foreign body in respiratory tract of children.

## METHODOLOGY

After approval from Ethical Committee, this descriptive cross-sectional study was conducted in Pediatric and ENT Departments, Khyber Teaching Hospital, Peshawar for a period of six months from 30/6/2018 to 30/12/2018. Sample size was 300 patients and consecutive non-probability sampling technique was used.

**Inclusion Criteria:** All male and female children presented with history of foreign body inhalation and respiratory distress with ages 6 months to 6 years.

**Exclusion Criteria:** Patients who are hemodynamically not stable for bronchoscopy and parents refusal to allow for performing bronchoscopy on their children were excluded.

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**Data collection:** After getting permission from hospital ethical committee, informed written consent was obtained from the patient's attendants as part of ethical practice. Patients were admitted from out-patient department and casualty in pediatric department. Demographic characteristics like, name, age, gender and address was recorded. H/O inhaling a specific foreign body, time elapsed was taken. The type of foreign body recovered and the site of respiratory tree from where it is removed were noted. All the information was recorded in a performa. SPSS version 22.0 was used for analyzing the data.

## RESULTS

The detail of results is given in tables 1,2,3,4

Table 1: Distribution of age

Age	n	%age
< 1 year	9	3%
1-3 years	186	62%
4-6 years	105	35%
Total	300	100%

Mean age was 3years with SD  $\pm$  2.16.

Table 2: Gender distribution

Gender	n	%age
Male	153	51%
Female	147	49%
Total	300	100%

Table 3: Foreign Body Recovered

Foreign Body Recovered	n	%age
Peanut	36	12%
Coin	6	2%
Small Metallic Ball	6	2%
Food items	75	25%
Others	177	59%
Total	300	100%

Table 4: Site Of Lodgment Of Foreign Body

Site Of Lodgment	n	%age
Oral Cavity	3	1%
Nasal Cavity	21	7%
Oro-Pharynx	3	1%
Larynx	9	3%
Main Trachea	39	13%
Right Bronchus	90	30%
Left Bronchus	45	15%
Right Bronchiole	3	1%
Left Bronchiole	3	1%

## DISCUSSION

In this study, mean age $\pm$ SD was 12 $\pm$ 2.16. 51% children were male while 49% were female. Site of lodgment of foreign body is 1% in oral cavity, 7% nasal cavity, 1% oro-pharynx, 3% patients had larynx, 13% patients had main trachea, 30% in right bronchus, 15% in left bronchus, 1% in right bronchiole and 1% in left bronchiole.

In another study by Friedman EM et al<sup>5</sup>, site of lodgment was 3%,13%,52%,6%,1%,18% and 5% in the larynx, trachea, right main bronchus, right lower lobe bronchus, right middle lobe bronchus, left main bronchus, and left lower lobe bronchus respectively. This study is consistent with our study. Successful removal of all foreign bodies was 78%; success rates were 86% for nasal FB, 72% for aural objects, and 67% in the throat<sup>4</sup>.

In another study by Ahmed et al<sup>6</sup>, it is reported that in 8(22.9%) cases, FBs were lodged in the left main bronchus and 6(17.1%) were in the right main bronchus. The 9-11 year and 3-5 year old age groups were especially noted to have FB impaction involving the left main bronchus i.e. 3 (42.9%) and right main bronchus i.e. 2 (18.2%).

In one study conducted by Suligavi SS et al<sup>7</sup>, 63 cases were seen with the age range of 11 months to 9 years with

highest incidence of 65.1% cases between 1-3 years. Most common age of presentation was 1 to 3 years. The youngest child was of 11 months of age and oldest was 9 years. In 80.9% cases, vegetative foreign body was found and remaining 19.1% cases had non-vegetative FB. Groundnut was commonest vegetative foreign body found in 49.2% cases and betel nut in 19.1%. Non vegetative foreign bodies included whistle (plastic), piece of rubber, stone, safety pin, plastic bead. The most common site of foreign body lodgment was within the right main bronchus seen in 50.8% cases, followed by the left main bronchus in 46% and 3.2% in trachea.

## CONCLUSION

Frequency of site of lodgment of foreign body is i.e. oral cavity 1%, nasal cavity 7%, oro-pharynx 1%, larynx 3%, main trachea 13%, right bronchus 30%, left bronchus 15%, right bronchiole 1% and left bronchiole 1% in respiratory tract of children.

**Conflict of interest:** Nil

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