

Original Research Article

Rare foreign bodies of upper aerodigestive tract: a study of 30 cases

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ABSTRACT

Background: Aero-digestive foreign bodies are prevalent in our part of the country. Apart from the usual foreign body we encountered some unique foreign bodies, the diagnosis and management of which, is difficult due to varied and overlapping clinical presentation. Rare foreign bodies in the aero-digestive tract pose challenges in diagnosis and treatment.

Methods: This was a retrospective observational study on thirty patients with aerodigestive foreign bodies who visited our hospital from July 2015 to October 2017.

Results: Maximum number of cases was seen in age group of 0-5 years. The male to female ratio was 2:1. Among various types of foreign bodies, majority were metallic (43.3%). The most common site was cricopharynx (53.3%) followed by bronchus (26.6%) and esophageal (16.6%). The most common procedure done was hypopharyngoscopy (53.3%).

Conclusions: Aerodigestive tract foreign bodies are one of the emergencies that have considerable mortality and morbidity. High degree of skill and suspicion are required by surgeon for the management of foreign body.

Keywords: Rare foreign body, Aerodigestive tract, Management

INTRODUCTION

The study of foreign bodies in the air and food passage is a subject of human as well as clinical interest. However, the importance of foreign bodies in air and food passage was not particularly noted until the early part of 19th century. One of the complications that an otorhinolaryngologist frequently meets with in his professional life is foreign bodies in the air or food passage may, many times, prove fatal to the patient.¹ For clinical purposes foreign bodies are grouped into those that require immediate removal and those that could wait for ideal operative procedure. Foreign bodies are relatively common, particularly in children, but their presence in adults can by no means be ignored. In this study an attempt is made to study the problems caused by

the foreign bodies in aero digestive tract, difficulties encountered during removal, and complications following removal.^{2,3}

Aim of the study was to review thirty rare cases of aerodigestive foreign bodies encountered and managed in our hospital during the study period.

METHODS

After getting approval from institutional ethics committee a retrospective observational study was done on thirty patients with aerodigestive foreign bodies who visited ENT emergency in SPMC, Bikaner from July 2015 to October 2017. All the cases selected and studied in detail

for age, sex, type of foreign body, site of lodgement and management.

Inclusion criteria

Patients presenting with history of swallowing, inhalation or ingestion of the rare foreign bodies with symptoms such as dysphagia, drooling of saliva, wheeze, and acute respiratory distress were included in the study.

Exclusion criteria

Patients with no history of inhalation/ingestion of foreign body and patients presenting with history of swallowing, inhalation or ingestion of common foreign bodies (peanuts, coins, supari, channa) were excluded.

Patients fulfilling inclusion criteria were clinically and radiologically examined, investigated, and treated accordingly by hypopharyngoscopy or esophagoscopy or bronchoscopy or laryngoscopy.

Statistical analysis

Quantitative data was double entered, validated and analysed using SPSS (Statistical Package for the Social Sciences) Version 21. Key analytic outputs were age, gender and various clinical factors. Descriptive analysis was done to summarize the analytic output as per different independent variables.

RESULTS

Maximum number of cases was seen in age group of 0-5 years (Table 1). The male to female ratio was 2:1 (Table 2). Among various types of foreign bodies, majority were metallic (43.3%) (Table 3). The most common site was cricopharynx (53.3%) followed by bronchus (26.6%) and esophageal (16.6%) (Table 4). The most common procedure done was hypopharyngoscopy (53.3%) (Table 5).

Table 1: Age distribution.

| Age group (years) | No. of cases | Percentage |
|-------------------|--------------|------------|
| 0-5 | 20 | 66.6 |
| 6-10 | 5 | 16.6 |
| 11-20 | 3 | 10 |
| 20-30 | 0 | 0 |
| 30-40 | 1 | 3.3 |
| 41 and above | 1 | 3.3 |

Table 2: Gender distribution.

| Sex | No. of cases | Percentage |
|--------|--------------|------------|
| Male | 20 | 66.6 |
| Female | 10 | 33.3 |

Table 3: Types of foreign bodies.

| Type of foreign bodies | No. of cases | Percentage |
|--|--------------|------------|
| Metallic | 13 | 43.3 |
| Plastic | 6 | 20 |
| Glass | 2 | 6.6 |
| Other (coconut, wheat bali, denture, piece of paper) | 9 | 30 |

Table 4: Site of foreign bodies.

| Site of foreign body | No. of cases | Percentage |
|----------------------|--------------|------------|
| Cricopharynx | 16 | 53.3 |
| Mid oesophagus | 3 | 10 |
| Lower oesophagus | 2 | 6.6 |
| Right bronchus | 6 | 20 |
| Left bronchus | 2 | 6.6 |
| Larynx | 1 | 3.3 |

Table 5: Type of procedure.

| Type of procedure | No. of cases | Percentage |
|----------------------|--------------|------------|
| Hypopharyngoscopy | 16 | 53.3 |
| Rigid oesophagoscopy | 5 | 16.6 |
| Rigid bronchoscopy | 8 | 26.6 |
| Direct laryngoscopy | 1 | 3.3 |

DISCUSSION

Foreign bodies in aerodigestive tract are one of the real emergencies having considerable mortality and morbidity.⁴ Foreign body (FB) ingestion and aspiration is common in children. Any child presenting with sudden history of respiratory distress with decreased chest movement and air entry on the affected side, FB aspiration should be strongly suspected. Even in absence of signs and symptoms, FB should be considered especially when there is positive history of FB ingestion present. Early diagnosis is essential as delay in diagnosis and treatment results in complications.⁵

The cricopharyngeal and oesophageal foreign bodies are potentially dangerous and may pose problems in diagnosis and management, they appear less dangerous than in the respiratory passages.^{6,7} In our study, 70% patients had cricopharyngeal and esophageal foreign body and 20% had lower airway foreign body.

Normal finding on chest radiograph should not rule out the possibility of FB aspiration, though a positive finding may be highly suggestive of its presence.⁸⁻¹⁰ In our study, one patient had history of ingestion of needle but surprisingly, no foreign body was visualized on X ray (Figure 3). A history of choking is reported to have a high clinical specificity (63%) as well as clinical sensitivity (97%) in the diagnosis of foreign body aspiration.¹¹



Figure 1: A 4 yr/male with 1 day history of ingestion of toy and vomiting, X-ray neck soft tissue lateral view and pa view was done, radiopaque foreign body was seen at cricopharynx, hypopharyngoscopy and removal of metallic spinning top was done.



Figure 2: A 16 yr/female presented with history of difficulty in breathing since 2 days with whistling voice with respiration, X-ray chest PA view didn't show any changes, bronchoscopy was done under GA and whistle was removed from right main bronchus.



Figure 3: A 16 yr/male presented with history of ingestion of needle, throat pain and bleeding orally; on 90 degree endoscopy, needle was seen piercing into cricopharyngeal mucosa which was removed by hypopharyngoscopy, surprisingly, no foreign body was visualized on X-ray.

Rigid bronchoscopy is used in management of cases of suspected FB aspiration. It is the procedure of choice for good visualisation, identify and removal of the foreign body due to its better control of the airway, and manipulation.¹²⁻¹⁵ In our study, 26.6% patients underwent rigid bronchoscopy for foreign body in bronchus.

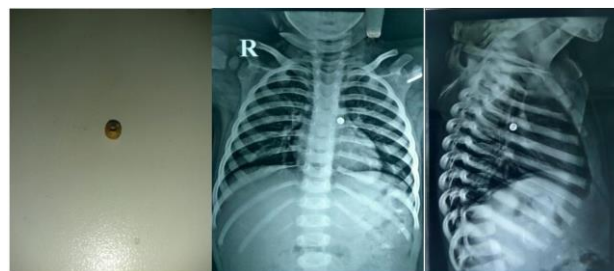


Figure 4: A 2 yr/female presented with cough, fever, difficulty in breathing, air entry B/L equal; X-ray PA chest view showed a radiopaque foreign body in left bronchus which was metallic bead as seen after removal.

In study conducted by Mahyar et al and Rajashekran et al found history of aspiration in only 57.4% and 62% of the cases, respectively.^{16,17} The foreign body implicated is to a certain extent dependent on the education, culture and dietary habits of the country. Hence, parents should be educated on food safety and keeping metallic objects such as coins out of reach from their young children.

CONCLUSION

Aerodigestive tract foreign bodies are one of the emergencies that have considerable mortality and morbidity. High degree of skill and suspicion are required by surgeon for the management of foreign body. Parents must be educated about keeping away these kinds of article from reach of children and to observe the activity of child will help prevent the higher incidence of a foreign body in children. Prevention is best, but early recognition remains a critical factor in the treatment of FB inhalation in children.

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