



Research Article

ESOPHAGOSCOPY FOR ESOPHAGEAL FOREIGN BODIES:
AN INSTITUTIONAL EXPERIENCE

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ABSTRACT

Aims:

- To study the age and gender preponderance of the patients.
- To study the distribution of the various types of foreign bodies encountered.
- To study the distribution of site of lodgement of the foreign bodies.
- To study the complications (if any) due to the foreign bodies and/or during esophagoscopy.

Methods: It was a hospital based prospective study. A total of 264 patients were included in the study over a duration of 3 years (November 2019 to October 2022). Written informed consent was taken from each patient &/or relatives before performing esophagoscopy. All the patients were subjected to careful clinical examination and investigations required followed by emergency rigid esophagoscopy removal of the foreign body. The patients were followed up at 1 week and 1 month after foreign body removal.

Results: Among the 264 patients, 75.7 % of patients belonged to the age group of less than 10 years. In this age group, 40.9 % patients were males. Out of the 264 foreign bodies removed, coins were the most frequently encountered foreign body comprising of 79.1 % cases. However, some uncommon foreign bodies like LED bulb, medicine blister pack, plastic bottle cap, ear ring were also encountered. Most of the foreign bodies were lodged at the cricopharyngeal constriction (sphincter) comprising of 82.9 % of the cases followed by the aorto-bronchial constriction of mid esophagus which comprised of 15.2 % of cases. Out of all the patients, 1 patient was found to have retropharyngeal abscess along with the culprit foreign body at the time of admission and 1 patient suffered from esophageal perforation and died despite best possible efforts.

Conclusion: Foreign body ingestion is a common ENT emergency. Though children are the most common patients, adults can also accidentally ingest unwanted foreign bodies. Sharp objects (like meat bone, fish bone, metallic objects etc) and lithium batteries (corrosive) pose the greatest risk. Early diagnosis and management is of utmost importance to prevent complications. Parents must keep a close look on their children and avoid them from playing with any small object which they can accidentally ingest. Adults should focus on chewing their food thoroughly, avoid talking and watching television during meals and use properly fitting dentures.

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INTRODUCTION

Ingestion of foreign bodies is common emergency condition faced by otolaryngologists in day to day practice. Around 80%–90% pass through the gastrointestinal tract spontaneously while 10%–20% need endoscopic or surgical removal.⁽¹⁾ Ingestion of foreign bodies is most commonly found in pediatric population, though it is also not uncommon among adults. Ingestion of foreign bodies in adults are mostly accidental comprising mostly of food items and sharp objects.⁽²⁻⁵⁾ Many ingested FBs become impacted, often in the esophagus, and have the potential to cause serious complications, apart from significant distress to the patient and

family. Rigid esophagoscopy is a common surgical procedure performed by otolaryngologists in removal of the foreign bodies from the esophagus.⁽⁶⁾ Foreign body ingestion is considered as a serious medical condition because of possible complications such as the development of mucosal ulceration, esophageal perforation, mediastinitis, vascular trauma, aorto-esophageal fistula, pseudoaneurysm, paraesophageal abscess, tracheoesophageal fistula, pneumothorax, pericarditis, and other conditions.⁽⁷⁻¹⁰⁾

The purpose of the study is to study the variety of cases of foreign bodies in the esophagus at a tertiary care hospital in West Bengal and compare the findings with the representative case series already published in literature.

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METHODS

It was a hospital-based descriptive type of prospective study. A total of 264 patients were included in the study done over a period of 3 years (November 2019 to October 2022). Digital radiograph was done for each patient attending the ENT outpatient department with history of foreign body ingestion. Written informed consent was taken from each patient &/or relatives before performing esophagoscopy. The patients were followed up at 1 week and 1 month after the procedure. Patients who yielded negative results on imaging and esophagoscopy, and patients where the foreign body passed into the stomach were excluded from the study.

RESULTS

Age & Gender distribution: Most of the patients (75.7 %) belonged to the age group of less than 10 years. Of all the 264 patients, 51.2 % were males and males outnumbered females in the age groups of less than 10 years and more than 50 years as evident from **Table 1**.

Table 1

Age Group	Males [n (%)]	Females [n(%)]	Total [n(%)]
< 10 YEARS	108 (40.9%)	92 (34.8 %)	200 (75.7 %)
10 – 50 YEARS	11 (4.2 %)	26 (9.8%)	37 (14 %)
> 50 YEARS	16 (6.1 %)	11 (4.2 %)	27 (10.3 %)
TOTAL	135 (51.2 %)	129 (48.8 %)	264 (100 %)

Foreign Bodies Encountered

As seen from Table 2, coins were the most common foreign body encountered (79.1 %)(Image 1), followed by meat / meat bone (Image 2)(8.3%) and artificial denture (Image 3) (6.1 %). Some uncommon foreign bodies have also been removed comprising of ear ring (Image 8), LED bulb (Image 9), medicine blister pack, plastic bottle cap etc.

Table 2

Foreign body	Frequency	Percentage
Coin	209	79.1 %
Meat / meat bone	22	8.3 %
Artificial denture	16	6.1 %
Fish bone	8	3.0 %
Button battery	3	1.1 %
Led bulb	1	0.4 %
Ear ring	1	0.4 %
Medicine blister pack	1	0.4%
Plastic bottle cap	1	0.4 %
Non-specific metallic foreign body	1	0.4 %
Needle	1	0.4 %
TOTAL	264	100 %



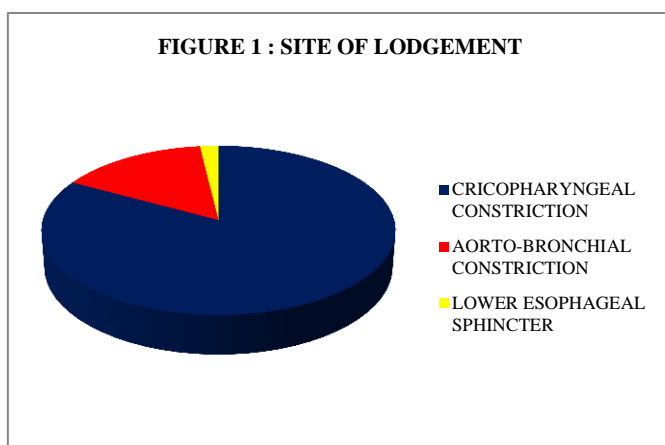
Image 7 (Non-specific metallic foreign body)

Image 8

Image 9

Site of lodgement

Figure 1 shows that the cricopharyngeal constriction is the most common site of lodgement of foreign bodies (82.9 %), followed by the aorto-bronchial constriction (mid esophagus) (15.2 %) and the lower esophageal sphincter(1.9 %).



Morbidity & Mortality

Out of all the 264 patients, 1 patient presented with retropharyngeal abscess (Image 10) due to retained foreign body, who was managed by foreign body removal, drainage of retropharyngeal abscess along with antimicrobial coverage. Another 1 patient suffered from esophageal perforation, developed mediastinitis in the post-operative period and finally died despite best possible management.



Image 10

DISCUSSION

Rigid esophagoscopy is a common and relatively efficient and safe method for extraction of foreign bodies from the esophagus. In this study, the most common age group of patients was less than 10 years of age. This is in similarity with various studies in literature.^(11,12,13,14)

Amongst the total number of patients, males were slightly more predominant than females (51.2 % vs 48.8 %). However, in the age group of (10-50) years, females outnumbered males (9.8 % vs 4.2 %). Predominance of male patients in the paediatric age group were observed in a number of studies across the globe.^(11,12,13,14) However, in a study by Pino RV *et al*, majority of the patients were females.⁽¹⁵⁾ This can be attributed to the fact that their study comprised only of adult



Image 1

Image 2

Image 3



Image 4 (Fish Bone)

Image 5 (Button Battery)

Image 6 (Needle)

patients while our study comprises of pediatric and adult patients.

In this study, coin was found to be the most commonly encountered foreign body (79.1 %) followed by meat/meat bone and artificial denture (8.3 % and 6.1 % respectively). In literature, coins were undoubtedly the most common ingested foreign body in the pediatric population.^(14, 16) Meat/meat bone, artificial dentures were encountered in adult patients. The nature of foreign bodies impacted in adults vary across the globe. Fish bones were the most common foreign bodies found in the upper gastrointestinal tract in South China.⁽⁴⁾ In Western Hemisphere, impacted meat/food item was the most common impacted esophageal foreign body.⁽¹⁷⁾ The variations can be attributed to the food habits of people of an area, ritualistic, cultural beliefs etc.

In our study, the cricopharyngeal sphincter was the most common site of lodgement of foreign bodies while the lower esophageal sphincter was the least common site (82.9 % vs 1.9 %). Similar results were also encountered in the studies by Lin *et al.*⁽¹⁸⁾ and Little *et al.*⁽¹⁹⁾

In our study only 1 patient presented with retropharyngeal abscess due to retained foreign body. Another patient suffered from esophageal perforation, developed mediastinitis in the post-operative period and later died despite best possible measures. These complications were within the list of possible complications in literature.⁽⁷⁻¹⁰⁾

CONCLUSION

Foreign body ingestion is a common ENT emergency. Though children are the most common patients, adults can also accidentally ingest unwanted foreign bodies. Sharp objects (like meat bone, fish bone, metallic objects etc) and lithium batteries (corrosive) pose the greatest risk. Early diagnosis and management is of utmost importance to prevent complications. Parents must keep a close look on their children and avoid them from playing with any small object which they can accidentally ingest. Adults should focus on chewing their food thoroughly, avoid talking and watching television during meals and use properly fitting dentures.

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