



DANGEROUS FOREIGN BODY IN OESOPHAGUS: A CROSS SECTIONAL STUDY.

Otorhinolaryngology

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ABSTRACT

Introduction: Foreign body (FB) ingestions and esophageal food bolus impactions are common problems faced by doctors and are frequent reasons for urgent endoscopy. Patients with esophageal foreign bodies require prompt diagnosis and therapy. The present study was done with objective to study aetiopathology and sociodemographic profile of patient with foreign body. **Material and Methods:** A study was conducted in otolaryngology department of Dr. Vaishampayan Government Medical College and Shri Chatrapati Shiwaji Maharaj, Sarvopachar Rugnalay, Solapur on 48 patients with oesophageal foreign bodies over period of 2 years from August 2020 to August 2022. **Results:** Majority of the foreign body were of non-vegetative (83.33%), mostly coin in (28) 58.33%. Important presenting complaints to opd was foreign body sensation(47.91%), dysphagia & drooling (31.25% each) and throat pain(27.90%) **Conclusions:** Esophageal foreign bodies are common in children and coin is the most common foreign body ingested. The common site of impaction is at the cricopharynx.

KEYWORDS

Foreign body, Oesophagus, Oesophagoscopy, Ingestion of coin.

INTRODUCTION:

Foreign body (FB) ingestions and oesophageal food bolus impactions are common problems faced by doctors and are frequent reasons for urgent endoscopy.¹ Foreign body ingestion is a commonly encountered problem in both children and adults in emergency departments. After nose and ear, the oesophagus is the commonest site for foreign body impaction.² Most foreign body ingestions in children are non-vegetative articles (nonfood objects) such as coins, marbles, buttons, safety pins, toys, magnets, and batteries. For the remaining 20% of ingestions that occur in adults, most are related to eating, leading to either bone or meat bolus impaction.³

Although most foreign objects are passed spontaneously, 10-20% of these patients need urgent care and treatment and approximately 1% will require surgery.⁴ The common symptoms and signs in patient with a foreign body that has been retained for less than 24 hours tend to be gastrointestinal and include dysphasia, drooling, vomiting, gagging and anorexia. Major respiratory symptoms are more common, weeks or months after ingestion, such as coughing, stridor, fever, chest pain, wheezing, chronic upper respiratory tract infections, pneumonia and hemoptysis.⁵ The best method of removing impacted foreign body remain controversial. Rigid endoscopic removal of foreign body is safe and effective, but often requires General anaesthesia.⁶

The main complications of esophageal foreign bodies are obstruction and perforation. Obstruction may be partial (eg, patient can swallow liquids or at least their oral secretions) or complete. Partial obstruction is less emergent unless it involves a sharp object embedded in the wall, which can lead to perforation. Complete obstruction is poorly tolerated clinically, and even a smooth object, if tightly impacted, may cause pressure necrosis and risk of perforation if allowed to remain in the esophagus for more than about 24 hours. Complications also depend on the nature of the object involved. Despite their small size, impacted disk or button batteries are objects of particular concern because liquefaction necrosis and perforation can occur rapidly

Several types of medical management have been studied for esophageal foreign body. In theory, medications that relax the smooth muscles of the LES might allow smooth, blunt objects to pass

spontaneously into the stomach. Glucagon is the most commonly discussed agent; dose 0.25 mg to 2 mg intravenously (IV) over 1 to 2 minutes in a sitting patient. This is followed by oral water or carbonated beverage in 1 minute to promote esophagus distention along with LES relaxation. Glucagon can cause nausea and vomiting. Vomiting may dislodge the object but also may increase the risk of esophagus rupture.¹⁶

The present study was done with objective to study aetiopathology and sociodemographic profile of patient with foreign body.

Objectives:

- 1) To analyse aetiology, clinical presentation types of foreign bodies, site of lodgement and methods of removal, outcome of patients with foreign bodies in oesophagus.
- 2) To find out age and sex distribution.
- 3) To assess role of endoscopy in management of foreign bodies.

MATERIAL AND METHODS:

A study was conducted in otolaryngology department of Dr. Vaishampayan Government Medical College and Shri Chatrapati Shiwaji Maharaj, Sarvopachar Rugnalay, Solapur on 48 patients with oesophageal foreign bodies over period of 2 years from August 2020 to August 2022.

The inclusion criteria were patients of either sex, above six months of age, with history of foreign body ingestion and/ or radio-graphic finding of foreign body. The exclusion criteria were, patients in which the foreign body was passed into stomach spontaneously before procedure and patients who were unfit for general anaesthesia. Study was ethically approved from institutional ethics committee and consent of patients was taken before starting history.

A detailed and careful history was taken with special emphasis on the onset and progression of symptoms and duration and nature of foreign body. A detailed examination of the ear, nose, throat, chest and systemic examination was performed out in every case. Preoperative X-ray soft tissue neck, X-ray chest, X-ray abdomen and pelvis were taken as routine procedure. CT scan was done, wherever required. Rigid oesophagoscopy was carried out under general anesthesia in all

the cases .Patients were discharged next day if there was no complication, and followed up visits were done after one week.

Diagnosis of foreign body esophagus is done using clinical evaluation, sometimes imaging studies and endoscopic evaluation. Many patients given clear history of ingestion; those with significant symptoms suggesting complete obstruction advised therapeutic endoscopy. Patients with minimal symptoms and no high-risk factors who are able to swallow normally were observed for resolution of symptoms. Some patients, such as young children, who was not able to give an adequate history of ingestion were advised imaging studies.

Some foreign bodies can be detected with plain x-rays. These x-rays are best for detecting metallic foreign objects and steak bones as well as for detecting signs of perforation. However, fish bones and even some chicken bones, plastic and thin metal objects were difficult to identify on plain x-rays. If there is any suspicion of a foreign body or of intentional or dangerous foreign body ingestion, imaging studies, such as CT, were done. Endoscopic evaluation was required in patients with suspected foreign body ingestions and ongoing symptoms despite negative imaging results.

RESULTS:

Figure 1 & 2 showed the different foreign bodies found in our study.



Fig.1 & 2: Different dangerous foreign body found in study subjects.

The present study includes 48 patients with oesophageal foreign body out of which 58.34%(28) were male and 41.66%(20) were female. Most of the study subjects, I.e. 37.50%(18) were from age group of 0-5yrs, followed by 6-10yrs, 11-30yrs, 30-50yrs and >50yrs were 25.00%,16.67%,12.50% and 08.33% respectively. Important presenting complaints to opd was foreign body sensation(47.91%), dysphagia & drooling (31.25% each) and throat pain(27.90%)(Table

1).

Table 1: Distribution of study subjects according to Sociodemographic profile.

Sociodemographic Characteristics	No. of patients(N=48)	Percentage (Total 100%)
Gender		
Male	28	58.34%
Female	20	41.66%
Age group		
0-5yrs	18	37.50%
6-10yrs	12	25.00%
11-30yrs	8	16.67%
30-50yrs	6	12.50%
>50yrs	4	08.33%
Presenting complaint		
Dysphagia	17	31.25%
Odynophagia	6	12.50%
Throat pain	13	27.90%
Foreign body sensation	23	47.91%
Vomiting	8	16.67%
Tenderness	3	06.25%
Drooling	15	31.25%

Majority of the foreign body were of non-vegetative (83.33%), and was consisting of mostly coin in (28) 58.34% study subjects. Vegetative foreign bodies found in our study were fish bone, chicken bone and mutton bone in 10.42%, 08.33% and 06.25% of study subjects respectively.(Fig.3)

Table 2: Distribution of study subjects according to feature of foreign body in oesophagus.

Feature of foreign body in oesophagus	No. of patients(N=48)	Percentage (100%)
Nature of foreign body		
Vegetative	8	16.67%
Non-vegetative	40	83.33%
Site of foreign bodies		
Cricopharynx	34	70.83%
Mid oesophagus	10	20.84%
Lower oesophagus	4	08.33%

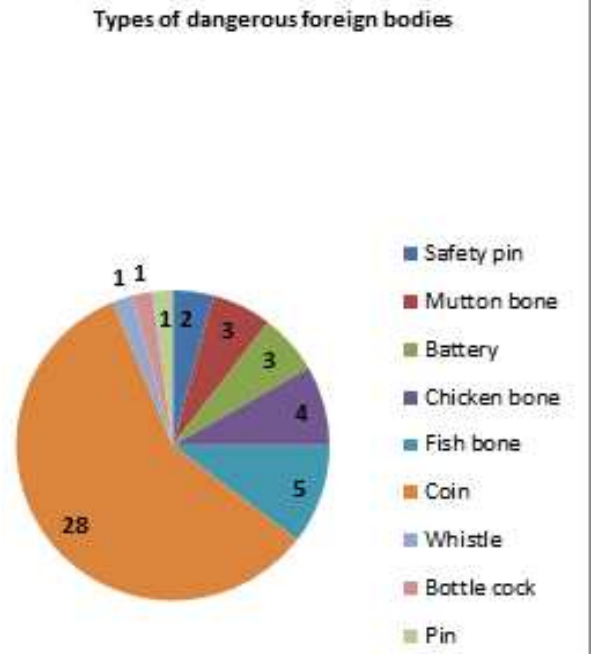


Fig 3:Types of dangerous foreign bodies found in our study.

In 78% study subjects, foreign bodies were removed in 20–40 minutes through rigid oesophagoscopy. Complications occurred in 7 (14.58%) cases. They include mucosal lacerations in 2 and primary hemorrhage in 5 cases. All confirmed oesophageal mucosal injuries were successfully managed conservatively with nasogastric tube feeding and parenteral broad-spectrum antibiotics, such as intravenous ceftriaxone and metronidazole for the first 24 hours.

DISCUSSION:

Foreign bodies in the oesophagus are commonly encountered in emergency otolaryngology practice. The present study includes 48 patients with oesophageal foreign body out of which 58.34%(28) were male and 41.66%(20) were female. In our study, most of the study subjects, I.e. 37.50%(18) were from age group of 0-5yrs, followed by 6-10yrs, 11-30yrs, 30-50yrs and >50yrs were 25.00%,16.67%,12.50% and 08.33% respectively. Important presenting complaints to opd was foreign body sensation(47.91%), dysphagia & drooling (31.25% each) and throat pain(27.90%). Majority of the foreign body were of non-vegetative (83.33%), mostly coin in (28) 58.33%. Vegetative foreign bodies found in our study were fish bone, chicken bone and mutton bone in 10.42%, 08.33% and 06.25% of study subjects.

Similar findings was shown by Muhammad Asif et.al.⁷ in their study where out of 57 patients, 37 (65%) were male while female patients were 20 (35%). The male to female ratio was 1.8:1. The mean age of the patients was 14.60 ± 21.13 (01-78) years. The most frequent age group was of 01-10 years with 30 (52.7 %) patients. Common site of impaction was at or above the cricopharynx (68.5%). The most common foreign body was coin (56%). Also Sharma B.et.al.⁸ in there study, finds that, out of the total of 59 patients, a male predominance was noticed (59.4%). Coins and chicken bone shared the most commonly encountered foreign bodies in their study and Esophagus was the most common site of trapping (49/59).

Different foreign bodies have been described in different studies conducted world-wide. Iseh et al,¹³ and Kay M¹⁴ observed that coin (65.3%) was the commonest foreign body occurring mainly in the paediatric age group followed by bones (17.3%) and meat bolus (8%) in adults. Hussain et al.¹⁵ studied 212 patients with foreign bodies in their hospital and observed that the commonest type of foreign bodies were coins 118 (55.6%) followed by meat bolus 44 (20.75%), dentures 15 (7.07%), fish bone 15 (7.07%), chicken bone 10 (4.7%), battery cell, peach seeds artificial jewelry 2 each (0.94%), marble ball and bone chip 1 each (0.47%). Our results are also similar and consistent with these foreign studies with coin being the most common esophageal foreign body.

Kalra V.et.al⁹ in their study founds that, most common age group affected was 0–5 years. The median age was 5 ± 14.37 years. There was preponderance in males as compared to females The most commonly reported symptom was foreign body sensation (55%) followed by vomiting (54%) and difficulty in swallowing (51%). The most common site of lodgement was just below the cricopharynx (89%). The most common foreign body retrieved in our series were coins (65%). These findings were similar to present study.

The tendency of children at young age to put anything and everything, they can put their hands on in their mouth, combined with incomplete teething and immature neural mechanisms which co-ordinate aspiration and ingestion, and the habit of playing and laughing at the time of eating may be the reason why children are susceptible to foreign body ingestion.¹⁰

In present study, the majority (78%) of foreign bodies were removed in 20–40 minutes through rigid oesophagoscopy. Complications occurred in 7 (14.58%) cases. They include mucosal lacerations and primary hemorrhage. All confirmed oesophageal mucosal injuries were successfully managed conservatively with nasogastric tube feeding and parenteral broad-spectrum antibiotics.

In study done by Sharma B.et.al.⁸, upper endoscopy successfully resolved the problem of foreign body removal in all patients, thus the overall success rate was 100%. No complications or mortalities due to FB ingestion or removal were observed in this study. The majority of foreign bodies (68%) were retrieved in 20–40 min after induction of general anaesthesia and 99% of the patients, Kalra V.et.al⁹ did not encounter any complications.

CONCLUSIONS:

The assessment and management of oesophageal foreign body requires urgent approach, expertise in endoscopy, careful monitoring for early diagnosis of complications. Esophageal foreign bodies are common in children and coin is the most common foreign body ingested. The common site of impaction is at the cricopharynx. Rigid oesophagoscopy remains an easy and safe method for esophageal foreign body removal intrained hands.

Recommendations:

Prevention of foreign body ingestion should be addressed adequately in families in terms of stressing the need of active supervision of children when playing, eating or interacting with objects inadequate to their age.

Conflict of interest: The authors declare "No conflict of interest".

REFERENCES:

1. Smith MT, Wong RKH. Esophageal foreign bod-ies; types and technique for removal. Curr Treat Options Gastroenterol 2006; 9: 75-84.
2. Akhtar M, Haq MI. Management of oesophageal foreign bodies. Professional Med J 2008; 12: 308-11.
3. Sugawa C, Ono H, Taleb M, Lucas CE. Endoscopic management of foreignbodies in the upper gastrointestinal tract: A review. World J GastrointestEndosc 2014;6:475-81.
4. Ekim H. Management of esophageal foreign bod-ies: a report on 26 patients and literature review. Eastern J Med 2010; 15: 21-5.
5. Chang MY, Chang ML, Wu CT. Esophageal perforation caused by fish vertebra ingestion in a seven month old infant demanded surgical intervention: a case report. World J Gastroenterol 2009; 12: 7213-5.
6. Giordano A, Adams G, Boies L, Meyerhoff W. Current management of esophageal foreign bodies. Arch Otolaryngol 1981;107:249-51.
7. Asif M, Haroon T, Khan Z, Muhammad R, Ahmad S, Khan F. Foreign body esophagus: types and site of impaction. Gomal Journal of Medical Sciences. 2013;11(2).
8. Sharma B, Raina S, Sharma N, Sharma R, Grover N, Sood A, Sodhi SS. Endoscopic management of foreign bodies from the upper gastrointestinal tract in the hills of Himachal Pradesh, India: A 5-year tertiary care experience. Journal of Digestive Endoscopy. 2016 Oct;7(04):144-7.
9. Kalra V, Yadav SP, Ranga R, Moudgil H, Mangla A. Epidemiological, clinical and radiological profile of patients with foreign body oesophagus: A prospective study. Indian Journal of Otolaryngology and Head & Neck Surgery. 2021 Apr 19:1-6.
10. Goel HC, Yadav SPS, Kohli GS, Singh J (1989) Oesophageal foreign bodies. Otolaryngology 18:49-52
11. Sinha S, Kumar S, Anshumita A (2016) Upper gastrointestinal tract foreign body in children in India. Int Surg J 3:2046-2049.
12. Shivakumar AM, Naik AS, Prashanth KB, Hongal GF, Chaturvedy G (2006) Foreign bodies in upper digestive tract. Indian J Otolaryngol Head Neck Surg 58:63-68
13. Iseh KR, Oyedepo OB, Aliyu D. Pharyngo-oesophageal foreign bodies: Implications for health care services in Nigeria. Ann African Med 2006; 5: 52-5.
14. Kay M, Wyllie R. Pediatric foreign bodies and their management. Curr Gastroenterol Rep 2005; 7: 212-8.
15. Hussain G, Iqbal M, Ihsanullah, Hussain M, Ali S. Esophageal foreign bodies: an experience with rigid esophagoscope. Gomal J Med Sci 2010; 8: 218-20.
16. BET 1: use of glucagon for oesophageal food bolus impaction. Emerg Med J. 2015 Jan;32(1):85-8.