

PRESENTATION, NATURE, AND OUTCOME OF ESOPHAGEAL FOREIGN BODIES

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Abstract

Objective: To determine the type, presentation, and outcome of esophageal foreign bodies. **Methods:** This cross-sectional study was carried out at the E.N.T department at Liaquat University Hospital, Hyderabad, during 1 year (from March 2021 to February 2022). Individuals of all ages, both genders and with suspected or confirmed esophageal foreign bodies were included. Diagnostic procedures, such as imaging studies and endoscopic examinations, were performed. The primary focus of the investigation was to delineate the prevalence of different types of esophageal foreign bodies, describe their various presentations, and ascertain the associated clinical outcomes. The patients were followed up to one month to note the outcome of foreign body removed. Data was analyzed using SPSS version 26.0. **Results:** A total of 288 patients were studied, their mean age was 21.89 ± 19.18 year. Males were 51.7% and females were 48.3%. Most of the patients 57.6% were urban resident and 42.4% were rural resident. In most of the cases having foreign body ingestion were presented with the chief complain of pain and discomfort 57%, difficulty in swallowing 31% and pain on swallowing 12%. On the rigid esophagoscopy foreign body ingestions were followed as most common site of foreign body impaction was upper esophagus (cricopharynx) 71.5%, middle esophagus 27% and there was no any foreign body in 1.5%. In terms of foreign body types coin was 40%, food bolus/meat bone 35% and tooth denture, battery cells, bettlenut, wood stick, fish thorn were 25%. According to age children had coin ingestion as most common ingestion 40% and adults had meat bone/ food bolus impaction 30%. On the patient's distribution according to complications, the most of the cases had injury to the foreign body impaction site 73.3, injury to teeth 11.7% bleeding (minor) 10% and had esophageal stricture/web found accidentally 5%. **Conclusion:** Esophageal Foreign bodies were mostly presented with discomfort in throat, difficulty in swallowing and pain in throat. Coin, food bolus, button and meat bones were the commonest type. Injury to impaction site, teeth, bleeding(minor) were observed to the commonest complications and esophageal stricture/web were found in sequel of previous history of oesophagoscope, while no mortality found and all the patients were recovered and on stable condition were discharged from the ward.

Keywords: Esophageal Foreign Body, Type, Presentation, Complications.

INTRODUCTION

The esophagus, or food tube, is a muscular tube that runs from the lower throat to the stomach. Beginning at the sixth cervical vertebra (the inferior boundary of the cricoid cartilage) and ending at the eleventh thoracic vertebra (the stomach's cardiac opening), it runs the entire length of the body. Foreign body ingestion is a common problem faced by otorhinolaryngologists and a frequent reason for esophagoscopy.¹ there are two types of foreign bodies i-e organic and inorganic. Inorganic foreign bodies ingestion is more common in children and also persons with mental impairment due to substance or alcohol addiction, dementia, or psychiatric condition, and inmates seeking a secondary income are also at risk.² Inorganic foreign bodies are like coins which are the objects most commonly ingested by children.

Others are small toys, keys, battery cells, crayons, marbles, stones, and, sharp/pointed objects like pins.³⁻⁴ Organic foreign bodies are more common in adults especially at old age like solid food bolus and slippage of artificial dentures. Wearing dentures can diminish oral tactile sensitivity, increasing the risk of eating bolus impaction for adults. While any solid food has the potential to cause a blockage, meat bones are the most common cause of impactions. "Ingested pills that lodge in the esophagus may result in caustic injury."⁵

Although 80% to 90% of ingested foreign bodies that reach the mid esophagus will pass uneventfully without any surgical intervention, these foreign bodies scratch the esophagus but do not become lodged. In such cases, patients may report a foreign body sensation even though no foreign body is present. The remainder may become lodged in the upper esophagus, placing the patient at risk for the development of complications such as difficulty in swallowing which is the most common symptom, pain in the throat, throat discomfort, and respiratory distress, difficulty in swallowing is either moderate or absolute. Patients with total obstruction of the esophagus may experience hyper-salivation because unable to swallow their saliva. Bones and other pointed objects will sometimes cause the mucosal injury that results in a persistent foreign body sensation even after the object has been extracted or passed spontaneously.⁶ The true incidence and overall mortality rate from ingested foreign objects are unknown, but deaths have been reported rarely when large foreign bodies compressing the airway. The management of objects impacted in the esophagus is influenced by several key factors, including the type of object and its physical characteristics i-e site, nature, age of the patient, and associated medical conditions; time elapsed since ingestion; and evidence of complications such as surgical emphysema or perforation.⁷

Approximately 5% of patients with esophageal foreign bodies will present with airway obstruction. Respiratory symptoms include stridor, choking, and coughing which are more common in children than adults. Foreign body obstruction should also be considered in infants and toddlers if they present with such symptoms such as excessive drooling, refusal to feed, unexplained gagging, or chronic aspiration".⁸ It can be difficult to get a complete ingestion history from some patients, especially those who are too young, too intellectually handicapped, too old, or who have a mental disorder. Individuals in this category may exhibit symptoms such as choking, unwillingness to eat, nausea, dribbling, coughing, blood-stained saliva, or breathing difficulties.

"Imaging studies also may be needed in these patients. Imaging studies i-e x-rays are best for detecting metallic foreign objects and steak bones as well as for detecting signs of perforation (eg, free air in the mediastinum or peritoneum).⁹ However, fish bones and even some chicken bones, plastic, glass, and thin metal objects can be difficult to identify on plain x-rays, and also contrast x-rays (either barium or gastrographin). So esophagoscopy evaluation is typically required in these patients with suspected foreign body ingestions and ongoing symptoms despite negative imaging results.¹⁰

However many patients give a clear history of foreign body ingestion, those with significant symptoms suggesting complete esophageal obstruction should have immediate therapeutic rigid esophagoscopy for removal of foreign bodies".¹¹ This study has been done to determine the presentation, nature, and outcome of esophageal foreign bodies in terms of haemorrhage, esophageal perforation, esophageal stricture/web, injury to pharyngeal mucosa, injury to teeth and lips, tracheoesophageal fistula, post-operative pain and hospital stay.

MATERIALS AND METHODS

This cross-sectional study was carried out at the E.N.T department at Liaquat University Hospital, Hyderabad. Study was done during 1 year (from March 2021 to February 2022). The study involved the enrollment of a representative sample from a diverse patient population, comprising individuals of all ages and demographics who presented to a designated healthcare facility during the study period with suspected or confirmed cases of esophageal foreign body ingestion.

Cases with foreign bodies lodged in anatomical locations other than the esophagus, patients with pre-existing esophageal abnormalities (e.g., strictures, tumors) unrelated to foreign body ingestion and those who did not agreeing to participate in the study were excluded. Individuals meeting the eligibility criteria were interviewed (in case of minors, the research questions were directed towards the guardians with due written consent using a structured pre-designed proforma.

Detailed clinical data, including presenting symptoms such as dysphagia, chest pain, drooling, coughing, and respiratory distress, were collected through standardized interviews and medical record reviews. Diagnostic procedures, such as imaging studies and endoscopic examinations, were performed as part of routine clinical care and were included in the analysis. The primary focus of the investigation was to delineate the prevalence of different types of esophageal foreign bodies, describe their various presentations, and ascertain the associated clinical outcomes. The patients were followed up to one month to note the outcome of foreign body removed. Data was analyzed using Microsoft Excel 2016 and SPSS v. 21.0.

RESULTS

A total of 288 patients were included in the study. The mean age was 21.89 years, with a standard deviation of ± 19.18 years, ranging from a minimum of 3 years to a maximum of 75 years. Out of all the patients, 51.7% were males, and 48.3% were females, as detailed in Table 1.

Regarding residency, 57.6% of the patients were urban residents, while 42.4% were rural residents. In terms of socioeconomic status, 24.3% of the subjects were classified as poor, 71.5% as middle-class, and only 4.2% were found with upper class. The employment status distribution revealed that 78% of the cases were unemployed, while 22% were employed. Table 1

Among the patients with foreign body ingestion, 57% presented with the chief complaint of pain and discomfort, 31% reported difficulty in swallowing, and 12% experienced pain on swallowing.

Rigid esophagoscopy revealed that the most common site of foreign body impaction was the upper esophagus (cricopharynx) at 71.5%, followed by the middle esophagus at 27%, and no foreign body was found in 1.5% of cases.

Concerning the nature of foreign body ingestion, 40% involved coins, 35% were related to food bolus/meat bone, and 25% included tooth dentures, battery cells, betelnut, wood sticks, and fish thorns. Age-wise, children had coin ingestion as the most common type at 40%, while adults predominantly experienced meat bone/food bolus impaction at 30%. Table.2

Analyzing complications, the majority of cases (73.3%) presented with injury to the foreign body impaction site, followed by 11.7% with injury to teeth, 10% with minor bleeding, and 5% with accidentally discovered esophageal stricture/web (Table 3).

Table 1: Patients Distribution According to Gender n=288

Variables		Frequency	Percent
Gender	Male	149	51.7
	Female	139	48.3
Residence	Rural	122	42.4
	Urban	166	57.6
Educational status	Uneducated	183	63.5
	Primary	45	15.6
	Secondary	58	20.1
	Higher	02	0.7
Occupational status	Employed	63	22
	Un-employed	225	78

Table 2: Patients Distribution According to Presentation, Diagnosis and Nature of Foreign Bodies n=288

Variables		Frequency	Percent
Presentation	Pain in throat and discomfort in throat	164	57
	Difficulty in swallowing	90	31
	Pain on swallowing	34	12
	Total	288	100.0
Diagnosis	Upper esophagus (cricopharynx)	206	71.5
	Middle esophagus	78	27
	No foreign body	4	1.5
	Total	288	100.0
Nature of foreign body ingestion	Coin	115	40
	Food bolus/meat bone	97	33.5
	Tooth denture, battery cells, battle nut, wood stick, fish thorn	72	25
	No foreign body	4	1.5
	Total	288	100.0

Table 3: Patients Distribution According to Complications n=288

Variables		Frequency	Percent
Complication	Injury to impaction site	211	73.3
	Injury to lip and teeth	34	11.7
	Bleeding (minor)	29	10
	Esophageal stricture/web	14	5
	Tracheoesophageal fistula	0	0
	Total	288	100.0

DISCUSSION

Rigid esophagoscopy stands as a widely conducted surgical procedure carried out by surgeons globally. It continues to be a valuable and secure method for addressing esophageal foreign bodies.¹³ The vast majority of the cases of rigid esophagoscopy that were included in our research were emergent procedures that were performed for diagnostic or therapeutic reasons. These findings aligns with a study conducted in Osun State, Nigeria, where all instances of rigid esophagoscopy were

performed as emergency procedures. Nonetheless, according to the findings of another study, less than 15% of instances involving rigid esophagoscopy were performed as an emergency procedure.^{14,15} In the study of Athanassiadi et al¹⁶ showed the average age of patient was 19 years with peak age of 69 years and youngest age is 3years. In our study male to female ratio was 1.2:1 which is similar to international study.

In the study of Al Qudah et al¹⁵ the most common foreign body found is meat bone, food bolus and battery cell which is contrast to our study, while in regional study the most common foreign body is coin which is similar to our research. In the study of Pudar G,¹⁸ the level at which a foreign body was most commonly found was pharyngoesophageal junction (upper esophagus), and then at the level of middle constriction of oesophagus, which is similar to our research. In our study most common presentation was discomfort in throat, difficulty in swallowing and pain in throat which are similar to other studies which have been conducted. In the study of Asif M et al¹³ the most common pain in throat, difficulty in swallowing and discomfort in throat which was contrast to our study. In our study the most common complication was impaction site injury followed by injury to teeth which is similar to the other studies, while in international study of Lee JH et al¹⁴ showed the oesophageal perforation was common complication found.

CONCLUSION

As per study conclusion Esophageal Foreign bodies were mostly presented with discomfort in throat, difficulty in swallowing and pain in throat. Coin, food bolus, button and meat bones were the commonest type. Injury to impaction site, teeth, bleeding(minor) were observed to the commonest complications and esophageal stricture/web were found in sequel of previous history of oesophagoscopy, while no mortality found and all the patients were recovered and on stable condition were discharged from the ward.

We recommend the use of the rigid endoscope as the instrument of choice for extracting foreign bodies from the esophagus. Otorhinologogist Surgeons in training should be taught rigid esophagoscopy”.

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