

Incidence of Esophageal Foreign Body and its Complication at Tertiary Care Hospital

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ABSTRACT

OBJECTIVE: The aim of this research is to investigate the types of foreign body ingestion in esophagus and its complications in tertiary care hospital.

Setting and duration: This study was carried out in department of E.N.T and Head and Neck surgery Abbasi Shaheed Hospital from 3rd February 2016 to 30th September 2021.

METHODOLOGY: During this period, 305 patients, who fulfilled the inclusion and exclusion criteria were selected for this study.

RESULTS: Male were 177 (58%) and male to female ratio was 1.3:1. One hundred and sixty-two (53%) patients came with the complaint of foreign body in esophagus were between the ages of 0-10 years followed by 11-20 years of age in 35 (11.4%) cases. Commonest site of foreign body impaction was cricopharynx, noted in 59% patients. Commonest foreign body in esophagus was coin in 122 (40%) cases followed by meat bolus in 34 (11%) and bone chip in 33 (10.8%) patients. Below 10 years of age, the most common foreign body was coin found in 110 (36%) patients. Above 71 years, denture found in 16 (5.24%) patients. The overall incidence of complications was noted 5.5%. The most common complication was bruise over esophagous mucosa, found in 13 (4.2%) patients. In 2 cases (0.6%) mucosal tear was noted in cervical part of esophagus. In two cases patient developed perforation in esophagus.

CONCLUSION: Esophageal foreign body is very common in ENT practice especially in children. Foreign body should be removed as earliest as possible to prevent complications.

Key Words: Complications, esophagoscopy, foreign body in esophagus

INTRODUCTION: The esophagus is a fibromuscular tube which is about 25 cm extends from the cricopharynx to stomach. Narrowest part of esophagus is cricopharynx. It is the most common site of foreign body impaction. It is 15 cm away from the upper incisor teeth¹. Ingestion of foreign body in esophagus is defined as any object from outside the body into the gastrointestinal tract (GIT) via mouth. It may be accident or intentionally². After ear and nose foreign body in esophagus is the third most common site of foreign body impaction³.

Esophageal foreign body is a major clinical problem in ENT practice particularly in children⁴ because children want to explore things with their mouth but adults are also the victim. Foreign body ingestion seen in psychiatric patients, edentulous patients and accidentally ingestion of foreign body⁵. Ingested foreign body depends on age, custom, food, geographic location and eating habits⁶. Mostly foreign body pass spontaneously through gastro-intestinal tract without impaction and require no intervention^{7,8}. Only 10–20% of patients require removal⁹.

Coins found to be the commonest foreign body impacted in infants and children, other foreign bodies include marbles, batteries, buttons, bottle tops, seed and toys. In adults fish bone, metallic pins and wires have been reported as impacted foreign body. Impaction of sharp foreign body may cause serious complications which may be fatal. Diagnosis of foreign body is made on history, clinical examination and radiological investigation¹⁰. Common presentation of foreign body impaction include dysphagia, odynophagia, drooling, gagging

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and vomiting. Late presentation of foreign body impaction may also include fever, chest pain, and coughing, wheezing, upper respiratory tract infection. To identify the radiopaque foreign body in pharyngo-esophagus, radiological imaging is the gold standard investigation¹¹. In X-ray, radio-opaque foreign body is usually detected easily, other abnormal finding include swelling of prevertebral soft tissue, air trap in esophageal lumen¹², shift of trachea or loss of normal lordosis.

Prolong impacted foreign body will cause local inflammation which leads to fibrosis and formation of stricture. Laceration also may occur during removal of sharp objects which causes bleeding and perforation¹³. Other complications includes compression of laryngo-tracheal airway, leading to airway emergency¹⁰, perforation of esophagus, retropharyngeal abscess, and mediastinal abscess¹⁴. To prevent hazardous complications, it is necessary to remove the foreign body at the earliest opportunity¹⁵. The aim of this research is to investigate the type of foreign bodies' ingestion in esophagus and its complications in tertiary care hospital.

METHODOLOGY: This prospective study was carried out in otorhinolaryngology department of Abbasi Shaheed Hospital and Karachi Medical and Dental College from 3rd February 2016 to 30th September 2021. Patients came with history of foreign body ingestion during this period, after taking written consent were enrolled for the study. Patients who had history of corrosive ingestion (symptoms may be intermixed), oropharyngeal growth or history of psychiatric illness were excluded. Total 305 patients were selected for this study. A detail proforma was designed in which detail history was taken regarding ingestion of foreign body, type of foreign body and duration of ingested foreign body. Complete ENT examination was carried out and findings were noted. Plain radiological investigation was carried out like AP and lateral view x-rays of neck and opinion was taken from radiologist.

Baseline investigations were done in all patients. Before rigid esophagoscopy, x-rays was repeated to confirm the foreign body. Rigid esophagoscopy was performed by Otolaryngologist and any positive findings found during the procedure were noted in the proforma. Patient was admitted in ward for 24 hours after rigid esophagoscopy. If there was no complication, then patient was discharged after for 24 hours.

RESULTS: During five years study, 305 patients were selected for the study. In this study, male were 177 (58%) and female were 128 (41.9%). Male to female ratio was 1.3:1. Highest incidence of foreign body impacted in pharyngo-esophagus was noted between the ages of 0-10 years in 162 (53%) patients followed by 11-20 years of age in 35 (11.4%) cases. Seventeen (5.57%) patients were above the age of 81 years. Commonest site of foreign body impaction was cricopharynx in 59% patients. Commonest foreign body was coin found in 122 (40%) cases followed by meat bolus in 34 (11%) patients and bone chip in 33 (10.8%) patients. Dentures were found in 16 (5.2%) patients. Above 71 years denture was the commonest foreign body in esophagus which was found in 16 patients (5.24%). The incidence of complications was noted in 17 (5.5%) patients. Most common complication was bruise over esophagus mucosa, found in 13 (4.2%) patients while mucosal tear in 2 cases (0.6 %) and esophageal perforation was noted in 2 (0.6%) patients.

Table 1: Incidence of Foreign Body

Type of Foreign Body	No. of Patients	Percentage (%)
Coin	122	40
Safety pin	11	3.6
Battery	9	2.9
Toy	24	7.8
Ear ring	17	5.5
Hair pin	20	6.5
Fish bone	18	5.9
Beef/Chicken/Mutton bone	34	11
Meat bolus	34	11
Denture	16	5.2
Total	305	100

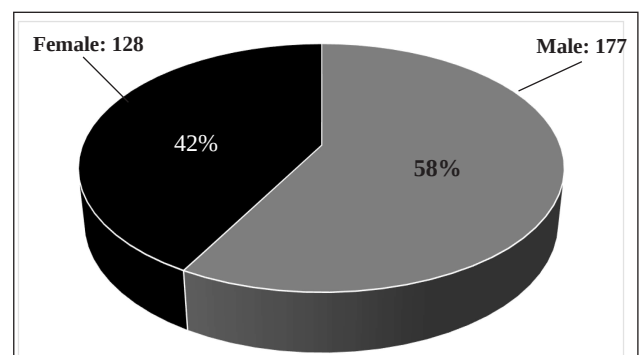


Figure 1: Gender

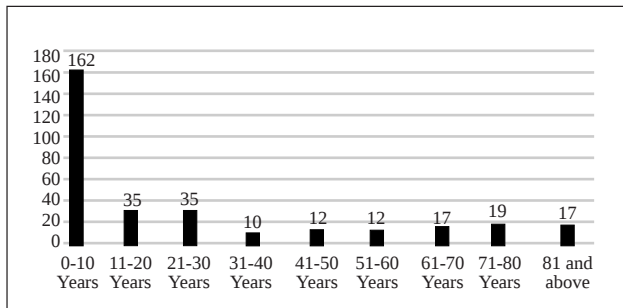


Figure 2: Age Incidence

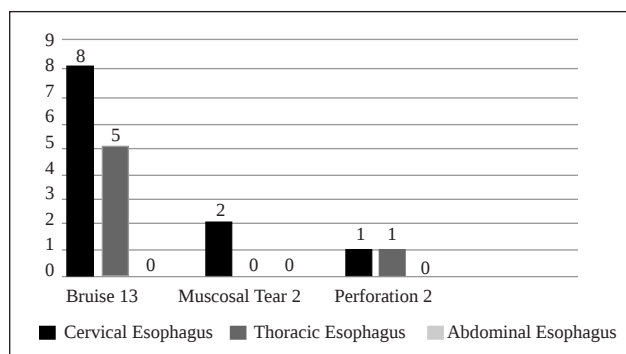


Figure 3: Incidence of Complication Due to Foreign Body

Table 2: Foreign Body According to Age Group

Age in Years	Common Foreign Body According of Age	No. of Patients	Percentage (%)
0-10	Coin	110	36
11-20	Coin	12	3.9
21-30	Meat bolus	6	1.9
31-40	Ear ring	4	1.3
41-50	Meat bolus	5	1.6
51-60	Meat bolus	8	2.62
61-70	Meat bolus	8	2.62
71-80	Denture	9	2.9
81 & above	Denture	7	2.2

DISCUSSION: Foreign body in esophagus is the major concern in ENT practice. Foreign body ingestion depends on the age of the patient. Children usually swallowed coins and toys while adults mostly came with impaction of meat bolus.¹⁶ After ear and nose, esophagus is the third most common site of foreign body impaction.¹⁷ The morbidity and mortality rate is high and estimated about 1,500 to 1,600 patients die every year due to foreign body ingestion and its

complications. Undiagnosed foreign body or delay in diagnosis may cause complications like perforation of esophagus. To prevent complications foreign body should be removed as early as possible.¹⁸ Rigid esophagoscopy is the gold standard method to remove the foreign body, other methods includes dislodgment by a Foley catheter, balloon extraction and advancement with bougie.

In current study, 305 patients were selected for this study. Male were 177 (58%) and female were 128 (41.9%). Male to female ratio was 1.3:1. In another study, 62.7% were males and female were 37.3%¹⁰ which is very close to the current study. Another study also showed male to female ratio of foreign body ingestion is 1.15:1.¹⁹ The incidence rate of foreign body impaction was high in below 10 years of age. One hundred and sixty-two (53.11%) patients came under 10 years of age. One study showed, 80% of the ingested foreign body occur in children because children have habit to put any object in oral cavity, nose or ear.⁵ According to Sajida et.al study, 66 % patients are below 10 years of age came with foreign body impaction in esophagus.²⁰ Hussain et al study are also quoted, 60% of patients are below 10 years age.²¹ The frequency of foreign body in esophagus is more in children than adult because the children have habit to put new objects into mouth and chewing skills is poor, smaller diameter of esophagus and weaker esophageal motility. Always keep small or sharp objects out of reach children, supervise children during eating or playing, teach them not to put anything in their mouth. In current study, 59% foreign body impact in cricopharynx. One study showed, about 70% of foreign body impactions are seen in cricopharynx.²² In current study, majority of the patients came with history of coin ingestion, 122 (40%) patients came with coin ingestion followed by meat bolus in 34 patients (11%) and bone chip in 33 patients (10.8%). According Ekim H and Kay M, coin is the commonest foreign body in the pediatric age group followed by bones chips and meat bolus in adults.^{23,24} The incidence of coin ingestion is higher in children below 10 years, which was observed in 110 (36%) cases. In adult age group meat bolus was common. In above study meat bolus was found in 21 (6.8%) patients in adult population while 71 years and above denture was found in 16 (5.2%) patients. In Tahira Sajid study, the incidence of meat bolus impaction was 8% in adults and 4% denture were found in old age which is closed to current study results²⁰.

In our study, in 13 patients (4.2%) bruise over esophagus mucosa was noted during the removal of foreign body while mucosal tear was noted in 2 cases (0.6%). Two (0.6%) cases, developed esophageal perforation. Overall incidence of gastrointestinal perforation due to foreign body ingestion is less than 1%. All above complications were due to sharp object and managed conservatively. Overall complication was found in 17 patients (5.5%). Different study shows overall success rate of foreign body removal is 98.7%.^{10,26} Early diagnosis and early treatment may prevent complications. Chances of complications is about 1-5% if removal of foreign bodies have been delayed.^{27,28}

Conclusion: Most of the patients were children. To prevent this problem in children, always keep small or sharp objects out of children reach, supervise children during eating or playing, and teach them not to put anything in their mouth. Adults use proper fitted dentures, never put safety pin or hair pin in mouth. Complications rate is very low but may be fatal. Early diagnosis and proper management can prevent unnecessary complications.

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