ORIGINAL ARTICLE

FOREIGN BODY ESOPHAGUS:TYPES AND SITE OF IMPACTION

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ABSTRACT

Background: One third of foreign bodies retained in the gastrointestinal tract are present in the esophagus. Their management depends on the anatomic location, shape and size of the foreign body and duration of impaction. The objectives of this study were to determine the age and gender distribution, and site of impaction and type of esophageal foreign bodies in patients reporting with foreign body ingestion.

Material & Methods: This was a descriptive study conducted at the ENT Department, Ayub Medical College, Abbottabad, from June 2012 to October 2012. A total of 57 patients were included in the study presenting with foreign body ingestion that underwent esophagoscopy under general anesthesia. The site of impaction and type of foreign body were noted.

Results: 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%).

Conclusion: Pain and wound hematoma were the two most common complications in mesh repair in the immediate postoperative period. In the majority of cases right sided, indirect, primary inguinal was recorded.

KEY WORDS: Foreign body esophagus; Esophagoscopy.

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INTRODUCTION

Foreign body (FB) ingestions and esophageal food bolus impactions are common problems faced by physicians and are frequent reasons for urgent endoscopy.[1] Foreign body ingestion is a commonly encountered problem in both children and adults in emergency departments.[2,8] After nose and ear, the esophagus is the commonest site for foreign body impaction.[2] Eighty percent of impacted foreign objects are held up at cricopharynx.[3] Annual incidence of foreign body ingestion is 13 episodes per 100,000 population.[5] The majority of foreign objects ingestions occur in pediatric population with a peak incidence between six months and six years of age while in adults true foreign object ingestion commonly occurs among those with psychiatric disorders, mental retardation or impairment caused by alcohol and old age.[4] In the general population, the most common ingested foreign bodies in children are coins but meat bone, marbles, safety pins, hair clips, batteries and screws are also reported while impacted meat or other types of food bolus, fish bone and dentures are common in adults.[4,6,7]

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Although most foreign objects are passed spontaneously, 10-20% of these patients need treatment and approximately 1% will require surgery.[4] Patients with esophageal foreign bodies require prompt diagnosis and therapy.[9] 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.[10]

Postero-anterior, and lateral cervical and chest radiographs are basic radiological methods of FB detection. Since most foreign bodies are radiolucent, hence for non-opaque objects, indirect findings such as larynx and tracheal deviation, as well as computerized tomography, can add in the diagnosis.[3,8] Rigid esophagoscopy under general anesthesia remains the effective and safe method of removal of foreign bodies oesophagus.[2] Endoscopic treatment is a

reliable and safe procedure in expert hands with a high success rate and low morbidity and mortality.[5]

The objectives of this study were to determine the age and gender distribution, and site of impaction and type of esophageal foreign bodies in patients reporting with foreign body ingestion.

MATERIAL AND METHODS

This cross-sectional study was conducted at the ENT Department, Ayub Medical College, Abbotabad, Pakistan, from June 2012 to October 2012. Informed consent was obtained from all patients prior to procedure. The inclusion criteria were patients of either sex above six months of age, with definite history of foreign body ingestion and/ or radiographic finding of foreign body. The exclusion criteria were patients with vague history of foreign body ingestion, patients in which the foreign body was passed into stomach spontaneously before procedure and patients who were unfit for general anesthesia.

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 ENT and systemic examination was carried out in every case. Baseline investigations like viral profile, Hb, bleeding time and clotting time were done in all patients. Radiographs in antero-posterior and lateral view were taken. Before general anesthesia, x-rays was repeated to confirm the foreign body. If it was passed through esophagus into stomach, patient was dropped from the study. Esophagoscopy was performed by experienced Otolaryngologist/ Head and Neck surgeon using rigid esophagoscopy and findings were recorded in the proforma. Patients were discharged next day if there was no complication, and followed up after one week.

Demographic variables were gender, age in years and age grouping. Age categorization was as follows; 0-10, 11-20, 21-30, and more than 30 years. The site of impaction and type of foreign body were the research variables. Data was collected on a proforma and analyzed by SPSS version 11 (SPSS Inc., Chicago, IL, USA). Quantitative data were analyzed for mean, SD, and range. Qualitative data were analyzed for frequency and percentage.

RESULTS

A total of 57 patients were included in the study. There were 37 (65%) male patients while female patients were 20 (35%) in the study. 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. (Table 1)

The site of the foreign body impaction was at the level of cricopharyngeal sphincter in 39 (68.5%) while below cricopharyngeal sphincter in 18 (31.5%) patients. The mean distance of FB impaction from upper incisor was 21.23 ± 5.69 cm. The most common type of FB was coin in 32 patients (56%), followed by other objects (Figure 1). All foreign bodies were removed through rigid esophagoscopy.

Table 1: Age grouping of patients with FB esophagus

Age group	Frequency	Percentage
00-10 years	30	52.7%
11-20 years	08	14.1%
21-30 years	05	08.7%
> 30 years	14	24.5%
Total	57	100 %

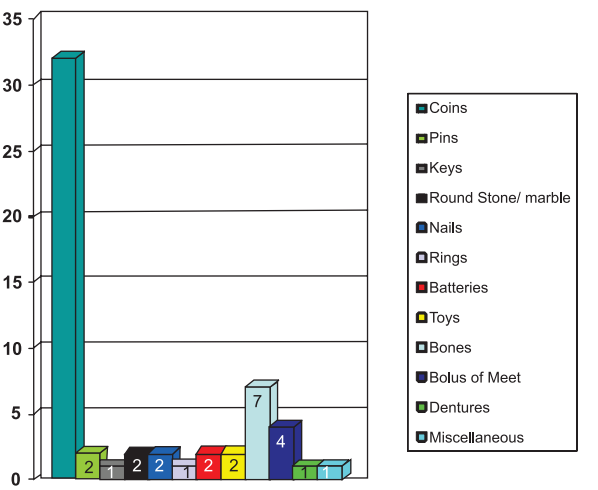

Fig. 1: Distribution of type of esophageal foreign body (n=57)

DISCUSSION

Foreign body ingestion is a commonly encountered problem in both children and adults in emergency departments.[2,8] After nose and ear, esophagus is the commonest site for foreign body impaction.[2] Impaction of a foreign body in the esophagus causes edema of the mucosa, and the esophageal wall becomes weakened. Retention leads to perforation, which is only a matter of time. Therefore, all foreign bodies retained in the esophagus should be removed as soon as diagnosed.[11,12] Besides history and physical examination, radiological examination is a very important diagnostic tool to identify the foreign body and its location.[13] Radiolucent objects will require direct visualization or contrast radiographs for location specification.[14] Many alternative methods for removal of foreign bodies have been described in the literature, such as dislodgment by a Foley catheter, advancement with bougie, papain or carbonated fluid treatment, glucagon therapy, balloon extraction

during fluoroscopy but rigid endoscopy remains the gold standard treatment.[13]

Majority of the patients in our study who ingested the foreign bodies were below 10 years i.e. 30 (52.7), which is consistent with other studies in the world. In a study by Hussain et al, 60% of the patients in their study were of less than 10 years age.[15] In a study by Saki et al, it was observed that sixty five percent of patients were four years or less in age at the time of admission.[16] The mean age of the patients in our study was 14.60 ± 21.13 years (range 01-78). In a study by Gilyoma et al, this was observed that the mean age was 7.04 ± 14.62 years (range 01-63).[17] Patients aged ten years and below were the majority and accounted for 88.8%. The results of the above studies suggest that majority of the patients with ingested foreign bodies in esophagus are children. This can be explained by the explorative nature of the children.

There were 65% male and 35% female patients in our study and the male to female ratio was 1.8:1. Hussain et al, observed that 63% were males and 38% were female patients in their study.[15] In a study by Gilyoma et al, males outnumbered females by a ratio of 1.1:1.[17] Similarly larger male population was observed in study by Iseh et al with 66.7% male and 33.3% female patients.[18] Like our study, most of the studies confirm that foreign bodies are common among males.

In our study, the site of the foreign bodies was at the level of cricopharyngeal sphincter in 39 (68.5%) out of 57. Little et al observed that most of the foreign bodies were lodged in the superior esophagus in 73% which is comparable with our study.[19]

Different foreign bodies have been described in different studies. Iseh et al,[18] Ekim H[9] and Kay M[21] 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. Meat bolus was the only impacted foreign body amongst the elderly patients aged between 70-90 years. Gilyoma et al,[17] Hussain et al,[15] studied 212 patients with aerodigestive tract foreign bodies in a teaching hospital and observed that the commonest type of foreign bodies in airways was groundnuts (72.7%) and in esophagus was coins (72.7%). The trachea (52.2%) was the most common site of foreign body's lodgment in the airways. Coins (55.6%) were the most common foreign bodies followed by meat bolus (20.75%), dentures (7.07%), fish bone (7.07%), chicken bone (4.7%), battery cell, peach seeds, artificial jewelry each (0.94%), marble ball and bone chip each (0.47%). Our results are also consistent with these studies with coin being the most common esophageal foreign body in pediatric age group.

In our study, all foreign bodies esophagus were removed by rigid endoscopy. Hussain et al[15] documented that foreign body were removed spontaneously in 4.08% patients, and rigid endoscopy with forceps removal under general anesthesia was the main treatment modality performed in 87.8% of patients while in the study of Gilyoma et al,[17] and Ekim H[9] the foreign bodies were successfully removed without complications in 90.8% of cases. Saki et al,[16] reported foreign body esophagus in 240 patients and endoscopic treatment was offered in 93.2% patients and surgery in 8.3% patients. So, like our study, the mainstay of the treatment in most of the studies is rigid endoscopy. Although the overall incidence of gastrointestinal perforation due to foreign body ingestion is less than 1%, sharp and pointed objects resulting in perforation, rates up to 35 %.[20,21] In our study no esophageal perforation was reported.

CONCLUSION

Esophageal foreign bodies are common in children and coin is the most common foreign body ingested. The common site of impaction is at the cricopharyngeal sphincter. Rigid esophagoscopy remains an easy and safe method for esophageal foreign body removal.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
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None declared.