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Original Research Article

Esophageal foreign bodies: our experience

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ABSTRACT

Background: The objective of this prospective study was to report our experience of presentation and management of esophageal foreign bodies at GMC Doda.
Methods: This prospective study was conducted in the department of ENT at GMC Doda from January 2019 to October 2022. During this time period 43 patients of foreign body ingestion were admitted in the department of ENT. Of the 43 patients 27 were male and 16 were female patients. 34 were children and 9 patients were adults. After doing through examination, plain radiograph was done on admission in all patients. Age appropiate rigid endoscope was used for foreign body extraction under general anaesthesia.
Results: In children the coin was the most common type of foreign body (28 patients, 82.3%), with about 39% managed conservatively after overnight observation,as the coin passed on spontaneously. In adults chicken bone was the most common type of foreign body (5 patients, 55%). Upper esophagus (cricopharynx) was the most common site of foreign body impaction in both adults and pediatric patients. Rigid endoscope was used in all patients requiring intervention.
Conclusions: Our study suggests that pediatric patients have higher incidence of foreign body ingestion as compared to adults. Management depends on the type of foreign body ingested as many can pass on spontaneously without requiring any invasive intervention. Also the rigid endoscope is a safe, effective and cheaper instrument that is used for removal of foreign body from esophagus.

Keywords: Esophagoscopy, Cricopharynx, Perforation, Inert

INTRODUCTION

Foreign body ingestion is one of the commonest ENT emergency, commonly affecting pediatric age group, edentulous adults and patients of psychiatric disorder.[1-4] The management is determined by the type of foreign body ingested, with sharp edged foreign bodies and lithium batteries requiring early removal as complications can be fatal.[5,6] Esophagoscopy and foreign body extraction can be emergent, urgent or non- urgent.[5] The procedure is performed under general anaesthesia using rigid esophagoscope, as the latter is cheaper instrument and more efficient then flexible endoscope in removing foreign body.[7-10]

The objective of this study was to report our experience of the presentation and management options in patients presenting with the history of foreign body ingestion.

METHODS

This prospective study was conducted in the department of ENT at GMC Doda from January 2019 to October 2022.

Inclusion criteria

All Patients presenting to the emergency department of GMC Doda with history of foreign body ingestion were included in this study.

Exclusion criteria

Patients with known history of esophageal disorders like CA esophagus, stricture, achalasia cardia, etc were excluded from this study.

During this time period 43 patients of foreign body ingestion were admitted in the department of ENT at GMC Doda. Of the 43 patients 27 were male and 16 were female (mean age 33.5±29.37; range 1.5 to 73 years). Of all the patients 34 were children (25 male, 9 female; mean age 5.4 years; range 1.5 to 11years) and 9 patients were adults (2 male, 7 female; mean age 49.4 years; range 24 to 73 years).

All the patients were subjected to through general and ENT examination. Plain radiograph was done on admission in all patients and 5 minutes prior in patients undergoing esophagoscopy.

Computerized tomography scan was advised in patient who were suspected of having mid esophageal or lower esophageal foreign bodies. Overnight observation followed by repeat radiograph was done in patients with history of inert foreign body ingestion (coin). Age appropiate rigid endoscope was used for foreign body extraction under general anaesthesia.

All endoscopies were done without any complications and patients were discharged on the first post-operative day.

Data was analysed using MedCalc Version 15.8.

The ethical approval was sought from institutional ethics committee.

RESULTS

A total of 34 children (Table 1) presented with foreign body ingestion, with coin being the most common type of foreign body (28 patients, 82.3%) (Table 2).

Of these 28 children who presented with coin ingestion only 17 patients required rigid endoscopy as in 11 patients the coin passed on spontaneously after overnight waiting. 9 adults presented with foreign body ingestion (Table 1), chicken bone being the most common type (5 patients, 55.5%) (Table 3).

The most common site of foreign body impaction was cricopharynx both in peadiatric patients (85.2%) and in adults (66.6%) (Table 4).

The duration of foreign body in the digestive tract varied from 2 hours to 1 week.

Table 1: Demographic data of patients.

Age group (years)		Sex	
Range	**Mean age**	**Male**	**Female**
1.5 to 11	33.5±29.37	27	16
24 to 73	49.4	7	2

Table 2: Foreign body in pediatric patients.

Types	N	%
Coin	28	82.3
Lithium battery	2	5.8
Sharp metal objects	1	2.9
Plastic parts of toys	2	5.8
Nuts/cherry/plum	1	2.9

Table 3: Foreign body in adult patients.

Types	N	%
Chicken bone	5	55.5
Denture	2	22.2
Sharp metal objects	1	11.1
Meat	1	11.1

Table 4: Site of impaction of foreign body (Fischer exact test).

Site of foreign body in esophagus	Adult		Children		
	N	**%**	**N**	**%**	**P**
Upper	6	66.6	29	85.2	0.057
Mid	2	22.2	3	8.8	0.035
Lower	1	11.1	1	2.9	0.721

DISCUSSION

Esophageal foreign body can present in any age group. However the type of foreign body and the susequent management varies with the age and the type of foreign body ingested respectively. As suggested in various literatures most of the foreign bodies pass on spontenously (80-90%).[11] Sharp foreign bodies and reactive foreign bodies like lithium batteries need to be removed within 24 hours as the risk of esophageal perforation is quite high and can lead to fatal complications like mediastinitis, para-retropharyngeal abscess and empyema.[12,13]

In our study we found that most of the patients were males (27 patients 62.7%) and patients of pediatric age group (65%), as also reported in various other publications.[14-16] Pediatric patients aged 1-3 years were at higher risk probably because of lack of supervision in older children and the curiousity of this age group to explore the world around.[17] As also reported by other authours, coin was the most common type of foreign body in our study.[18] Coins are relatively easier to remove because of their non-traumatic nature and impaction at upper esophagus. Composition of coins varies in different countries and can lead to metal toxicity or reaction similar to alkaline batteries.[19-21] However in India coins are made of ferritic

stainless steel and are relatively inert objects. In our study, we found that in adults the most common type of foreign body was related to diet (66.6%) with chicken bone being the most common type, followed by dentures.[6,23,24] Singh et al point out that diet related foreign bodies are more common in advanced age because of decreased sensation of the oral cavity in denture wearers, gradual loss of sensation and poor motor control of the laryngopharynx.[22] The most common site of foreign body impaction in our study was the upper esophagus (85.2% in children and 66.6% in adults). Koirala et al et al and Wyllie at al described the upper esophagus was the commonest site of foreign body impaction in children and the mid esophagus was the commonest site of foreign body impaction in adults.[18,23] However in our study upper esophagus was the commonest site of impaction in adults also although there was higher incidence of mid esophageal foreign body in adults as compared to pediatric patients.

All the patients who presented in our department with history of foreign body ingestion were subjected to through clinical examination and a plain radiograph of neck (Figure 1), and computerized tomography scan (Figure 2) was advised in patients with clinical symptoms suggestive of foreign body ingestion with normal X-ray findings. Patients who presented with the history of inert foreign body ingestion were kept under watchful waiting overnight, as many of the foreign bodies pass on their own without doing any invasive intervention.[11]

A repeat X-ray was done before discharging or taking the patient to operation theater and managed accordingly. Patients with history of sharp and lithium battery ingestion (Figure 3) were subjected to urgent rigid esophagoscopy after 6 hours of complete fasting to prevent the complication. In the present study of 3 years duration only 43 patients were admitted with the history of foreign body ingestion probably due to the COVID lockdown during 2020-2021, so statically significant results were not possible to obtain due to limited number of patients in each sub group of foreign body ingestion.

Figure 1: Coin at upper esophagus.

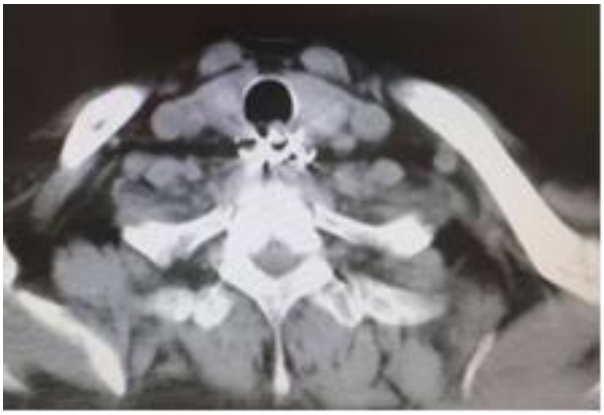

Figure 2: CT thorax of denture at upper esophagus.

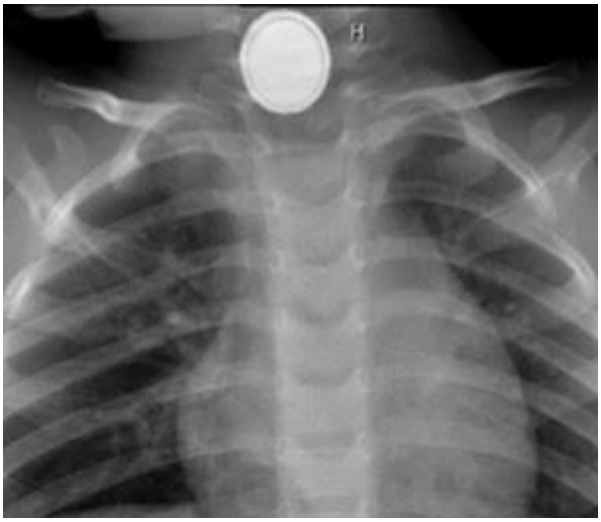

Figure 3: 'Double ring sig' of lithium battery on X-ray neck.

CONCLUSION

Foreign body ingestion is a common ENT emergency that an otolaryngologist encounters in the emergency department. Pediatric patients being the more commonly affected than adults. Management depends on the type of foreign body ingested, as observation is advisable in patients of smooth and inert foreign body ingestion. Patients with history of sharp/ battery ingestion need to be managed on urgent basis because of high risk of fatal complications and associated morbidity.

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