

Accidental Foreign Body Ingestion: Analysis of 163 Cases

Prakash Adhikari*, **Bikasb Lal Shrestha****, **Dharma K. Baskota*****, **Bimal K. Sinba******.

* Dr. M.S. First Year Resident, Department of ENT & Head and Neck Surgery, T.U. Teaching Hospital, Kathmandu, Nepal.

** Dr. M.S. Second Year Resident, Department of ENT & Head and Neck Surgery, T.U. Teaching Hospital, Kathmandu, Nepal.

*** Associate Professor, Department of ENT & Head and Neck Surgery, T.U. Teaching Hospital, Kathmandu, Nepal.

**** Professor, Department of ENT & Head and Neck Surgery, T.U. Teaching Hospital, Kathmandu, Nepal.

Intitution: Department of ENT & Head and Neck Surgery, T.U. Teaching Hospital, Kathmandu, Nepal.

Dr. Prakash Adhikari, M.B.B.S.,M.S. First Year Resident, Department of ENT & Head and Neck Surgery, T.U. Teaching Hospital, Kathmandu, Nepal.

Telephone: +977-1-4414191, Fax: +977-1-4414191. E-mail: prakash_ooz@hotmail.com.

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SUMMARY

- Introduction:** Accidental foreign body ingestion is a common problem encountered in emergency department in both children and adults. It carries significant morbidity and mortality if not removed at the earliest.
- Objective:** This study was done to identify the type and site of foreign body ingestion in children and adults.
- Method:** A retrospective analysis of 163 cases of foreign body ingestion were done in patients admitted in ENT & Head and Neck Surgery department of TU Teaching Hospital in between April 2004 and October 2006. In all cases, x-ray soft tissue neck and x-ray chest were done along with other preoperative investigations. In all patients rigid oesophagoscopy or direct laryngoscopy under general anaesthesia were done to remove foreign bodies. While in two cases flexible endoscopies were done.
- Results:** There were 48.5% children and 51.5% adults. In children, the most common foreign bodies (F.B.) were coin (60.7%), meat bone 15.2%, and metallic foreign bodies 8.9%. The most common site of F.B. was at cricopharyngeal junction 51.9%, followed by oesophagus 46.8%. In contrast, in adults most common foreign bodies were meat bone 76.1%, followed by coin 3.6% and denture 2.4%. The most common site in adults was oesophagus 62.0% followed by cricopharyngeal junction 25.0% and pyriform sinus 4.7%. Foreign bodies were not present in 8.3% of adults and 1.2% of children. There was no morbidity and mortality noted during entire period of this study.
- Conclusion:** Blunt foreign bodies were more common in children while sharp foreign bodies were in adults. The cricopharyngeal junction was the most common site of F.B. in children where as in adult it was the oesophagus. Early removal of these foreign bodies must be considered to reduce the risk of complications.
- Key words:** foreign bodies, swallowing, endoscopy, oesophagus.

INTRODUCTION

Foreign body ingestion is a common problem (1). Mostly it is accidental but sometimes individuals ingest certain materials to conceal it. The most frequently swallowed foreign bodies in children include coins, metallic foreign bodies (parts of playing objects) and while meat bone (chicken bone/fish bone/mutton/buff) are common in adults and elderly (2,3,4,5,6). Children between the ages of one and three years were the most commonly affected (7). Foreign bodies frequently occur in the cricopharyngeal and oesophageal regions (8). Most of the foreign body which have gone beyond esophagus will pass uneventfully through the intestinal tract (1). Foreign bodies in upper digestive tract whether blunt or sharp should be considered as an emergency to reduce the associated complications. If foreign bodies are not removed on time, it can cause intramural perforation, subacute mediastinitis, aorto-oesophageal fistula (9), tracheo-oesophageal fistula, and long-term residual injury to the esophagus (10). This study was done to identify the type and site of foreign body ingestion in both children and adults.

METHOD

A retrospective analysis of 163 cases of suspected foreign body ingestion were done in patients admitted in ENT & Head and Neck Surgery department of TU Teaching Hospital in between April 2004 and October 2006 (2 ½ years). All age groups with suspicion of foreign bodies were included. Age less than 12 years was included in children while age more or equal to 13 years was included in adults. Informed consent was taken from all patients in order to participate in this study and the work was approved by local ethical committee. In all cases, x-ray soft tissue neck lateral and x-ray chest anteroposterior view done along with other preoperative investigations were done. In all patients rigid oesophagoscopy or pharyngoscopy under general anaesthesia were done to remove foreign bodies. While in two cases flexible endoscopies were done.

RESULTS

There were 163 cases of foreign body ingestion, out of which 48.5% were children and 51.5% adults. Foreign bodies were common in 0-4 year age group in children where as in adults it was common in 31-40 years age group (Table 1, 2). In children, the most common foreign bodies were coin (60.7%), meat bone 15.2%, and metallic foreign bodies 8.9% (Table-3). The most common site of all these F.B. was at cricopharyngeal junction

Table 1. Age and sex distribution of foreign bodies in children.

Age group	Male Number (Percentage)	Female Number (Percentage)	Total (Percentage)
0-4 years	33	16	49
5-8 years	13	5	18
9-12 years	4	8	12
Total	50	29	79

Table 2. Age and sex distribution of foreign bodies in adults.

Age group	Male Number (Percentage)	Female Number (Percentage)	Total (Percentage)
13-20 years	3	6	9
21-30 years	7	6	13
31-40 years	15	8	23
41-50 years	8	4	12
51-60 years	8	4	12
61-70 years	3	2	5
More than 70 years	6	4	10
Total	50	34	84

Table 3. Types of F.B. in children.

Types of F.B.	Percentage
Coin	60.7%
Meat Bone	15.2%
Metallic F.B.	8.9%
Vegetative F.B.	6.3%
Electric F.B.	3.8%
Battery	3.8%
No F.B.	1.3%

(51.9%), followed by oesophagus (46.8%). In contrast in adults the most common foreign bodies were meat bone (76.1%) followed by coin (3.6%) and denture (2.4%) (Table-4). The foreign bodies were more common (29.8%) in 30-40 years age group. The most common site in adults was oesophagus (62.0%) followed by cricopharyngeal junction (25.0%) and pyriform sinus (4.7%). There were 8.3% of adults and 1.2% of children in whom foreign bodies were not present. There was no mortality noted during entire period of this study.

DISCUSSION

Foreign body ingestion is a common occurrence and carries significant morbidity and mortality. The peak age in children is between 6 months to 3 years (7). Our study showed that foreign bodies were common in 0-4 year age

Table 4. Types of F.B. in Adults.

Types of F.B	Percentage
Meat Bone	76.1%
Coin	3.6%
Denture	2.4%
Wood	1.2%
Metallic F.B.	1.2%
Electric Plate	1.2%
Lapsi Seed	1.2%
Meat bolus	4.8%
No F.B.	8.3%

group in children where as in adults it was common in 31-40 years age group. On analyzing 163 cases of ingested foreign body we found almost equal percentage in children and adults/elderly. However, Foreign body were common (29.8%) in 30-40 years age group.

Most common foreign bodies in pediatric age group are coins (2,3,4,5,6), but meat bone, marbles, safety pins, button, batteries and screws are also reported. Our study also revealed coins (60.7%) to be the most common foreign body in children followed by meat bone (15.2%) and metallic F.B. (8.9%).

In old age ingestion of a bolus is common occurrence specially elders who are edentulous who cannot chew properly, particularly food like meat and swallow it as a whole. Moreover elderly patient most of the times have other underlying pathology which needs to be screened.

F.B. can be impacted in the pharynx and oesophagus because of their shape, size and anatomical narrow segments. More adults than children tend to have impaction of bones in the pharynx and oesophagus. The oesophagus is a passive and unadaptable organ and its peristalsis is not strong enough to prevent its retaining certain types of swallowed objects (9). Meat bones are common in an adult which is similar to our study. Our study also showed coins and denture as a common foreign body in adults. The most frequent location was the oesophagus and cricopharyngeal junction. However there are several studies done showing cricopharyngeal and oesophageal region to be the common site (2,8).

Removal of foreign body is not an easy task. It needs proper instruments and skill (2). Any F.B. that is large and impacted or any sharp F. B. should be removed immediately (1). Blunt F.B. can be usually removed safely by rigid endoscope (1). In the recent past, flexible endoscope has been advised for oesophageal F.B., where success rate is 76-95% and 0% morbidity and mortality (10). There is a significant risk of causing laceration and perforation of

oesophagus while removing sharp F.B. with flexible endoscope. These can be avoided by using rigid oesophagoscope.

In all of our patients rigid oesophagoscopy or pharyngoscopy under general anesthesia were done to remove foreign bodies. While in two cases, flexible endoscopies were done and in four cases foreign body were advanced into the stomach. There were 8.3% of adults and 1.2% of children in whom foreign bodies were not present two cases of children had associated oesophageal stricture.

Sharp F.B. is frequently associated with serious complications. If they are not removed at the earliest, they can cause erosion, perforation, abscess or mediastinitis (3). The incidence of such complications occurs even after the removal of F.B which is often due to anesthesia, or due to delayed presentation. There were no morbidity and mortality noted in our case series. However other studies showed complications like oesophageal perforation, oesophagoaortic fistula, empyema thoracis, mediastinitis and lung abscess (3,8).

CONCLUSION

Blunt foreign bodies were common in children while sharp foreign bodies were in adults. Early removal of these foreign bodies must be considered to reduce the risk of complications. It is better to prevent children by not allowing them to play with coins/metallic foreign bodies/safety pins etc. Parents/ caretaker should be educated to take their children to the hospital even there is a suspicion of foreign body ingestion. Even if there is a not a clear cut history of foreign body ingestion and if you suspect, you should not neglect it.

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