



## IMPACTED SHARP FOREIGN BODY IN THE OESOPHAGUS - A RETROSPECTIVE STUDY

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**ABSTRACT** Accidental ingestion of foreign body cases are relatively common emergency encountered in the field of ENT. Impacted sharp foreign bodies in the esophagus is a common clinical emergency accounting for 4% of all emergency endoscopies, requiring perfect recognition, early treatment to minimize the potentially serious and sometimes fatal complications.

**Aim:** To study the clinical and management of impacted sharp foreign bodies in the oesophagus.

**Methods:** This is a retrospective study of 25 patients both pediatric and adults who attended pediatric department at Institute of Child Health and Hospital for Children/ Rajiv Gandhi Government Hospital of Madras Medical College, Chennai.

**Results:** Our study included a total of 15 pediatric and 10 adult sharp foreign body cases. The commonest age group was between 1 to 3 years. Majority of sharp foreign bodies in adults was chicken bone, followed by dentures in adults in pediatric age group majority was safety pin and the commonest site was at cricopharyngeal level in both groups. All the sharp foreign bodies diagnosed by X - rays except fish bone. All sharp foreign bodies removed by per oral rigid oesophagoscopy successfully as emergency, except 2 cases of open safety pin pointing upwards, which was removed by gastrostomy.

**Conclusion:** Sharp foreign body ingestion is a life threatening clinical situation, with children less than 4 years of age being most commonly affected. Sharp foreign body ingestion must be considered a matter of emergency, especially in the case of open safety pin with pointing upwards. This study aimed to increase the awareness of sharp foreign bodies in the oesophagus, as they are difficult to remove, but need to be removed carefully at the earliest with expert team to prevent dreaded complications like pseudo aneurysm of aorta and hemopericardium.

**KEYWORDS :** Oesophageal sharp foreign body, Pediatrics, Rigid oesophagoscopy.

### INTRODUCTION:

Accidental ingestion of foreign body cases are relatively common emergency encountered in the field of ENT. Impacted sharp foreign bodies in the oesophagus are a common clinical emergency accounting for 4% of all emergency endoscopy. Foreign body ingestion may be accidental or purposeful. Maximum chances of foreign bodies are noticed among paediatric age groups, followed by edentulous adults and psychiatric patients (1). Among all the factors wearing of removable dentures is most commonly associated with foreign bodies in adults (2, 3).

Commonest impacted foreign bodies in paediatric age group are coins, sharp pins, needles, safety pins, toy parts, crayons, jewels and pointed objects (4,5). Fish bone, chicken bones fruit seed and dentures are the most common ingested foreign bodies in adults.

Majority of sharp foreign bodies can be removed with rigid oesophagoscopy. Safety pins in the stomach were manipulated with the magnet and the oesophagoscope to make magnetic contact with spring end of the safety pin for safe withdrawal upward through the oesophagus. Open safety pin lodged in the oesophagus with point upwards can be removed by endogastric version (6).

### MATERIALS AND METHODS:

This is the retrospective study done in both adult and paediatric age group who attended the paediatric department (ICH&HC) and RGGGH both attached to Madras Medical College Chennai with accidental ingestion of sharp foreign body. This study includes 15 paediatric and 10 adults. All patients reported with history of foreign body ingestion in oesophagus were included. Detailed data of each patient concerning the age, sex type, site of foreign body and presenting symptoms were collected. After thorough clinical ENT examination all the patients were advised for neck and chest x - ray in both AP and lateral views to confirm and know the level of foreign bodies, CT scan of neck and thorax was advised in special cases like open safety pin, where complications were suspected. Based on the history, clinical examination and radiological investigations patients were taken for rigid oesophagoscopy under General Anaesthesia. By using appropriate size rigid oesophagoscopy and appropriate foreign body forceps were used for removal of foreign body. After removal, oesophagoscopy was reinserted and foreign body impacted site examined for any erosion of mucosa. After procedure patients were monitored in post operative ward. Paediatric cases and complicated cases were monitored in Intensive Care Unit.

### RESULTS:

The study included a total of 15 paediatric cases and 10 adult cases. The commonest age group was between 1 to 4 years (Table 1).

Majority of foreign bodies were in paediatric age group is Safety pin and chicken bones in adults (Table 2). The commonest site of foreign body was at crico - pharyngeal level (Table 3). There were 23 radio opaque sharp foreign bodies (Table 4).

#### Distribution of Age group: (Table 1)

S. NO	Age in years	Number	Percentage distribution (%)
1	1-4	10	40
2	5-14	5	20
3	15-60	4	16
4	>60	6	24

#### Types of foreign body: Figures 1-8 (Table 2)

Type of Foreign body	Paediatrics Number of cases	Percentage	Adult Number of cases	Percentage
Chicken bone	3	12	6	24
Safety pin	5	20	0	0
Denture	0	0	4	16
Fish bone	0	0	2	8
Glass piece	2	8	0	0
Cell phone pin clip	1	4	0	0
Stapler pin	1	4	0	0

Commonest foreign body was chicken bone and denture in adults. In Paediatric age group majority were safety pin.

#### Distribution of foreign body: (Table 3)

Site	Paediatric Number of cases	Percentage	Adult Number of cases	Percentage
Post cricoid region/upper oesophagus	14	56	10	40
Middle oesophagus	0	0	0	0
Lower oesophagus	1	4	0	0

Majority of foreign bodies were present at the level of cricopharynx. 1 Case of open safety pin was present at the lower oesophageal sphincter level.

**Distribution of Radiological findings (Table 4)**

Chest x-ray	Number of cases	Percentage
Foreign body visualised	23	92
Foreign body not visualised.	2	8

In all cases foreign bodies were seen in the X-rays except 2 cases of fish bone ingestion, foreign body was not visualised as it was not radio-opaque.

**DISCUSSIONS:**

Three groups of patients appear to be at risk for impacted oesophageal sharp foreign body (7). Oesophageal disease and poor oral sensitivity from dental prosthesis predispose elderly edentulous patients to food bolus impaction. Psychiatric patients compromise second group.

Paediatric patient's account for approximately 75% to 80% of oesophageal foreign bodies in many studies, with a preponderance of the children aged 18 to 48 months (8). In our study 15 (60%) patients were below 14 years. This study correlates with Hawkins EW, Chambers D, Ashman H, Williams Johnson J, Sing P et al (9).

All of these patients had per oral endoscopy removal of foreign body, except two cases of open safety pin with sharp end pointing upward, it was pushed down into stomach and paediatric surgeon did gastrostomy and removed the foreign body. Majority of adult patients was over the sixth decade of life, and most presented because of bones stuck in the throat, especially chicken bones. In glass piece foreign body case, local tenderness over the cervical oesophagus and persistent drooling with strong history of foreign body ingestion gave clue to impacted foreign body in the oesophagus.

Complications rate of 12.6% in adults and 4.6% in children has been reported with foreign bodies, pulmonary complications being the most common in children and retropharyngeal abscess in adults (10)

In our study 2 paediatric cases of open safety pin had complications. One child had haemo-pericardial effusion due to long standing impacted open safety pin with sharp end facing upwards at the lower end oesophagus. Cardiothoracic surgeon operated and haemo-pericardial effusion corrected and safety pin removed. Child was kept in the Intensive Care Unit postoperatively and recovered well. The other case after per oral endoscopic removal of open safety pin, child was discharged. Child again readmitted after 5 days with weak cry and CT neck done, diagnosed pseudo aneurysm and was operated and the child died postoperatively.

Denture cases in adults were all operated by per oral endoscopy without any complication.

**CONCLUSION:**

The most common sharp foreign body in our study in adult is chicken bone, followed by dentures. Both were managed successfully by using per oral oesophagoscopy without any complication. Elderly patients are advised not to gulp large piece of meat. In pediatric age group we encountered open safety pins, pointing upwards and managed by pushing into the stomach and removed successfully. We faced two dreaded complications, hemo - pericardium and pseudoaneurysm in other two cases of open safety pin. Although rigid oesophagoscopy is relatively easy and common procedure in our hospital, it carries preventable life threatening risks during and after the procedure in sharp foreign bodies like open safety pin. Teamwork of anesthetist, surgeon, gastroenterologist and cardiothoracic surgeon is essential to ensure safe procedure to prevent intra operative and postoperative complications.



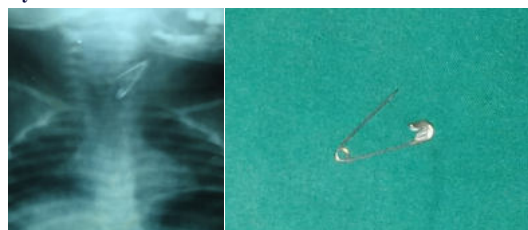
**Figure 1**  
Chicken Bone



**Figure 2**  
Chicken Bone



**Figure 3**  
Safety Pin



**Figure 4**  
Safety Pin



**Figure 5**  
Denture



**Figure 6**  
Denture



**Figure 7**  
Glass Piece



**Figure 8**  
**Cell Phone Charger**



**Figure 9**  
**Clip**

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