

## UPPER GASTRO INTESTINAL TRACT FOREIGN BODIES: PRESENTATION AND MANAGEMENT

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### ABSTRACT

**Objective:** To evaluate the presentation and outcome of accidentally ingested upper gastrointestinal foreign bodies.

**Study Design:** Case series.

**Setting & Duration:** Department of Otorhinolaryngology - Head and Neck Surgery, Dow Medical College, Civil Hospital Karachi and Dow University of Health Sciences from, February 2005 to March 2008.

**Methodology:** One hundred and eighteen patients admitted through emergency/out patient department with history of accidental foreign bodies ingestion. Each patient was studied for gender, age, complaints, duration, site of impaction, type and number of foreign bodies removed and complications encountered.

**Results:** Majority of the patients were belong to the children population (62%). Cricopharynx was the commonest site of impaction (83%), coins were the common foreign bodies encountered (67%).

**Conclusion:** Rigid endoscopic retrieval of foreign bodies under general anaesthesia was found to be common and safe mode of treatment (84%).

**KEY WORDS:** Upper Gastrointestinal, Foreign Bodies, Management, Children, Adults

### INTRODUCTION

Webb estimated 1500 death occurs annually from foreign bodies in the upper GI tract.<sup>1</sup> People with foreign bodies in the upper gastrointestinal (GI) tract commonly present to the Otorhinolaryngology emergency for evaluation and management.

Children often swallow foreign material or objects that pass through the gastrointestinal tract without problem<sup>2</sup>, the foreign bodies involved differ in children and adults. Children typically ingest objects they pick up and place in their mouths, such as coins, button, crayons, and similar items. In contrast adults are more prone to ingest food boluses, chicken or fish bone, dentures, or toothpick.

The esophagus is a tubular structure approximately 20-25cm in length. Patient can usually localized foreign bodies in the upper esophagus but localized poorly in the lower two third. The esophagus has 3 areas of narrowing: the upper esophageal sphincter which consist of cricopharyngeal muscle; the crossover of the aorta; and the lower esophageal sphincter.<sup>3</sup>

Foreign bodies occasionally become lodged in the esophagus because of the object size, shape, narrowing of the esophagus lumen, or anatomic abnormalities.<sup>4</sup> Presentation of patients with GI foreign bodies can range from the patients in extreme is to the patients with subtle or chronic finding without a clear history. Potential complications of upper gastrointestinal foreign bodies include abrasion, laceration, punctures with associated abscesses, perforations, and infection to surrounding structures including abscess, mediastinitis, pneumomediastinum, pneumothorax, pericarditis or tamponade, fistula or even vascular injuries to the aorta or pulmonary vasculature.<sup>3</sup>

Before the mid 1850, the most common management for suspected esophageal foreign body impaction was to attempt to push the object in to the stomach.<sup>5</sup> The first esophagoscope used in 1890 by Mackenzie was later improved by Jackson, Ingal, and Mosher.<sup>6</sup> The

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earliest esophagoscopies for foreign body extraction by Jackson and Ingals were performed on awake patients in a sitting position.<sup>5</sup> With the passage of time anesthesia risks have decreased and instrumentation for endoscopic removal of esophageal foreign bodies has improved, these procedures are performed with the patient on supine position under general anaesthesia.<sup>7</sup> The aim of this study to analyzed the presentation and management of accidental ingestion of upper GIT foreign bodies.

## METHODOLOGY

The retrospective study included 118 patients of both sexes admitted through emergency/out patient Department of Otolaryngology, Head and Neck Surgery Civil Hospital Karachi, from February 2005 to March 2008 with history of foreign body ingestion. The clinical data was collected by review of patient record regarding the age, sex, mode of presentation, duration, site of impaction, type of management, status of tract, type and number of foreign bodies removed and complications encountered. Results were expressed in term of frequency.

## RESULTS

Among 118 patients 65 were male 53 females Male to female ratio was 1.3:1 with age range of 2-65 years. More than half of patients were between 2-10 years of age (Table I). Majority of cases (66%) had developed dysphagia, followed by odynophagia,pricking sensation, and drooling. Two patients presented for removal of esophageal foreign body on more than one occasion. In majority of patients the duration of impac-tion prior to admission was less than 24 hours and greater than two days only in 3 patients. Diagnosis was made clinically and /or radiologically with the type of foreign body. Radiological investigations consisted of plain x-ray neck and chest. In 4 patients esophageal foreign bodies spontaneously passed during a period of observation of 24 hours or less. In 99 patient's management consisted of rigid endoscopic retrieval (Karl Storz rigid

**Table I. Age distribution**

Age (Years)	No. of Patients	%
2-10	73	62
11-20	9	8
21-30	5	4
31-40	8	7
41-50	6	5
> 51	17	14

distally lighted laryngoscope and oesophoscopes). In 4 patients the foreign body (meat bolus)was pushed into the stomach. In one child two coins were removed one after other in single endoscopic attempt. Ninety six were discharged within 24 hours of admission while 2 patients were discharged within the 48 hours; one had long stay of 15 days with esophageal perforation. The common esophageal foreign bodies were coins, followed by chicken bone, beef bone (in food boluses) and denture in 2 patients. Site of impaction is shown in Table II. The cricopharyngeal (post cricoid area) was the commonest site of impaction. Four patients (4%) were advised to evaluate for their findings at endoscopies; 2 males had strictures and 2 females had pharyngeal webs. Complication were noted in 3% ( n=3) including respiratory distress, laryngospasm at the time of extubation and esophageal perforation in one patients.

## DISCUSSION

Foreign bodies in the upper gastrointestinal tract are usually swallowed, purposefully or accidentally. After nose and ear, the esophagus is the commonest foreign body which present in ENT department.<sup>8</sup> Foreign bodies of the esophagus are common in young children, often between the ages of 2 and 3 years<sup>9</sup> and are likely to occur whenever a child puts an inedible objects in the mouth. This study showed a high incidence of foreign bodies ingestion in children (62%). A similar high prevalence of foreign bodies ingestion in children was found in the study conducted by Saki.<sup>10</sup>

It is also common in the old age group. Adults and middle aged present less commonly. Edentulous patients do not chew the food and prefer to swallow the bolus as a whole, large boluses thus get stuck.<sup>8</sup> In this study old age ranked second after the young children. Coins, buttons, bones, safety pins, plastic toys, screws, boluses of meat are common foreign bodies. In this study, coins were the commonest foreign body esophagus in children and bone and food bolus were the commonest foreign body in old population, it is due to the fact that bone is not felt in bolus due to artificial dentures and bolus is swallowed. These results are consistent with the results of the other studies.<sup>8,11</sup>

**Table II. Site of impaction of foreign bodies**

SITE	No. of Patients	%
Oropharynx	15	13
Hypopharynx	5	4
Cricopharynx & Upper Oesophagus	98	83

In this study dysphagia was reported most frequent symptom, followed by vomiting and odynophagia after the ingestion of oesophageal foreign bodies. Foreign bodies coming just inferior to the cricopharyngeus muscle produce dysphagia and pain in the suprasternal area during swallowing.<sup>12</sup>

Hollinger reported that only 1% patients are present for more than 6 months, otherwise adults usually present acutely. History of accidental ingestion of foreign body leads to dysphagia followed by drooling and vomiting if obstruction is complete. In children the history foreign body may be less clear. Conner reported 7% and 20% of children were asymptomatic.<sup>12,13</sup> Witnessed choking episodes were reported in 80% of cases, when child ingest a foreign body.<sup>14</sup> One third of children present with respiratory symptoms.<sup>15</sup> Foreign body ingestion should always be suspected in children with unexplained respiratory symptoms. In present study history was given by a parents who had seen the child with an object in his / her mouth and suspect the child might have swallowed it. In this study, pricking sensation was reported most frequently, followed by odynophagia.

Commonest foreign body was found to be fish bone followed by fine stick of saunf. Tonsils were the commonest site of oropharyngeal foreign body impaction followed by vallecula and pyriform fossa. These findings were supported by the evidence of other studies. Whole of the fish has been described in a fisherman in pharynx who was holding it between teeth and it wriggled itself into pharynx, being lodged in pyriform fossa.<sup>16</sup> Foreign bodies are also known to occur in prisoners of war, mentally retarded and in patients who are known to have vertebral column deformities. Pre existing esophageal disease particularly strictures, predisposes to the retention of foreign bodies.<sup>17</sup> In this study, 4% of patients had esophageal abnormalities on endoscopic retrieval of foreign bodies.

Most patients with GI foreign bodies do not require any laboratory studies exception are patients who present with signs and symptoms consistent with infection, in which case a CBC may be indicated. Blunt objects like small coins, can remain undected and presents several weeks or even months later with subtle symptoms often respiratory.<sup>18</sup> A plain radiograph of the neck and chest usually confirms the diagnosis if the foreign body is radioopaque, as reported in 2 years child presented with respiratory symptom suggestive of asthma for 6 months was diagnosed on radiograph, the unsuspected coin in the cervical esophagus, her respiratory symptoms resolve shortly after the removal of coin.<sup>11,19</sup> Alternatively, there have been reports that have suggested the use of a metal detector to locate an ingested coin.<sup>20</sup> In cases

of non radio opaque foreign bodies, widening of Prevertebral space is suggestive of foreign body on radiograph of neck lateral view.<sup>21</sup> Plain radiology does not have any influence on management of non opaque foreign body, except in delaying endoscopy.<sup>3</sup> In small children a mouth to anus radiograph can be obtained. In older children and adults posteroanterior and lateral chest radiograph provide better localization. In this study we diagnosed all our patients clinically or on plain radiographs of neck /chest.

Many foreign bodies of oropharynx can be removed without or under local anaesthesia. Hypopharyngeal and oesophageal foreign bodies are removed more safely with a rigid oesophagoscopy under general anaesthesia.<sup>22</sup> After the foreign body has been removed the esophagus is reenter to make sure there is no second foreign body and to inspect the esophagus for trauma and predisposing factors such as strictures.<sup>23</sup> It was observed that most of the impacted oesophageal foreign bodies were in the upper one third. This finding is consistent with the other identical studies.<sup>8,24</sup> Sharp and rough foreign bodies are known to produce abrasions or laceration or perforation of pharynx or oesophagus. The longer the duration of foreign body impaction in the esophagus the more likely is perforation of the esophagus to occur.<sup>3</sup> In this study one patient (1%) had esophageal perforation associated with the removal of impacted sharp denture.

Experienced flexible fiberoptic endoscopic removal with special holding forceps is recommended by Berggreen and Webb since rigid endoscopy carries a higher complication rate.<sup>8,25,26</sup> Almost more than half of our patients were children and elderly so, awareness program for parents should be highlighted via media that children should not be given coins to play with and particularly keeping a coins in mouth is too dangerous, not putting inedible objects in the mouth and keeping small inedible objects out of the reach of small children, it must be discouraged. Food preparation, careful chewing, scrutiny of food in the mouth, particularly while eating chicken /fish.<sup>22</sup>

## CONCLUSION

Children and old people are at risk of getting upper GI foreign bodies. A plain radiograph of the neck and chest usually confirms the radio opaque foreign body. Rigid endoscopy under general anesthesia is safe and effective procedure for the management foreign bodies.

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