General Surgery

ENDOSCOPIC FOREIGN BODY RETRIEVAL FROM THE UPPER GASTROINTESTINAL TRACT - A FIVE YEAR EXPERIENCE.

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(ABSTRACT) Most of the ingested foreign bodies are likely to pass without an intervention. But a few necessitate endoscopy while less than 1% require surgical intervention. Out of total 25 patients treated at our centre, 19 had impaction of foreign body in upper gastrointestinal tract with lower oesophagus being most common site of impaction followed by G-E junction & upper oesophagus. Management of foreign body relies on various factors as size, type, location of foreign body in GIT. foreign bodies impacted in oesophagus require early intervention in view of high rate of complications associated with it. Success rate of approximately 94% is documented in literature and endoscopic removal of foreign body is possible in almost all cases without significant complications.

KEYWORDS:

INTRODUCTION

It is not uncommon to come across cases of foreign body ingestion and food bolus impaction in upper gastrointestinal tract during medical practice. It is especially common among children who represent 80% of emergencies with peak incidence during age of 6 months and 6 years^(1,2) while true foreign body ingestion in adults is more in patients with psychiatric illness, alcohol intoxication, developmental delay, drug abuse.^(3,4) Most of ingested foreign bodies (80%) are likely to pass without a need for any intervention⁽⁵⁾ but remaining 20% necessitate endoscopy while less than 1% require surgical intervention.^(6,7) Patients presenting with food bolus impaction generally have underlying oesophageal pathology such as oesophagitis, stricture or malignancy.^(8,9) Complications of foreign body ingestion such as impaction, perforation or obstruction are common at GI angulations – possible potential sites being cricopharynx, gastro-esophageal junction, pylorus and duodenal sweep⁽¹⁰⁾.

AIM

To elicit our 5 years experience in endoscopic retrieval of foreign body in the upper gastrointestinal tract.

MATERIALAND METHODS

A retrospective study was performed at MGM Medical College & Hospital, Navi Mumbai in department of Surgical Gastroenterology during period of January 2009 to January 2015 & a total of 25 patients with foreign body ingestion were treated during this period. Detailed history, demographic profiles of patients, presenting symptoms, type of foreign body, anatomical location of foreign body, treatment (devices used for endoscopic retrieval) were studied with other factors such as complications related to procedure/ foreign body impaction were noted.

Collected data was analysed and presented as numbers & percentage for qualitative variable while quantitative variables were expressed as mean \pm standard deviation.

RESULT

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A total of 25 patients were treated. Male to female ratio was 1.08:1 with age ranging form 4 years to 65 years. Mean age was 27.69 ± 22.62 . 12 patients were of age of above 30 years while 11 were below 10 years of age. We had only 2 patients in the age group of 10 - 30 years of age group. The most common mode of ingestion was accidental (17/25) and this was common in individuals of age < 20 years (13/17). The most common presenting symptom was pain in retrosternal / epigatic region (5 of 13 patients). Most common foreign body found was a coin (5/13) followed by battery (4/13). Other foreign bodies seen in

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children were hair pin, safety pin and screw. We observed that 9 of these 13 foreign bodies were impacted and most common site for impaction was lower oesophagus and gastro-esophageal junction. One of the four patients with battery ingestion was referred to our department after 5 days during which he was investigated radiologically & there was no progression of the foreign body from the lower oesophagus. In this case, we observed severe oesophageal ulceration at the site of impaction. Food bolus impaction was observed in 8 patients, all of whom were in an age group > 30 years. While six of these eight patients had underlying oesophageal pathology as oesophageal stricture / malignancy, site of impaction was equally distributed in oesophagus from upper to lower oesophagus. Three in each segment of oesophagus. Dysphagia was the main presenting complaint observed in 5 of 8 patients. Out of total 25 patients 19 had impaction of foreign body in upper gastrointestinal tract with lower oesophagus being most common site of impaction (5 of 19) followed by gastro-esophageal junction & upper oesophagus (4 in each). 2 patients had foreign body impacted in antrum and one had foreign body impaction in fundus of stomach.

TABLE 1.

Type Of foreign body	N0	%
Chicken vertebra/ fish	4	16
bone		
Battery Cell	4	16
Screw	2	8
Stick	2	8
Safety pin/ hair pin	3	12
Coin	5	20
Denture	1	4
Food bolus	4	16

Table 2.

Site of impaction	No. Of patients	%
Upper esophagus	4	21
Mid esophagus	3	15
Lower esophagus	5	26
GE junction	4	21
Fundus	1	5
Antrum	2	10

We were able to successfully retrieve all the foreign bodies from these 25 patients with no procedure related complications. Complications

related to impaction of foreign body were seen in 13 / 19 patients. 7 of 25 foreign bodies were retrieved after pushing into stomach from oesophagus. Endoscopic magnet was utilized in 7 of these patients for either dislodgement or favourable positioning of foreign body as we used non-rotatable endoscopic devices for retrieval in which very high experience & skill is needed to get hold of the foreign body. Various devices were used as per the foreign body for retrieval including Rat tooth forceps, Multiprong forceps, Alligator forceps, Shark-jaw tooth forceps, Dormia basket, Polypectomy snare, Rothmann net forceps. Most commonly used device was the rat tooth forceps (12 of 25 procedures) and dormia basket was used in 2 patient.

DISCUSSION

Foreign body ingestion is a frequent indication of upper gastrointestinal endoscopy. It is a common in pediatric population. The vast majority of these are accidental in the pediatric population. Coins account for about 60% of upper gastrointestinal foreign bodies in children less than 10 years of age while foods bolus account for 60% of upper gastrointestinal foreign bodies in patients over 11 years⁽¹²⁾. In our study most common foreign body was coin accounting for 20% while food bolus impaction was observed in 16%. Accidental ingestion was seen in 17 of 25 (68%). Other 8 cases were of food bolus impaction but no patient had psychiatric illness. The cause of food impaction was underlying oesophageal pathology in 6 patients and nature of food particle in 2 patients. Normal adults and older children may identify the foreign body ingestion but the area of discomfort generally does not indicate site of impaction. Patients as those mentally ill and children present with other symptoms like vomiting, wheezing, refusal to eat, choking or respiratory distress.(13,14)

In our study, the main presenting symptom in children was pain (5 of 13). Site of foreign body impaction in upper gastrointestinal tract is related to factors as anatomical, nature of foreign body, pathological. Complication rate in our study was 25% (13 of 25). These complications were associated with impacted or sharp foreign bodies. Complication rate increases if foreign body impaction is for more than 24 hours. Guidelines suggest endoscopic removal of all objects with a diameter larger than 2.5 centimeter from the stomach, sharp pointed objects, projects larger than 6 cm in the proximal duodenum. Before considering endoscopy attempts to locate foreign body with non invasive techniques as x-ray should be made. In our study 14 of 25 foreign bodies (56%) were diagnosed and localized with x-rays while 11 were identified at endoscopy.

Initial management of all patients with foreign body ingestion is assessment of ventilator status of patient and evaluation of airway. Patients especially children are always at high risk of aspiration & require urgent management. Endotracheal intubation may be a appropriate tool for airway protection in some cases as in upper oesophageal obstruction. Overtubes are very useful while managing foreign bodies endoscopically under sedation. We utilized overtubes in patients of food bolus impaction. All our patients underwent procedures under sedation and tolerated the procedure well with no post-operative complications. In patients of suspected foreign body ingestion first question to be addressed is always about the ideal time of intervention as most of ingested foreign bodies pass uneventfully through GIT⁽¹⁴⁾. Sharp and large foreign bodies do need emergency endoscopy due to high chances of complications⁽¹⁴⁾. Esophageal foreign bodies & food impactions should be retrieved within first 24 hours to avoid complications.

Duration of foreign body in oesophagus of children may be unknown so some advocate urgent retrieval in these patients. Conservative management can be opted for most of the asymptomatic gastric foreign bodies unless these are not batteries/sharp/large objects.

Management of foreign body relies on various factors as size, type, location of foreign body in GIT. Foreign bodies impacted in oesophagus require early intervention in view of high rate of complications associated with it. Success rate of approximately 94% is documented in literature and endoscopic removal of foreign body is possible in almost all cases without significant complications. We had a success rate of 100% in retrieval of foreign bodies from upper gastrointestinal tract. This might be because of less number of foreign bodies which might prove difficult to retrieve as large or very long foreign bodies / type of foreign bodies seen in psychiatric patients. But still endoscopy is a very important and therapeutic tool while used by experienced endoscopist and at a well equipped endoscopy unit.

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