

Original Research Article

Upper gastrointestinal tract foreign body in children India

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ABSTRACT

Background: Foreign body ingestion is a common problem all over the world with 80% of the case reported in children. Most swallowed foreign bodies pass harmlessly through the gastrointestinal (GI) tract. Evaluation of foreign body in upper GI tract in children. The design of this study was retrospective case study. Study conducted Mata Gujari medical college, Kishanganj, Bihar, India from January 2005 to January 2016.

Methods: Between January 2005 to January 2016 the record of all children of age group 5-16 were analyzed at Mata Gujari medical college, Kishanganj, Bihar with a final diagnosis of foreign body in upper GI tract. Data were analyzed with respect to demographic data, presenting symptoms, investigations, management and outcome. Age below 5 year and 16 year were excluded from the study.

Results: Total seventy patients were identified (38 boy and 32 girl). Age ranges from 5 year to 16 year. Fifty three patients (75.7%) presented within 24 hours. Thirteen patients (18.6%) had underlying predisposing factors. The most common FB found in 30 patients (42.8%) was coin. The most common symptoms were drooling of saliva in 42 patients (60%) followed by vomiting (51.4%) in 36 patients. Follow up ranges from one week to six months and all were recovered without any sequelae.

Conclusions: Foreign body ingestion is common problem in children and usually an accidental event. Long retained FB is associated with higher incidence of complications.

Keywords: Children, Flexible upper GI scope, Upper gastrointestinal FB

INTRODUCTION

Foreign body ingestion is a common problem all over the world with 80% of the case reported in children.¹ Most swallowed foreign bodies pass harmlessly through the gastrointestinal (GI) tract. Foreign bodies that damage the GI tract, become lodged, or have associated toxicity must be identified and removed. Children with pre-existing GI abnormalities (eg, tracheoesophageal fistula, stenosing lesions, and previous GI surgery) are at an increased risk for complications. Foreign bodies in the air and food passages are the sixth most common cause of accidental death in the United States.

Diagnosis of foreign body ingestion is difficult specially when there is no witness of ingestion of FB.² Various type of foreign body was documented depending upon the country, culture, medical records etc. In paediatric population, toddlers younger than 5 years are most commonly affected because of their increased mobility and natural propensity for experimentation.

Although children younger than 6 months are rarely able to get a foreign object into the oropharynx. Infants can ingest foreign bodies with the assistance of a sibling. Although any child can swallow a foreign body and most incidents result in minor annoyance; however, some can become a challenging problem and have serious life-

threatening complications. Flexible upper GI scope is recommended in all cases as gold standard of the treatment. It is safe, effective and well demonstrated. However it is more costly requires the presence of a skilled endoscopist, necessitates sedation or general anesthesia, and may require the subsequent observation or hospitalization. Generally rat tooth forceps, snare, balloon etc. are used for removal of FB. This study was conducted to review our experience in terms of type of foreign body, its demographic, and its management and follow up.

METHODS

Retrospective analysis of 70 patients came to Mata Gujari medical college, Kishanganj, Bihar between January 2005 to January 2016 between 5-16 years of age. All case below 5 year and above 16 years was excluded from the study. Flexible upper gastrointestinal endoscopy is also not very convenient in the patients below 5 years of age. Most of the patients were presented in casualty within 24 hours of ingestion of FB. Other was presented themselves beyond that at surgery, ENT and paediatric OPD. Data were collected from record room and analyzed in terms of demography, symptoms, investigations, management and outcomes. A detail of history, physical examinations and investigations was analyzed with the documents available at record room. Proper consent form was checked for both diagnostic as well as therapeutic removal of the foreign body. Particular emphasis given over sign and symptoms and presenting complain. Most of the time during diagnostic upper gastrointestinal endoscopy, consultant is able to do curative management of the patients by removing the FB in same sitting of the procedure. Whatever be the material removed is identified and preserved. A proper documentation of the object removed is made and finally handed over to the relatives. Proper safety is maintained while removing sharp edged object to prevent any damage during its path of removal. If any damage occurred then it was assessed and managed conservatively. Due to this patient can be retained for some time in the hospital and looked for any further complications. Flexible upper GI scope (Olympus) were used to diagnose and treat all cases under local or general anaesthesia. Rat tooth forceps, snare, magnet, balloon etc. are used to remove all types of FB.

RESULTS

Total seventy patients were admitted with a diagnosis of upper GI foreign body. Age ranges from 5 year to 16 years. There were 38 boys and 32 girls. All patients were presented within one hour to six months of ingestion of FB. Fifty three patients were (75.7%) presented within 24 hours of ingestion. Most common symptoms were drooling of saliva in 30 patients (60%) followed by vomiting in 36 patients (51%). Six patients were asymptomatic. Thirteen patients (18.6%) had underlying predisposing factor. Foreign body removed were bolus in

10 patients, metallic object in two patients and coin in one patient. All were presented within 24 hours with drooling of saliva and dysphagia.

Detailed history, physical examinations, chest, abdominal and neck radiograph, CT scan and flexible upper GI endoscopy were performed for proper diagnosis and plan of management. Sign and symptoms varies according to the position, type and duration of the object. Foreign bodies were located in oesophagus in 33 patients, in hypo pharynx in 7 patients and in stomach in 20 patients. Other had FB distal to second part of duodenum or already passed it through anal canal.

Various type of FB was removed. The most common FB was coin (42.8%). Other type was metallic objects (ear ring, safety pin, and hair clip), food bolus, fish bone, disc batteries, plastic materials and glasses. Length of hospital stay was 1 to 12 days. All patients were completely recovered without any complications or sequelae.

Most of the patients need no treatment after removal of FB. Others need prophylactic antibiotic of 3-5 days with pain killer particularly in cases with sharp pointed type of FB. Sometime minor tear noted in tract while pulling out FB and needs conservative management.

DISCUSSION

Paediatric foreign body ingestion is a worldwide problem. Impaction of swallowed fish bones is more commonly observed in countries where fish is a major dietary staple, including Asian countries. A massive database describing paediatric foreign body injury in European and other countries, the "susy safe project," recently published information regarding nearly 17,000 cases in children aged 14 years and younger; about 18% of these involved foreign body ingestion. All children regards of age can ingest FB but more common in younger patients.¹ Most of the FB can travel its course harmlessly.⁴ Most of the patients were below 10 years (51%) as compared with other data.^{1,3,4} A witness history of FB ingestion is extremely important for quick diagnosis.⁵ Louie et al published a study of 225 case studies with majority of their patients having witnessed history of FB ingestions.⁵ In our study, a witnessed history of FB ingestion was found in 74.2% of the cases. Upper oesophagus is narrow part so most of the FB was found in this part.³ In our study majority of the FB were found in upper oesophagus (83%) as compared with other study.^{3,6}

Patients presented with wide range of symptoms and sign depending upon age, nature of FB, anatomical site of lodgement and length of time since ingestion.⁵ Vomiting, dysphagia, drooling of saliva, and respiratory symptoms were the most common presenting symptoms.^{3,4,7} In our study drooling of saliva was the most common presenting complains. Type of FB ingested differs among countries according to feeding habits, culture, festivals,

socioeconomic status etc.⁸⁻¹⁰ Several studies show that the coin is the most common type of FB found to be ingested.^{3,8} In our study coin is the most common type of FB found in upper GI tract followed by fish bone and metal piece.³⁻¹⁰ Food bolus was found to be more common in previous stricture of oesophagus due to various causes.⁶

Table 1: Type of foreign body ingested.

Type of FB	Number	Percentage
Coin	30	42.8%
Metal	14	20%
Food bolus	10	14.3%
Fish bone	6	8.6%
Disc battery	3	4.3%
Plastic materials	2	2.9%
Marble piece	2	2.9%
Glass piece	1	1.4%
Cotton	1	1.4%
No FB found	1	1.4%

Table 2: Presenting complains of FB ingestions.

Symptoms	Number of patients	%
Drooling of saliva	42	60
Vomiting	36	51
Respiratory symptoms	31	44
Dysphagia	23	33
Odonophagia	6	9
Asymptomatic	6	9
Weight loss	1	1.4

Lin et al conclude that diagnosis of FB ingestion based on three important elements: eye witness, x-ray and upper GI endoscopy.¹¹ Several study showed that use of radiograph is useful tool in the diagnosis of FB ingestions but radiolucent substance can be missed by this method.^{2,8,10,12} Luk et al showed that CT scan is 96% specific in diagnosis of FB even in negative upper GI endoscopy cases.¹² In general x-ray is base line investigation for FB ingestions.

Most children who have swallowed a foreign body do not require specialized care. For the large majority, providing comfort care while transporting to an emergency department is all that is required. Patients with drooling may require suction and proper attention. Children benefit by being allowed to remain with their parents and being allowed to assume a position of comfort. Although a theoretical risk of spontaneously vomiting and then aspiration of a foreign body exists, this is unusual. Children should not routinely be intubated to protect their airways. Similarly, do not attempt to dislodge a foreign body from a spontaneously breathing patient by giving abdominal thrusts or syrup of ipecac. The usual goal of upper gastrointestinal FB management is to localize the position of the ingested foreign body. Patients with

drooling, marked emesis, or altered mental status (likely from excess vagal stimulation) may require supportive measures to protect the airway.

Most patients should undergo radiographic imagings like X-ray, USG, CT scan etc. Metal detectors may be used to locate metallic foreign bodies. Even radio opaque foreign bodies may be difficult to localize. Referral for endoscopy should be considered.

Remember that children with no symptoms may have impacted foreign bodies and those children with foreign body sensation or pain may not. Radiographs of about 15% of children presenting to the hospital after witnessed coin ingestions do not show a coin. Although some will have vomited or otherwise removed the ingested object before their evaluation, this suggests that not all children with even witnessed foreign body ingestions have truly ingested something.

So many methods were used to remove FB from upper GI tract through flexible upper GI scope such as rat tooth forceps, balloon extractor, snare, magnet etc. The choice of instrument depends upon surgeon's choice and available instruments.⁸ We prefer rat tooth forceps and snare most of the time. FB which can damage upper GI tract should be identified and remove quickly as early as possible.¹³ Waltzman et al reported that around 25-30% FB ingested will pass spontaneously without complications.¹³ Lin et al and kamath et al noted that FB should be removed as soon as possible to avoid complications as compared to our study.^{11,14}

Complication related to FB ingestion is uncommon but may be life threatening sometime.⁷ Long standing FB have higher incidence of complications like perforation, obstruction, peritonitis, abscess fistula formations etc. Type of FB ingested is related to the outcome of the patients.¹⁵ Most common FB cause complications are food (29%), coin (29%), and batteries.¹⁵ Timely diagnosis and management is necessary to avoid complications.

CONCLUSION

Foreign body ingestion is common problem in children and usually an accidental event. Long retained FB is associated with higher incidence of complications. Flexible upper GI scope is best tool to deal with this problem as it will diagnose as well as treat the problem.

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