



Research Article

STUDY OF ENDOSCOPIC MANAGEMENT OF FOREIGN BODIES IN THE UPPER GASTROINTESTINAL TRACT IN A TERTIARY CARE CENTRE

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ABSTRACT

Background. Foreign object ingestion and food bolus impaction are a common clinical problem. We report our clinical experiences in endoscopic management of foreign body ingestion, and food bolus impaction. Method. This prospective study was conducted on patients with foreign body ingestion and food bolus impaction between January 2011 and December 2018.

Results. A total of 108 patients were included in the study (male/female: 1.54/1; age 2- 75 years). Among them, 102 foreign bodies were removed successfully (94.4%). 66.6% of the foreign bodies were located in the esophagus. 6 patients required surgical interventions. Coin was common foreign body in children, Food bolus was common in adults.

Conclusion. Endoscopic management is a safe and highly effective procedure in extracting foreign body ingestion and food bolus impaction. Prompt endoscopic interventions can increase the chance of successful foreign bodies' detection

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INTRODUCTION

Foreign bodies' ingestion and food bolus impaction are common clinical problems and are some of the most common endoscopic emergencies. The majority of ingested foreign bodies pass spontaneously. Only 10~20% of cases require nonoperative intervention, and 1% or less require surgical procedures. Fortunately, mortality as a result of foreign bodies' ingestion is extremely rare . Foreign bodies' ingestion occurs more commonly in the pediatric population, taking up 80% of total ingestions, with a peak incidence from 6 months to 3 years . For the 20% of ingestions that occur in adults, most take place while eating, leading to either bone or meat bolus impaction. . Flexible endoscopy is the ideal choice for both diagnostic and therapeutic purposes in the management of upper GI tract foreign bodies with a success rate of over 95% and with minimal complications. The aim of the current study was to report our clinical experiences in the endoscopic management of Foreign bodies' ingestion in our hospital.

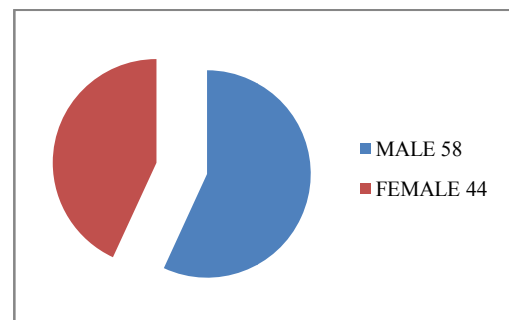
Patients and Methods

This study was conducted on patients (age 2- 70 years) with suspected FB ingestion who visited the emergency department or outpatient clinic or during hospitalization in our hospital between January 2011 and December 2018. A total of 102 patients were included in the study. Upper GI endoscope was done after clinical examination and radiological imaging. Depending on the nature and location of the foreign bodies,

we used a wide diversity of endoscopic devices (retrieval basket, biopsy forceps, polypectomy snare, transparent distal protective hood, and overtube) to perform the procedures. The clinical variables analyzed were age, sex, the type, number, and location of FB, associated upper gastrointestinal diseases, endoscopic methods, accessory devices, symptoms, and complications during the procedure

RESULTS

Of the 102 adult patients with suspected foreign bodies' ingestion, 58 were males and 44 were females (male/female: 1.3/1). The range of age at diagnosis was 2 –70 years, with a median age of 9 ± 4 years. Most of patients were presented within one hour to 6 days of ingestion of FB.



77 patients were (75.7%) presented within 24 hours of ingestion. Most of the patients were asymptomatic & other common symptoms were dysphagia & drooling of saliva in 61

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followed by vomiting in 52 patients. Eight patients (7.8%) had underlying predisposing factor. Foreign body removed were Coin in 40 patients, button batteries in 12 patients, metallic object in 10 patients, Dentures in 14 patients and food bolus in 20 patients.

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 72 patients, and in stomach in 30 patients. Various type of FB was removed. The most common FB was coin (39.2%) followed by button batteries Other type was metallic objects (ear ring, safety pin, and hair clip), food bolus, fish bone, plastic materials and glasses. The selection of endoscopic management methods and accessory devices depends on the location and type of foreign bodies ingested. The most common device used was Rat tooth forceps, for both food boluses and sharp foreign bodies (used in 51.2% of all identified foreign bodies), which achieved a 98.8% success rate of foreign bodies removal in any part of gastrointestinal tract. Snare, Basket and Roth net were also used to retrieve the foreign bodies. The push technique (pushing the food bolus into the stomach) was applied for food bolus impaction. 6 patients who had impaction of dentures in oesophagus required surgery. 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.

Table 1 Type of foreign body ingested

Type of FB	Number	Percentage
Coin	40	39.2%
Button battery	12	11.8%
Metallic objects	10	9.8%
Dentures	14	13.8%
Food bolus	20	19.6%
Fish / mutton bone	4	3.9%
Magnets	2	1.9%

DISCUSSIONS

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. 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. Endoscopic management is a safe and highly effective procedure for extracting ingested foreign bodies and food bolus impaction

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