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Rare Case of Accidental Ingestion of Tooth Brush: Endoscopic Retrieval

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Authors' contributions

This work was carried out in collaboration between both authors. Author JT done the literature search studies, experimental analysis, manuscript preparation, manuscript editing review. Author BT provides concepts, design and definition of intellectual content, guarantor, data acquisition, data analysis and statistical analysis. Both authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Foreign body accidental ingestion of size 20 cm in length in a sane person is a rare phenomenon. We are here presenting a case of 50 year old male patient with accidental ingestion of toothbrush and its endoscopic retrieval with the help of polypectomy snare.

Keywords: Endoscopy; foreign body; tooth brush; polypectomy snare.

1. INTRODUCTION

Foreign body (FB) ingestion is not an uncommon entity that will present to gastroenterology endoscopy department for the management and treatment. It has both diagnostic and therapeutic approach for most of the foreign bodies. Esophageal foreign bodies are not as hazardous as airway foreign bodies. These foreign bodies are usually found at the constrictions of the (oesophagus cricopharynx), the crossover of the aortic arch at the mid esophagus, and the lower end). Foreign bodies that crosses the stomach can rarely develops any symptoms, as 80% of FB which reaches the stomach pass spontaneously. Only less than 1% of patients required operation, which has no mortality [1-8].

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Herewith we are presenting a rare case of accidental ingestion of Toothbrush which was successfully managed by endoscopy.

2. CASE REPORT

A 50 year old male patient came to casualty of our hospital in the early morning with a history of ingestion of toothbrush while brushing his teeth. History of ingestion of his tooth-brush while cleaning the posterior third of tongue. There was no complains of any pain in abdomen or difficulty in breathing, patient was vitally stable.

As the patient had no other complains, he was offered diagnostic Upper G. I. endoscopy without any radiological investigations. Endoscopy was performed with video endoscope under topical anaesthesia. We found a toothbrush at the lower end of oesophagus, just proximal to the lower oesophageal sphincter (LES) on pushing the scope further, the distal end of the toothbrush was found reaching up to the body of stomach. There was no obvious injury to oesophagus or stomach. Both the ends of the tooth-brush were blunt and hence it was decided to retrieve it with a snare. The proximal end of the brush was held with a snare and it was brought out successfully without any difficulty. The toothbrush was found to be 20 cm in length. The procedure was well tolerated by the patient and was discharged from the hospital on same day after starting liquids orally.

3. DISCUSSION

The foreign bodies ingested usually by adults are bones. The approach depends upon the type of material and amount ingested and on the presenting symptoms and physical examination findings. In 80% ingestion cases, the ingested material ordinarily passes without any complications through the gastrointestinal tract. Endoscopy is done only in 20% of cases, and surgery in less than 1%.

It is sensible to classify ingested foreign bodies by material, surface consistency, size and chemical composition, as the characteristics determine the urgency of intervention [9-11]. Foreign bodies longer than 6 cm and with a diameter of more than 2.5 cm make the duodenal passage difficult [12].

3.1 Classification of Foreign Bodies

3.1.1 Size

- Length </> 6 cm

3.1.2 Surface consistency

- Rounded versus sharp edges
- Sharp/pointed versus blunt

3.1.3 Material/contents, for example

- Battery
- Food
- Drugs
- Magnet

3.1.4 Characteristics

- Metallic
- Radio-dense
- Chemically inert

The primary diagnosis of the ingested foreign body is elemetarily done by the history given by the patient, Based on the history we can

Table 1. Indication for esophagogastroduodenoscopy and recommendations for immediate further treatment [1]

Urgent need for endoscopy	Type of foreign body (FB)	Recommended treatment
Emergency esophagogastroduodenoscopy	Bolus impaction with complete occlusion of the esophagus	Inpatient/outpatient
	Inpatient	Batteries
	SharpFB	Inpatient
Esophagogastroduodenoscopy within 12–24 hours	Magnets	Inpatient
	Other FB in the esophagus	Outpatient/inpatient
	FB >6 cm in length	Outpatient/inpatient
Elective esophagogastroduodenoscopy	FB >2.5 cm diameter	Outpatient
	Prepyloric FB	Outpatient

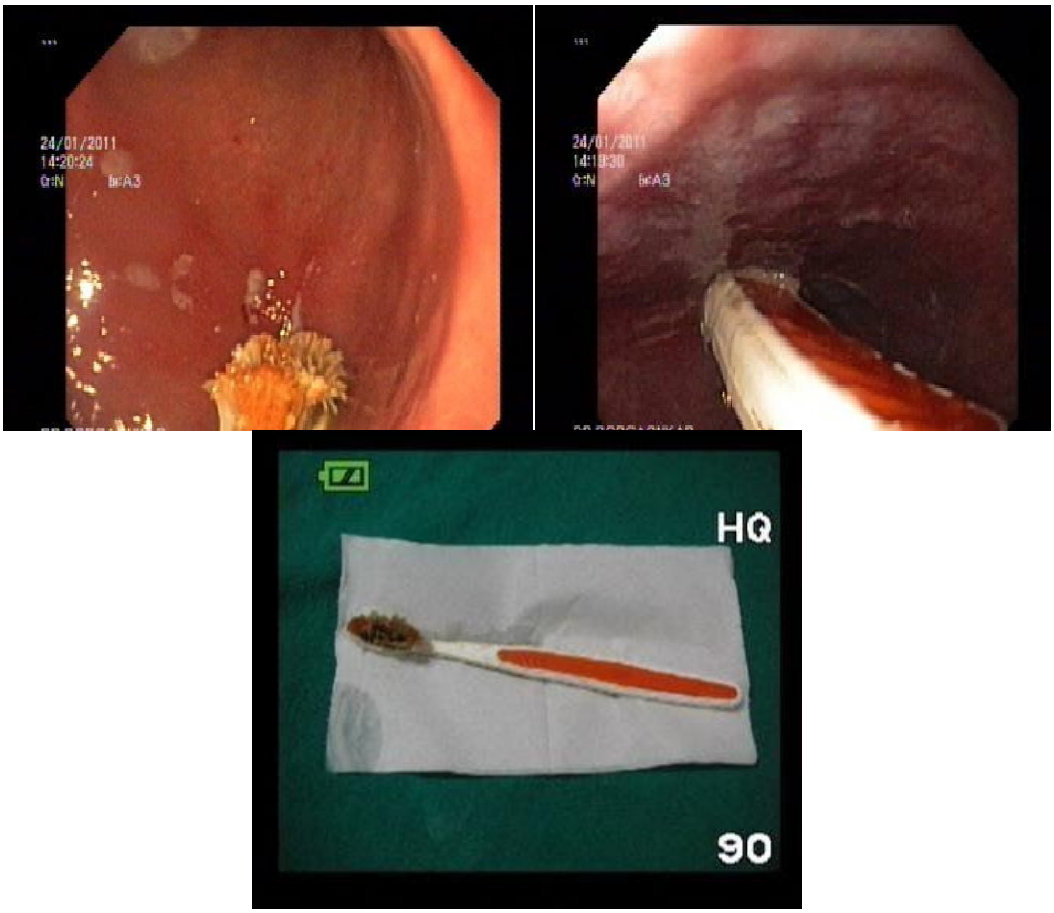

Fig. 1. Clinical photographs

evaluate the type of ingested material and need for an urgent intervention. Radiological investigations are recommended by many authors as a screening method of choice such as x-rays based on this we can get information regarding the number, site, configuration of the material ingested [13].

Although some small foreign bodies, such as bones are dense and show in the radiograph, they may be hidden by fluids and tissue masses. Identification of Foreign bodies can be easily performed by computed tomography (CT), as suggested by Coulier et al. With sensitivity (100%) and specificity (91%), CT has vital role in the diagnosis of ingested foreign bodies [14].

Endoscopic extracton is mandatory in 1/5 cases of foreign body ingestion. A foreign body in the upper intestines are mostly removed by esophagogastroduodenoscopy.

Flexible endoscopy is the leading therapeutic and diagnostic approach in the foreign bodies management and impaction of food bolus in the gastrointestinal tract, with success more than 95% and complication upto 5% [2,3,5,6]. The choice of device is analysed by the shape and size of the foreign body ingested, by the preference and practice of the endoscopist's. Foreign body removal with standard biopsy forceps is seldom successful because of the small opening in forcep, width [3]. Extraction forceps have variety of jaws configurations: alligator-tooth, rat-tooth or shark-tooth. Retrieval graspers, Polypectomy snares, Endoscopic baskets may be useful. With sharp objects, the foreign body should be grasped in such a position that the sharp or pointed end trails distally to the endoscope, thus lowering the risk of a procedure-related perforation or mucosal damage during extraction.

4. CONCLUSION

Long foreign bodies must be grabbed at the very end of the object to allow retrograde removal

through the esophagus [2–7]. After uncomplicated and successful removal of foreign bodies, the patient may be discharged. If foreign bodies cannot be removed, a tailored approach must be made depending on the size,shape, and type of the foreign. Technically difficult extraction should be admitted for observation, ingestion of multiple foreign bodies is associated with risk for complications and extensive mucosal injury due to ingestion or endoscopic treatment of the foreign body. If the extraction is not sucessful endoscopically, inpatient observation and treatment is must for sharp pointed objects and batteries. Radiographs are recommended for sharp-pointed objects. For batteries in the duodenum or beyond, radiography every 3–4 days. Surgery may be considered for removal of dangerous foreign bodies that passes ligament of Treitz and lack of progression within 3 days. Long objects in the duodenum need surgical treatment when endoscopic efforts fail [1–3, 5–7].

CONSENT AND ETHICAL APPROVAL

As per university standard guideline, participant consent and ethical approval have been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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