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An Unusual Case of Accidental Ingestion of a Toothbrush

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Abstract

Introduction: Foreign body ingestion is a common presenting complaint in the emergency department. While ingestion of small foreign bodies like coins and button batteries is not uncommon, ingestion of long and rigid foreign bodies like toothbrush is very rare.

Case presentation: We describe a 36-year-old man who presented to us after accidental ingestion of a toothbrush. The patient underwent urgent endoscopic removal; Psychiatric evaluation revealed an acute and transient psychotic disorder in him.

Conclusion: Ingestion of long and rigid foreign bodies like a toothbrush is an uncommon entity. Such foreign bodies when ingested find it difficult to maneuver through the GI tract, which makes their spontaneous passage almost impossible. Their ingestion is associated with increased risk of impaction, perforation and, bleeding. Therefore, early removal of the ingested toothbrush is recommended before complications develop.

Key words: Case Reports; Endoscopy; Foreign Bodies; Psychotic Disorders; Toothbrush

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INTRODUCTION

Foreign body ingestion is a common presenting complaint in emergency department (ED), especially in the pediatric age group (1). Almost 80-90% of the ingested foreign bodies are known to pass spontaneously through the gastrointestinal (GI) tract, without requiring any intervention, whereas the rest 10-20% may require endoscopic removal and < 1% require surgical intervention (2). While ingestion of small foreign bodies like coins and button batteries is not uncommon, ingestion of long and rigid foreign bodies like toothbrush is very rare. Here, we describe a 36-year-old man who presented to us after accidental ingestion of a toothbrush.

CASE PRESENTATION

A 36-year-old man without any known previous medical ailments came to the ED with a history of accidental swallowing of a toothbrush 12 hours back when the patient was cleaning his throat. He was complaining of abdominal pain, which was constant, dull aching, and localized to the left upper quadrant. There was no history of vomiting, GI bleeding, constipation, obstipation, or abdominal distension. His vital signs were within normal limits. Physical examination was mostly unremarkable except for mild epigastric tenderness. Plain chest and abdominal X-ray did

Figure 1: Axial view of non-contrast CT image of patient's abdomen showing a toothbrush in the stomach

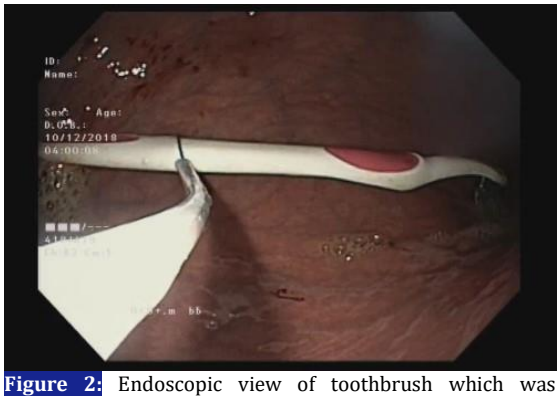

Figure 2: Endoscopic view of toothbrush which was grabbed with polypectomy snare

not reveal the presence of any foreign body. Non-contrast computed tomography (CT) scan of the abdomen was performed, which revealed the presence of a toothbrush in the stomach (Figure 1). There was no sign of bowel perforation like discontinuity of bowel wall, presence of extraluminal air, and bowel wall thickening on CT images. Upper gastrointestinal endoscopy (UGIE) was performed under local anesthesia, which showed the toothbrush in the stomach, with its head against the pylorus. The toothbrush was grabbed using a polypectomy snare and was successfully removed (Figure 2). The procedure was uneventful. On detailed evaluation, the patient was found to have auditory hallucinations, persecutory delusions, and had increased religious thoughts. Psychiatry consult was sought, and a diagnosis of an acute and transient psychotic disorder (ATPD) was made. The patient was started on antipsychotic Olanzapine 10mg q24h and advice to follow up in psychiatry out-patient department.

Discussion

Usually, most of the ingested foreign bodies commonly lodge in the pylorus of the stomach or the duodenal C-loop or at the ileocecal valve (3). Ingested toothbrushes, too, similarly have been reported at various locations in the GI tract like parapharyngeal space, esophagus, stomach, ileum, and colon causing various complications like, rupture of pharyngeal mucosa, intestinal perforation, colohepatic fistula with hepatic abscess, and even death (4-7). It seems that, the first case of successful endoscopic removal of an ingested toothbrush was reported in 1983 (8).

European Society of Gastrointestinal Endoscopy (ESGE) clinical guideline for removal of foreign body in the upper gastrointestinal tract in adults recommends, CT scan as the imaging modality of choice in all patients, especially those with suspected perforations or other complications that may require surgery (9). Furthermore, the ESGE recommends emergent therapeutic esophagogastroduodenoscopy, preferably within 2 hours, but at the latest within 6 hours, for foreign bodies inducing complete oesophageal obstruction and for sharp-pointed objects or batteries in the esophagus and urgent therapeutic esophagogastroduodenoscopy (within 24) hours for other esophageal foreign bodies with incomplete obstruction (9).

For sharp-pointed objects, magnets, batteries and, large/long (> 5 - 6 cm) objects in the stomach, ESGE recommends urgent therapeutic esophagogastroduodenoscopy (within 24 hours). For medium-sized (≥2-2.5cm diameter) blunt foreign bodies in the stomach non-urgent therapeutic esophagogastroduodenoscopy (within 72 hours) is suggested. It is recommended to use the suitable extraction devices according to the type and location of the ingested foreign body. If foreign bodies cannot be removed, a case-by-case approach depending on the size and type of the foreign body is suggested (9).

Toothbrush ingestion has been rarely reported in healthy persons (10). Majority of the previously reported cases of toothbrush ingestions have been in patients with psychiatric illnesses like bulimia and schizophrenia. Therefore, a thorough evaluation for underlying psychiatric illness is advisable in all patients presenting with such uncommon ingestions. Though our patient initially complained of accidental ingestion of toothbrush, however on a thorough evaluation he was found to have underlying ATPD. ATPD has certain key features, such as acute onset (less than two weeks) and rapidly changing, variable polymorphic picture, which is accepted as required criteria and stress as an additional criterion. Majority of patients will have complete recovery in 2-3 months (11).

Conclusions

Ingestion of long and rigid foreign bodies like a toothbrush is an uncommon entity. Such foreign bodies when ingested find it difficult to maneuver through the GI tract, which makes their spontaneous passage almost impossible. Their ingestion is associated with increased risk of impaction, perforation and, bleeding. Therefore, early removal of the ingested toothbrush is recommended before complications develop.

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Authors' contribution

RM wrote the manuscript, NB, KK, RM managed the case and acquired images. PA revised the manuscript.

Conflict of interest

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