



CASE REPORT

Case Report: Swallowed toothbrush in the stomach of a 56 year female at St Mary's Hospital Lacor, Uganda [version 1; referees: 1 approved with reservations, 1 not approved]

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Abstract

Toothbrush swallowing is a rare occurrence. Toothbrush swallowing presents a risk of impaction and perforation along the gastrointestinal tract. This case report describes a 56 year old female that presented to the emergency unit of St Mary's Hospital Lacor with a 1 day history of chest pain after a toothbrush was pushed down her throat by a traditional healer who was managing her for pharyngitis. The chest pain was associated with difficulty in breathing. She also reported dull abdominal pain. There was no history of vomiting or drooling of saliva. On examination, we found that she was in pain and had respiratory distress with a respiratory rate of 32 breath/ min and was using accessory muscles. There was no oedema, anaemia or jaundice. Blood pressure of 120/80 mmHg and pulse rate of 87 beats/ min. The abdominal findings were normal, but ultrasound scan suggested that the toothbrush was in the stomach. The plain erect abdominal x-ray was inconclusive. She was admitted to the ward for conservative management. After 2 weeks we decided to do exploratory laparotomy and we found the toothbrush in the stomach, that we removed and closed the abdomen in layers. Post-operatively the patient recovered uneventfully on the ward. Toothbrush swallowing is a rare occurrence. The commonest foreign bodies ingested by adults are bones, spoons and dentures. Toothbrush ingestion occurs commonly among patients with psychiatric conditions like bulimia or anorexia nervosa, schizophrenia and bezoar. Most swallowed toothbrushes have been found in the esophagus or the stomach of affected patients. Most people who swallowed their toothbrushes did so entirely without erotic intent, as with this case where the patient had the brush pushed down her throat by a traditional healer. This is the first case of toothbrush swallowing in this hospital.

Keywords

swallowed, toothbrush

Open Peer Review

Referee Status:

	Invited Referees	
	1	2
version 1 published 18 Apr 2018	 report	 report
1 Selwyn Selvendran , St George Hospital, Australia		
2 Doreen Nakku , Mbarara University of Science and Technology, Uganda		
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Introduction

Toothbrush swallowing is a rare occurrence¹⁻³. The most common foreign bodies ingested by adults are bones of fish or chicken, spoons, and dentures which occurs during meals^{3,4}. Toothbrush ingestion most commonly occurs in patients with psychiatric conditions like bulimia or anorexia nervosa, schizophrenia and bezoar¹⁻³. Those with bulimia try to induce emesis via manual pharyngeal stimulation using the toothbrush. Most swallowed toothbrushes have been found in the esophagus or the stomach of affected patients^{1,3}.

Case description

The patient was a 56 year old female, peasant farmer from Tobora village in Oyam District, Northern Uganda presented to the emergency unit with 1 day history of chest pain after a toothbrush was pushed down the throat by a traditional healer who was managing her for pharyngitis. The traditional healer was scrapping the slough that was found on the walls of the oropharynx. When the traditional healer realized she had pushed the toothbrush far down and she could not retrieve it, she told her to come to hospital. She came to hospital the next day with complains of chest pain with associated difficulty in breathing. She also complained of mild abdominal pain that was dull in nature. There was no history of vomiting or drooling of saliva. On examination, the middle aged woman was in pain and distress, she did not have oedema, anaemia or jaundice. Her blood pressure was 120/80 mmHg and pulse rate of 87 beats/min. In regards to the respiratory system, we found that she was in distress, with a respiratory rate of 32 breath/min and she was using accessory muscles. There was no stridor, trachea was centrally located and she did not have any tenderness on the chest wall. There was normal and equal air entry on auscultation. The laboratory blood results were normal with white blood cell count 3.8×10^9 /l, hemoglobin 14.1 g/dl, hematocrit test 40.96% and platelet count 176×10^9 /l. We found normal abdominal findings. An abdominal ultrasound scan suggested that the foreign body was in the stomach (Figure 1) but the erect abdominal x-ray was not conclusive (Figure 2).

She was admitted to the ward and given paracetamol for the pain and omeprazole (PPI) for the dyspepsia. Our endoscopy machine had broken down so we were unable to do upper GI endoscopy. After close observation for about 2 weeks, a decision to perform an exploratory laparotomy was made. We made a midline supra-umbilical incision about 8 cm, deepened it into the abdominal cavity. Palpated the stomach and found the foreign body. We made a transverse incision of about 2 cm on the fundus and delivered the toothbrush through the incision (Figure 3). The incision was then close in 2 layers using vicryl 2.0. We then irrigated the abdominal cavity with 1 litre of warm normal saline and closed the abdomen in layers. The toothbrush was about 20cm long (Figure 4)

Post operatively the patient recovered well on the ward and she was discharged from hospital. There were no adverse and unanticipated events.

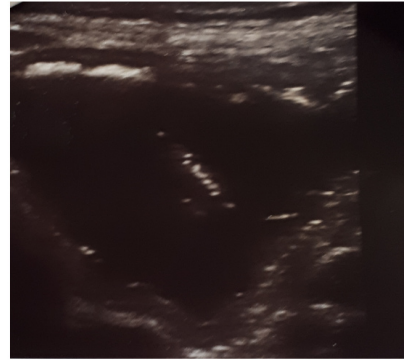


Figure 1. Abdominal ultrasound scan of patient. Results suggested that the foreign body was in the stomach.



Figure 2. Erect abdominal x-ray of patient. X-ray did not identify the foreign body.

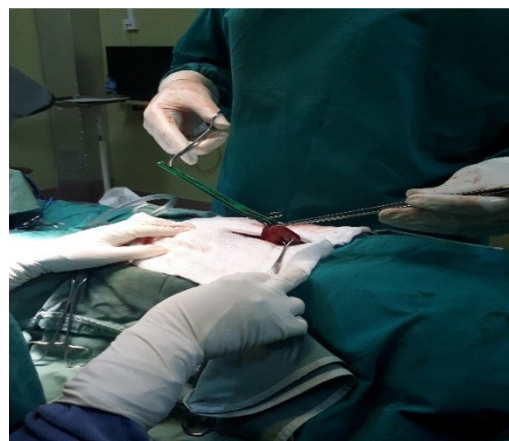


Figure 3. Image of toothbrush being removed via the fundus during surgery.



Figure 4. Image of toothbrush removed from the patient.

Discussion

Toothbrush swallowing is a rare occurrence^{1,3}. Most people who swallowed their toothbrushes did so entirely without erotic intent^{1,3} as with this case, and no literature has shown that a traditional healer has previously caused such morbidity to their client. This case demonstrates a very unusual cause of toothbrush ingestion, unlike any that have been reported previously, especially in patients without psychiatric problems. There has been no previously reported case of a toothbrush swallowed in this hospital.

Toothbrushes usually show a characteristic radiographic image with parallel rows of short metallic radiodensities due to the metallic plates that hold the bristles in place but this was not the case in our patient probably because the toothbrush was lying sideways¹. Because no cases of spontaneous passage have been reported, early endoscopy and prompt removal is recommended to minimize morbidity and to avoid prolonged hospitalization¹⁻⁵.

Ethics and consent

Written informed consent was obtained from the patient for teaching and publication of this case report and accompanying images.

Data availability

All data underlying the results are available as part of the article and no additional source data are required.

Competing interests

No competing interests were disclosed.

Grant information

This work was supported by the African Academy of Science through a DELTAS Africa Initiative Grant [DEL-15-011] as part of the THRiVE-2 initiative.

That the funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

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Open Peer Review

Current Referee Status:  

Version 1

Referee Report 25 September 2018

doi:10.21956/aasopenres.13908.r26600



Doreen Nakku 

Department of ENT Surgery, Mbarara University of Science and Technology, Mbarara, Uganda

1. The abstract is very wordy and could be summarised further with elimination of some details that reappear in the main text.
2. Grammatical errors need to be addressed in different sections of the document. I also advise that several of the short sentences be combined to reduce on text fragmentation.
3. In the case description section, the following need clarification:
Did the patient present history of having swallowed a foreign object while being attended to by the traditional healer? If so, this would be a big commission in the history given the patient was conscious and such information would have guided early diagnosis. Furthermore it is not clear what the conservative management over 2 weeks involved and why the laparotomy was decided on after 2 weeks.
4. Other than toothbrush swallowing being a rare occurrence which is repeated several times in the document, the relevance of the case report to science is vague and is not well sated in the discussion.

Is the background of the case's history and progression described in sufficient detail?

No

Are enough details provided of any physical examination and diagnostic tests, treatment given and outcomes?

Partly

Is sufficient discussion included of the importance of the findings and their relevance to future understanding of disease processes, diagnosis or treatment?

Partly

Is the case presented with sufficient detail to be useful for other practitioners?

Partly

Competing Interests: No competing interests were disclosed.

I have read this submission. I believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Referee Report 09 August 2018

doi:10.21956/aasopenres.13908.r26542



Selwyn Selvendran

Department of Surgery, St George Hospital, Kogarah, NSW, Australia

I think this paper is well written.

However, I have some following concerns regards to the management of this patient.

“Her blood pressure was 120/80 mmHg and pulse rate of 87 beats/min. In regards to the respiratory system, we found that she was in distress, with a respiratory rate of 32 breath/min and she was using accessory muscles.”

On admission, the patient was distressed, had pain and was tachypnoea. Her respiratory rate usually would usually a good indicator of physiological distress and why wasn't this patient taken to the theatre early?

“She did not have any tenderness on the chest wall.”

Usually, patients do not have chest wall tenderness with perforated viscus.

“After close observation for about 2 weeks, a decision to perform an exploratory laparotomy was made.”

Unnecessarily prolonged hospital stay for observation when the procedure could be done early and the patient could have been discharged.

”Palpated the stomach and found the foreign body.”

The stomach was mobilised and the foreign body was identified in the body of the stomach.

“We made a transverse incision of about 2 cm on the fundus and delivered the toothbrush through the incision (Figure 3).”

A 2 cm transverse incision was made on the fundus and the toothbrush was extracted through this incision (Figure 3).

Why was the incision made on the fundus? The body would have been easier to deliver to the surface and the laparotomy wound could have been smaller.

“We then irrigated the abdominal cavity with 1 liter of warm normal saline and closed the abdomen in layers.”

If there was no contamination or perforation why the abdominal cavity was irrigated with 1L of saline?

“Toothbrush swallowing is a rare occurrence. Most people who swallowed their toothbrushes did so entirely without erotic intent as with this case, and no literature has shown that a traditional healer has previously caused such morbidity to their client.”

Previously reported cases indicate, as with our patient, that the toothbrushes were not swallowed for erotic reasons. However this was the first time a traditional healer is implicated in toothbrush swallowing.

Traditional healers have implicated in many morbidities in patients.

I am not certain that this reported case adds any value to the literature. Foreign body swallowing is well reported. In this case the surgery was delayed and resulted in a prolonged hospital stay. There aren't any sufficient materials or learning points in this article for future understanding of disease processes, diagnosis or treatment.

Is the background of the case's history and progression described in sufficient detail?

Partly

Are enough details provided of any physical examination and diagnostic tests, treatment given and outcomes?

Yes

Is sufficient discussion included of the importance of the findings and their relevance to future understanding of disease processes, diagnosis or treatment?

No

Is the case presented with sufficient detail to be useful for other practitioners?

No

Competing Interests: No competing interests were disclosed.

I have read this submission. I believe that I have an appropriate level of expertise to state that I do not consider it to be of an acceptable scientific standard, for reasons outlined above.
