

# Tooth Brush In Stomach

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## Abstract

Foreign bodies of the upper aero-digestive tract are common problems dealt with by the otolaryngologist. Toothbrush is a rare foreign body of upper gastrointestinal tract and only about 40 cases have been reported so far. It is seen mainly in females affected by bulimia and anorexia nervosa. Because of its unique shape, toothbrush cannot pass the pylorus. Prompt removal is advised to avoid complications. Endoscopic removal is the method of choice. For impacted toothbrush a gastrotomy or duodenotomy may be needed.

## INTRODUCTION

In adults foreign body ingestion is usually accidental. In the setting of some underlying mental illness patients may swallow non-food objects deliberately and can do so repeatedly. Fortunately the vast majority of ingested objects pass through the gastrointestinal tract spontaneously. Some of these foreign bodies can become impacted in due to the size and shape of the foreign body or due to the physiological or pathological narrowing of the gastrointestinal tract.

A toothbrush is a rare esophageal foreign body and because of its shape and size it cannot pass the gastrointestinal tract spontaneously. A few cases have been reported so far. This is commonly seen in females affected with bulimia or anorexia nervosa.<sup>1,2,3</sup> We present a case of accidental ingestion of toothbrush with no history of bulimia or other psychiatric disorders.

## CASE-REPORT

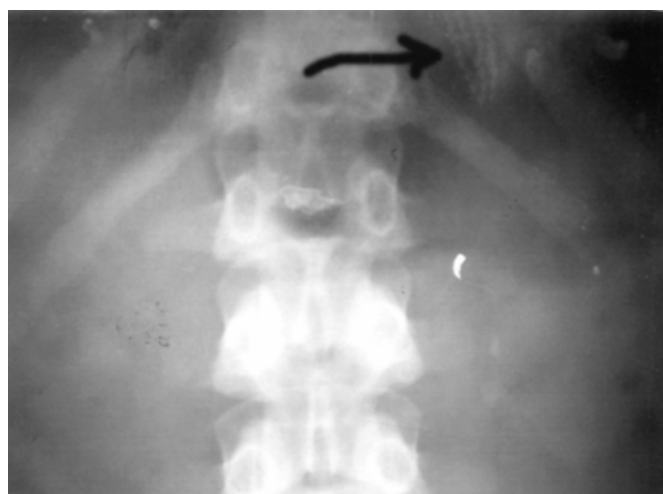
A 20-year lady presented with a history of ingestion of a toothbrush around one hour back in the emergency department of Pt. B. D Sharma PGIMS Rohtak. The patient was brushing her teeth when she happened to take the toothbrush posteriorly to clean the posterior part of tongue that caused her to gag and during this episode she swallowed the toothbrush. Following the ingestion patient had no pain, dysphagia, or dyspnea. There was no history of any mental illness or eating disorder.

The patient's general physical examination was normal. Throat examination revealed no injury marks. X-ray chest

P.A view and X-ray abdomen PA view revealed a toothbrush lodged in the lower end of the esophagus and in stomach with the bristle end facing down (Fig 1).

## Figure 1

Figure 1: X- ray Abdomen AP view showing the bristle end in the stomach.



The patient was taken up for the rigid esophagoscopy under general anesthesia and the posterior end of the toothbrush was visualized at the lower end of the esophagus. The rest of the toothbrush including the bristle end was in the stomach (Fig 1); it was grasped with the alligator forceps and was removed without any complications. The removed toothbrush was 19 cm in length (Fig 2). The esophageal mucosa was normal. The patient was discharged after 24 hours.

**Figure 2**

Figure 2: Removed toothbrush.



## DISCUSSION

Toothbrush ingestion is a rare cause of foreign body of upper gastrointestinal tract and only about 40 cases have been reported so far. This is most commonly seen in females in the age group 15- 23 years of age. Most of these patients were diagnosed with bulimia or anorexia nervosa. The toothbrushes were found in the esophagus, stomach or impacted in the duodenum<sup>1,4</sup>.

The characteristic radiological image of a swallowed toothbrush shows parallel rows of short metallic radio-densities due to the metallic plates that hold the bristles in place. A patient with eating disorder will use the posterior end of the toothbrush to induce vomiting. A clue to diagnosis is that the toothbrush in the esophagus on X-ray is upside down with bristle end proximal<sup>2</sup>. In our case the bristle end was found to be distal inside the stomach suggesting an accidental ingestion.

Most foreign bodies reaching stomach will pass through the gastrointestinal tract. A toothbrush, because of its unique shape, cannot pass the pylorus easily. Prompt removal from the stomach is advised to minimize gastritis and ulceration, and to avoid perforation<sup>3</sup>.

Endoscopic removal is the method of choice. However, when the toothbrush is lodged horizontally in the gastric body and outlet, the shape of the stomach may preclude endoscopic removal. The surgeon/ endoscopist should be prepared to proceed to gastrotomy. Wilcox et-al described two cases where endoscopic removal of toothbrush failed and minilaparotomy was done to remove the tooth brush via a gasrtotomy<sup>3</sup>.

An ingested toothbrush may get impacted in the stomach. Saxena et al reported a case of a 45 year old male where a toothbrush was lying horizontally in the stomach with the

bristle end in the duodenum, which could not be removed by endoscopy and was removed by gastrotomy<sup>5</sup>.

Toothbrush after its passage from stomach is likely to be impacted in the duodenum. The normal duodenum contains relatively fixed angulations at the junction of the second and third portions and at the ligament of Treiz. Long thin objects are prone to impact at these sites<sup>6</sup>. In infants objects of only 2-3 cm may impact in the second part of the duodenum, while older children and adults may allow objects up to 5-6 cm to pass<sup>7</sup>. Sachdeva et al reported a case of impacted toothbrush in the duodenum which required duodenotomy for its removal<sup>4</sup>.

Neglected toothbrush can migrate from gastrointestinal tract. Kobak reported transit of two toothbrushes from the intestinal tract through the abdominal wall in a schizophrenic patient<sup>8</sup>.

Till date no case of spontaneous passage of a tooth brush has been reported, and because of complications such as pressure necrosis and perforation can occur prompt endoscopic removal is recommended<sup>9</sup>. Successful removal is described both rigid and fiber optic endoscopy under local or general anesthesia, but because of toothbrush's irregular shape, laparotomy with gastrotomy or duodenotomy may be required<sup>4,5,10</sup>. Patients with underlying bulimia and anorexia nervosa may have a tendency to repeat such act of toothbrush swallowing and the finding an unusual foreign body in the esophagus or stomach should make the attending physician suspicious of these disorders<sup>1,3</sup>.

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