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TOOTHBRUSH INGESTION: ROLE OF DENTAL HEALTH CARE PROVIDER - A CASE REPORT

KEY WORDS: Swallowed Toothbrush, Oral Hygiene, Laprotomy

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ABSTRACT

Ingestion of toothbrush can cause serious and potentially fatal complications about which the dental health care providers have little knowledge. Purpose of this case report and comprehensive review of literature is to create awareness among the dental practitioner and dental hygienist regarding diagnosis, complication, management and prevention of toothbrush ingestion. A 23 year old male patient reported with a history of constant dull abdominal pain since last three weeks. It was assumed by the investigating team that due to fall our patient must have lost control over the toothbrush and it got forced into his throat and he swallowed it. Patient was informed about the present condition and , laprotomy was performed under general anesthesia for removal of the foreign body.

INTRODUCTION

In 2003 toothbrush was selected as the number one invention by Lemelson-MIT invention index and this revolutionized the concept of personal oral hygiene and is ubiquitously recommended by dentists and dental hygienist as the most effective means of maintaining oral hygiene and oral health[1]. But the improper use of toothbrush can be associated with various complications ranging from simple cervical abrasion to severe oropharyngeal injuries and toothbrush ingestion.

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Case Report

A 23 year old male patient reported to our surgical department, Gayatri hospital, Raigarh district, India, with a history of constant dull abdominal pain since last three weeks. He had consulted many general practitioners for the same complaint. He was diagnosed to have gastritis for which proton-pump inhibitors were prescribed with no long term relief, with subsequent relapse of pain.

On examination he was conscious,oriented and well cooperative. The medical history was non- contributory and he was a non-alcoholic. No history of dysphagia or vomiting or loose stools was present. Patients vitals were normal. On palpation tenderness was present over the right hypogastric region. Routine blood, urine, and stool investigations were normal. Since the exact cause of pain could not be ascertained plain X-ray of abdomen was done and it showed presence of a foreign body in stomach.

Reference from dental department was taken to confirm the nature of the foreign body identified in plain abdominal x-ray. X-ray revealed rows of stippled radio-opacity arranged in three parallel rows arranged in hexagonal shape. Its shape looked like a toothbrush. figure 1 Hence it was concluded that our patient had swallowed a toothbrush. The most likely position of the toothbrush head was in the stomach.

On repeated questioning patient gave a history of fall with loss of consciousness for 20 minutes three and half months ago while he was riding a bike with toothbrush in the mouth. After recovery he had mild throat pain but no Dysphagia or Dyspnea. Following trauma patient remained asymptomatic for more than 3 months. There was no history of any mental illness or eating disorder.

It was assumed by the investigating team that due to fall our patient must have lost control over the toothbrush and it got forced into his throat and he swallowed it. Patient was informed about the present condition and , laprotomy was performed under general anesthesia for removal of the foreign body. The Patient recovered uneventfully and was discharged after 7 days. After one year of follow-up, the patient was asymptomatic and no fresh complaint was reported.

DISCUSSION

Ingestion of foreign body of dental origin such as extracted or avulsed tooth, endodontic file etc. have been frequently reported and reviewed in dental and medical journals. Unfortunately there are many minor and major complications reported in literature due to improper use of toothbrush. table 1. Toothbrush ingestion is a rare cause of foreign body in the upper gastrointestinal tract but it can have devastating potential complications. Among the myriad of foreign body swallowed, toothbrush ingestion is rare and most cases are seen in psychiatric disorders.[2] However, rarely, toothbrushes can be swallowed by patients with no psychiatric background as well. table 2

The toothbrushes have been reported in the esophagus, stomach, colon or impacted in the duodenum. However 80% of ingested foreign bodies pass spontaneously without any complication.[3] It may be due to the three physiological narrowing involving the pylorus, duodenal C-loop and ileocecal valve . Foreign bodies longer than 10 cm, such as a toothbrush, cannot negotiate the duodenal C-loop due to its fixed retroperitoneal position.[4]

This fact makes the possibility of complications such as gastritis, ulceration and perforation higher, hence associated with a considerably high mortality and morbidity.[5,6]

Orientation of the toothbrush gives a clue to the cause of

ingestion. If patient swallows the toothbrush while inducing vomiting, handle of the toothbrush will enter the oesophagus first. On the other hand, if patient swallows it accidently, head of the toothbrush i.e. the bristle portion of it will enter first.

This orientation is retained in the stomach and may influence treatment. It is easier to grasp the head rather than the handle by endoscopic means, unless the handle has a hole. Removal of long foreign bodies from the stomach is influenced by the patient's clinical condition and technical abilities of the endoscopist. Early endoscopy and removal is strongly recommended.[7,8,9] Endoscopic removal of toothbrushes in the oesophagus and stomach is usually possible if the proximal end can be securely grasped.

In addition, objects longer than 6-10 cm have difficulty in passing the duodenal sweep32. Therefore, in cases of unsuccessful removal of gastric foreign bodies that are longer than 6.0 cm, surgical removal should be considered. If the toothbrush cannot be grasped by endoscope or if it has impacted into the tissues - it can be removed by laparoscopy assisted gastrostomy or laparotomy.[10]

CONCLUSION

A swallowed toothbrush is a special clinical challenge. It never passes through the gastrointestinal tract spontaneously. Early endoscopic retrieval of the toothbrush is critical for reducing morbidity and mortality. In cases when endoscopic removal fails, a laparoscopic surgical approach may be an alternative.

Dental practitioner may be the first specialist to be consulted for the diagnosis of a swallowed toothbrush. None other than oral health care provider can change the presented picture of a toothbrush in our case report. As we recommend toothbrush to our patients, it's our obligation to inform them about these kind of complication. The phrase holds true here " beware and be aware."

Based on our clinical experience and reviewed of literature we present our recommendation to manufacturer table 3 and some modification in oral hygiene instruction manual of the toothbrush. table 4

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