

# Accidental Implant Screwdriver Ingestion: A Rare Complication during Implant Placement

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## Abstract

One of the complications during a routine dental implant placement is accidental ingestion of the implant instruments, which can happen when proper precautions are not taken. Appropriate radiographs should be taken to locate the correct position of foreign body; usually the foreign body passes asymptotically from gastrointestinal tract but sometimes it may lead to intestinal obstruction, perforations and impactions. The aim of this article is to report accidental ingestion of 19 mm long screw driver by a senile patient.

**Keywords:** Implants; Ingestion; Foreign body; Screw driver; Hemorrhage; Perforation

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## INTRODUCTION

The ingestion of instruments or materials used in various dental procedures may occur accidentally in dentistry. Foreign bodies vary in size and shape and range from burs, posts, root pieces, teeth, orthodontic brackets, endodontic instruments (files, broaches), impression materials, implant components, and restorations [1, 2]. Some objects are made of materials that lack radiopacity, which makes them impossible to identify and locate; diagnostic bronchoscopy/endoscopy or computed tomography for localization is then required [3, 4]. Foreign body ingestion is a commonly seen accident in emergencies, usually in children (80%), elderly, mentally impaired, or alcoholic individuals; whereas it may occur intentionally in prisoners or psychiatric patients [5-8].

Implant instruments are usually small and saliva makes them slippery. Thus, they may slip out from operator's hand [8]. Rarely foreign body ingestion results in serious complications, such as intestinal perforation, bleeding, obstructions or impactions. The presence of the foreign body should be confirmed with the use of radiographs. The patient position in the dental chair as well as the patient's medical history is important in preventing serious complications. Usually instruments entered the GI tract pass asymptotically and atraumatically within 2 days to 4 weeks. However there are many potential sites for impactions, among them the ileocecal valve is the most common site. Approximately seventy five percent of perforations occur at or near this site or at the rectosigmoid junction [6, 9].



**Fig 1.** PA radiograph of the abdomen depicting implant screw driver in the stomach.



**Fig 2.** PA radiograph of the abdomen depicting implant screw driver in the intestine.

Only 1 percent of ingested foreign bodies cause an intestinal obstruction requiring surgery [10, 11]. The aim of this article is to document implant screwdriver ingestion along with its consequences and to offer guidance for prevention and management.

### CASE REPORT

A 69 year-old male patient presented with a chief complaint of missing upper left second molar and mandibular left first molar teeth; for which implant placement was planned. Implant placement was done successfully and patient was recalled after 4 months for second stage surgery. During second stage surgery while placing a gingival former on the implant in the region of upper left second molar, the screw driver accidentally slipped from the operator's hand. The operator made an unsuccessful attempt to retrieve the instrument by making the patient spit. There was no sign of coughing, wheezing, choking or shortness of breath.

The patient was taken to the hospital immediately. The case was attended by a gastroenterologist and immediately PA chest and abdominal radiograph were taken confirming the screwdriver to be in stomach (Fig 1).

An endoscopy was planned, which was performed under local anesthesia but the instrument could not be retrieved.

Patient was kept under observation and advised to consume fiber-rich food to enhance intestinal motility and to regularly examine his stools. The patient did not present any signs of discomfort, tenderness or hemorrhage. On the second day again radiographs were repeated and this time screwdriver was located in the intestine (Fig 2); the very same day the patient passed the ingested screwdriver in his stool (Fig 3).

### DISCUSSION

It must be emphasized that preventing complications of foreign body ingestion and aspiration is of great importance.



**Fig 3.** Retrieved 19 mm long implant screw driver.

This applies to the identification of at risk patients by means of comprehensive clinical examination and thorough patient history taking. In our case the patient was senile and apprehensive; there was difficulty in screwing the gingival former in the maxillary posterior region of upper left second molar, from where the instrument slipped. As the patient was in the supine position direct access to oropharynx was eminent.

In this patient, a wide oropharynx (Mallampati class 1)[12] and absence of gag reflex were further contributory factors for ingestion of the screw driver.

Although rare, ingestion/inhalation of a foreign body may lead to serious complications; therefore, immediate radiographic evaluation is a must including PA/lateral chest, lateral neck and abdominal radiographs [13].

Usually, most ingested foreign bodies are expelled in stools without causing any complications in several days to several weeks; for which conservative management of serial radiographs and fiber rich diet is an initial protocol [14, 15]. The object is usually passed. If serial radiographs depict the same location of foreign body or there is a sign of abdominal tenderness or hemorrhage then most likely there is retention, obstruction or intestinal perforation for which an invasive procedure is

indicated and has to be done as early as possible through gastroscopy for its retrieval [16].

The Mallampati score is assessed by asking the patient (in a sitting posture) to open his/her mouth and protrude the tongue as much as possible [12]. The anatomy of the oral cavity is visualized; specifically, whether the base of the uvula, faucial pillar and soft palate are visible. Scoring may be done with or without phonation. Depending on whether the tongue is maximally protruded and/or the patient asked to phonate, the scoring may vary.

#### **Mallampati Scoring [17]:**

- Class I: Soft palate, uvula, fauces, pillars visible.
- Class II: Soft palate, uvula, fauces visible.
- Class III: Soft palate, base of uvula visible.
- Class IV: Only hard palate visible

It is emphasized that all practitioners should take preventive steps during treatment like placement of gauze screen across the oropharynx, tying ligature (dental floss) to instruments, adjusting chair position (sitting position prevents aspiration/ingestion and supine position increases the risk of swallowing)[18] and should be able to manage the patients in emergency situations. Sending a patient home in the belief that a foreign body that slipped into the oropharynx has been swallowed and will pass through the gut may be associated with complications and lead to litigation. Should a foreign body be ingested/aspirated, the patient must be examined clinically and radiographically; diagnosis must be performed immediately by a specialist and patient and his family members must be informed.

#### **CONCLUSION**

This case report illustrates a case of foreign body ingestion in an anxious senile patient having Mallampati class 1, during implant restoration in the posterior maxilla; proper preventive measures may prevent such complications.

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