

**Accidental ingestion of healing abutment during follow up period after second stage surgery of implant placement**

**- A case report**

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**Conflicts of Interest:** Nil

**Abstract**

Ingestion or aspiration of foreign bodies during dental treatment poses an emergency situation. However meticulous handling of the situation can avoid distress and panic to both, the clinician as well as the patient. Timely investigations and early interventions can correct such accidental mishaps and result in successful recovery. Hereby we report a case of accidental ingestion of healing abutment by a 67 year old male patient in the follow up period, i.e., after the second stage surgery of implant placement but prior to the start of prosthetic phase. The patient was completely unaware of his accidental swallowing of the abutment, which was revealed by the clinician during oral examination. Two diagnostic abdominal radiographs were advised. The first one showed the location of the abutment and a second radiograph taken after three days revealed its absence suggesting its expulsion from the intestine.

**Keywords:** abdominal radiograph, healing abutment, ingestion, implant placement.

**Key message:** Accidental ingestion of dental instruments has been documented in the dental literature. The ingested objects include prosthetic crowns, endodontic instruments, implant components etc. However without panicking, it is important to assess the location of the lost instrument so that it can be easily retrieved. If the object gets aspirated it can lead to nausea, cough or airway obstruction and if gets ingested then it may lead to complications such as gastric irritation, mucosal tearing, haemorrhage, malena etc. This case report highlights the fact that there was accidental ingestion of healing abutment by a 67 year old male patient during the follow up period of two weeks before the beginning of prosthetic phase of implant therapy. This situation is rarely encountered, hence reported. Fortunately there were no untoward complications and the abutment got expelled from GIT and was evacuated in stools.

**Introduction**

Quite rarely accidental aspiration or ingestion of dental instruments is encountered in dental practice. Such

incidents can create a distressing situation to the clinician as well as to the patient. It is important to ascertain the exact location of the instrument depending on whether it's aspirated or ingested based on the clinical signs and symptoms of the patient.

The dental literature documents a list of instruments that were either ingested or aspirated that include prosthetic crowns, bridges, endodontic instruments, orthodontic brackets, extracted tooth, dental retainer, implant components, dental mirror and irrigation needle. [1,2,6] The various contributing factors that can cause such mishap include the small size of the instruments, their slippery nature owing to contact with saliva, patient's supine position, limited mouth opening, numbing effect of anaesthetic agents, loss of gag reflex, inadequate lighting, ineffective assistance, unexpected breakage of poor quality instruments, instrument fatigue, difficulty of access especially in posterior areas etc [2]. However careful retrieval of the lost instrument is of vital concern to avoid complications and litigation.

Hereby we report a case of a 67 year old man who had accidentally ingested a healing abutment in the follow up period before beginning of prosthetic phase of implant therapy.

### **Case report**

A 67 year old man reported to the department of Periodontics with a desire to replace his missing teeth in the lower left quadrant with dental implants, for better mastication. His medical history revealed him to be a hypertensive patient and was being treated with beta blockers.

Intraoral examination showed missing teeth in relation to 14, 17, 18, 27, 28 and 36, 37, 38,47,48 regions of upper and lower arch respectively. The remaining teeth present appeared attrited. His dental records included a previously taken OPG that revealed horizontally impacted maxillary

first premolar at the apical region and a root stump in 27 regions. Lower teeth showed mild horizontal bone loss [Fig 1]. As a part of implant protocol a CBCT was advised which revealed thick buccal and lingual cortices in the edentulous area with coarse trabeculae in the cancellous portion suggesting suitability for implant placement. [Fig.2]

Following the protocol of two stage implant placement surgery, a full thickness flap was elevated. [Fig. 3] Two implants of size 4.5x11mm sized were placed in 36 and 37 region and covered with cover screws followed by flap closure. A radiograph was advised which showed the placement of implants with the cover screws in place. [Fig 4]. The patient was rescheduled for follow up after 4 months for second stage surgery following which, the cover screws were retrieved and healing abutments placed. Again a radiograph was advised, which showed placement of healing abutments [Fig.5]. The patient was appointed two weeks later for ensuing the prosthetic phase. This two weeks' time period was given for the soft tissues to remodel and form emergence profile. As the patient returned for the prosthetic phase and was examined orally, to our dismay, there appeared a missing healing abutment from 36 region. On enquiry the patient expressed his unawareness regarding it and neither remembered of swallowing or spitting it. On further enquiry the patient denied symptoms such as stomach discomfort, pain, fever, nausea, vomiting, melena, etc. A physician was consulted in this regard who advised an anteroposterior abdominal radiograph which revealed the location of the healing abutment in the ascending colon region of large intestine which appeared radioopaque [Fig.6]. Further the patient was advised to consume fibre rich food, for easy peristalsis, aiding in mobility of the instrument and to repeat the radiograph after a week. The second radiograph taken after a week revealed the absence of the

healing abutment suggesting its elimination from the abdominal cavity. [Fig.7]. At this juncture, the patient appeared relieved and reassured. After a week the patient was appointed for the prosthetic phase of the implant protocol which was completed in a month [Fig.8].

### **Discussion**

Accidental ingestion and aspiration of dental instruments has been documented in the literature. and they constitute the second most commonly ingested or aspirated foreign objects in adults, than children with an incidence of 3.6-27.7 percentage [3].The incidence of foreign bodies entering in GI tract and tracheobronchial tree were 92.5 percent and 7.5 percent respectively and it is said that only 10-20 percent cases require nonsurgical intervention while less than 1 percent cases need surgical retrieval.[1,3] A detailed outline of decision making for management of foreign body ingestion has been elaborated.[3]

Localization of the foreign body is of utmost importance once it's lost. If aspirated, it can be found in throat or cervical area, then it can be retrieved carefully, with a blunt tipped long forceps or the patient can be asked to cough forcibly. If the instrument is found deep into the larynx, trachea or bronchus, then management through bronchoscopy remains the treatment of choice [4] . If the object is located in esophagus it needs be retrieved with Foleys catheter or endoscope.[5]. It is also said that instruments entering the GI tract usually pass asymptotically and a traumatically within 2 days to 4 weeks and only 1 percent of ingested foreign bodies cause intestinal obstruction requiring surgery [6]. In ingestion cases, the site of involvement is related with the time after the accident, likewise, if the checking time is short, the object is likely to be in stomach ;otherwise it will be in the intestine [2] . In the present case, as the checking time was of two weeks duration, the instrument had surpassed

stomach and was found in the ascending colon of large intestine.

Sharp and pointed instruments, can cause intestinal obstruction or perforation. However, in the present case the healing abutment was smooth and scaled around 10 mm and hence did not cause any harmful effect [Fig. 9].

In the present case, the clinician nor the patient had anticipated that such a thing could occur. As per the instructions advised, the cover screw was removed and healing abutment was properly placed. The healing abutment has threads on it to engage the implant's inner surface which ensure adequate fit. However in the present case, there was disengagement and dislodging of healing abutment that led to accidental ingestion of it. The presumable reasons speculated were 1] inadequate fit of the healing abutment (could be due to Mfg. defect) 2] worn out threads of the healing abutment due to overuse while placement, etc.

Similar incidences of accidental ingestion have been reported in patients with neurosensory disturbances, psychiatric illness, head and neck cancer, stroke, dementia, cerebral palsy, Parkinsons disease, amyotropic lateral sclerosis due to functional impairment of swallowing mechanism.[3] In the present case, the patient had no such ailments except for hypertension. In the present case, the exact time of loosening and further ingestion of the healing abutment could not be ascertained as the patient was totally unaware of it and the missing abutment was noted by the clinician during the follow up period.

Ideally it is said that following such incidents, immediate radiographic evaluation that is P/A and lateral chest, is a must for easy location and serial radiographs are advised if the ingested object remains in the same location despite efforts to mobilize it and invasive procedures are advised only if patient becomes symptomatic.

## Conclusion

Though such incidents are rare, they can have serious outcomes. Prevention is always better than cure. Hence it is advisable to warn all patients undergoing implant surgery and also all the clinicians involved in implant surgery to anticipate the possibility of such instances happening and in such a case immediate reporting on the part of patient and the clinician becomes absolutely necessary to prevent further complications. Prior checking of all the instruments for their condition and efficacy for use becomes a mandatory step.

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## Legend Figures



Figure 1: Orthopantomograph showing impacted first premolar at apex and root stump at 27.

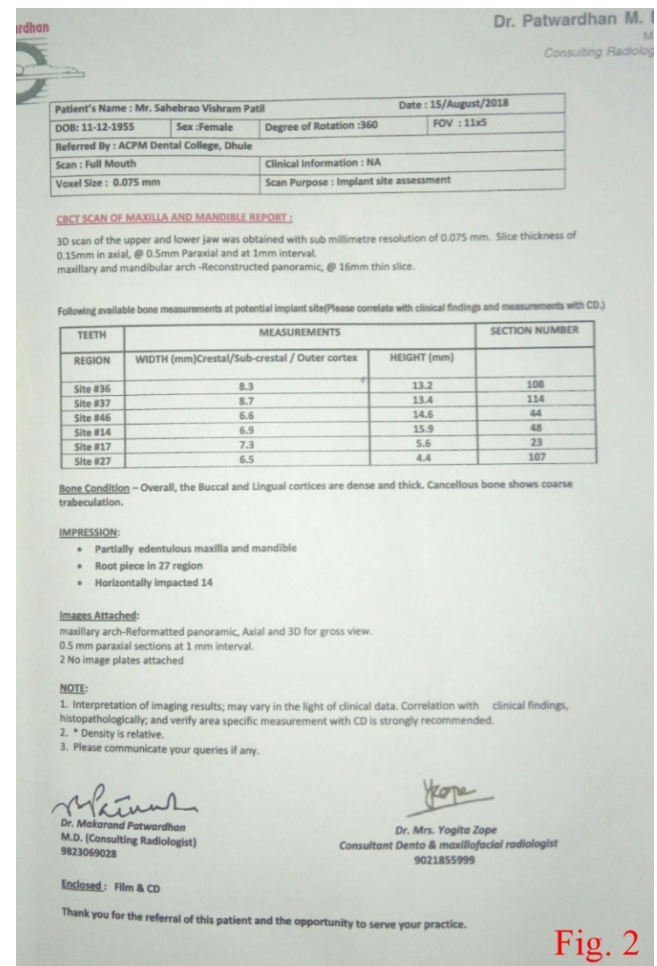


Figure 2

Figure 2: Report of CBCT showing adequate bone densities for placement of implants in 36, 37 regions.



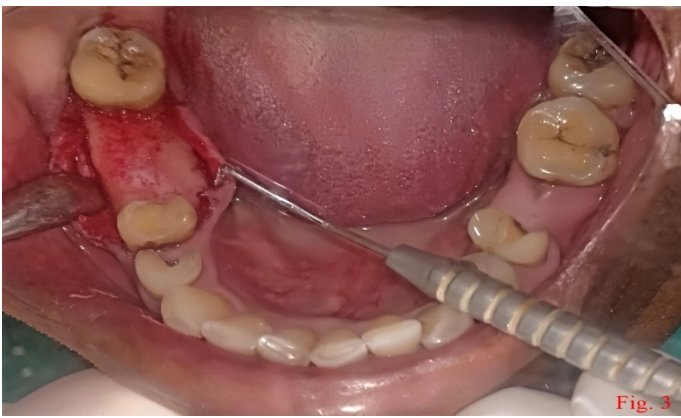


Figure 3: Clinical view of full thickness flap elevation.

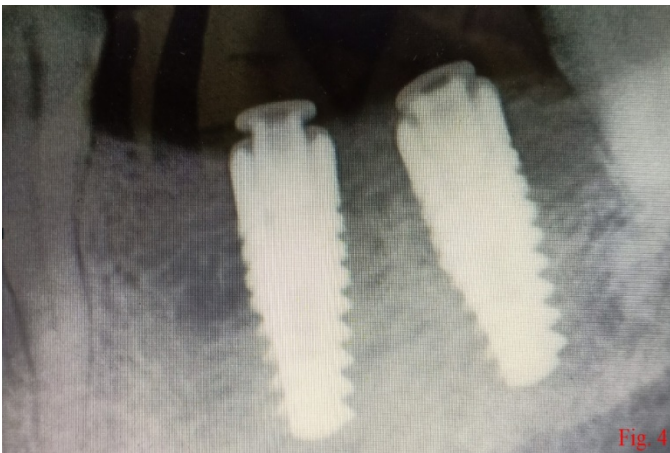


Figure 4: Radiographic view of implants with cover screw in place.

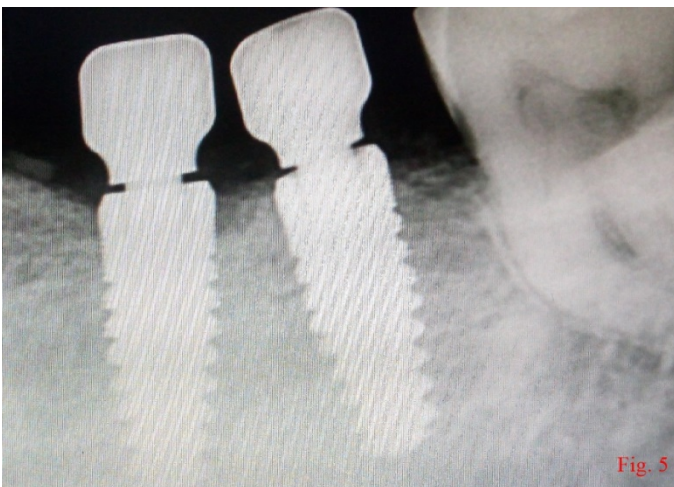


Figure 5: Radiographic view of healing abutments in place.



Figure 6: Anteroposterior radiograph showing location of healing abutment in ascending colon of large intestine.



Figure 7: Anteroposterior radiograph showing absence of healing abutment from the colon.



Figure 8: Clinical view of completed implant prosthesis.