

Case Report: Unexpectedly a Missing Tooth, post Extubation after an uncomplicated surgery!

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SUMMARY

A young male with no known comorbidities, posted for an uncomplicated ENT procedure, had his tooth missing immediately post extubation from Anesthesia. In this case report we explore the possibilities and expected complications of a missing foreign body in the oropharynx, the need for vigilance and immediate action to prevent further injury to the patient.

BACKGROUND

Dental injuries during laryngoscopy for endotracheal intubation are well associated with aspiration, causing obstruction and pneumonia. But no set of protocols are available on how to handle a situation where a tooth is missing post extubation, and is not causing any symptoms to the patient. This article is an attempt to provide a basic knowledge on what steps we, as a team with the ENT surgeons, had undertaken to address the situation. Hopefully this will help spur a like minded set of guidelines for such situations in the near future.

CASE PRESENTATION

A young male came with complaints of bilateral reduced hearing and discharge from the left ear since one year. After consultation with ENT surgeons, he was diagnosed with left-sided chronic otitis media, and was planned to be taken up for left-sided cortical mastoidectomy under general anesthesia. Pre-Anesthetic assessment was done one day prior to surgery, and a complete history, clinical examination, and airway examination was taken, along with all required basic investigations. During airway assessment, it was noted that the patient had a permanent dental prosthesis in the lower right incisor. Upon further probing, it was revealed by the patient that he had gotten it done a couple of years back, post slip and fall, and that, it was a type of permanent prosthesis.

The patient was counseled for general anaesthesia and fitness was given under ASA 1.

On the day of surgery, NBM status and all consents were checked, premedications were given with injection IV glycopyrrolate and Injection IV midazolam according to 0.004 mg/kg and 0.02 mg/kg respectively. Patient was induced with injection IV fentanyl (2 mcg/kg), injection propofol (2 mg/kg) and a loading dose of injection IV Vecuronium (0.1mg/kg). He was intubated uneventfully with Macintosh blade 4 and 8.5-sized endotracheal tube was placed between the vocal cords and fixed at 20 cm. The total duration of surgery was 2 and a half hours, and the patient was maintained on sevoflurane and intermittent doses of injection vecuronium according to the appropriate dosage of the patient.

Post surgery, after ensuring adequate spontaneous respiratory efforts from the patient, he was reversed with injection IV Neostigmine (0.05 mg/kg) and injection IV glycopyrrolate (0.008mg/kg), calculated according to the weight, and was extubated.

At this point, it was noted that the patient's lower dental prosthesis was missing. Immediately patient was asked if he was having any discomforts, foreign body irritation in the oropharynx, or any breathing difficulties. The patient was in post anesthesia confusion and so, he did not give any reliable response. Respiratory system examination was done immediately and there was no stridor, wheeze, or decreased air entry noted.

Operating surgeons were informed of the situation. The patient was immediately given a head-low position to avoid aspiration. Meanwhile, all the instruments and equipments used on the airway, including endotracheal tube, direct laryngoscope, Bite Block, were double checked for tooth. Support staff had thoroughly checked the operation theater floor, drapes, mops, gauze pieces and instruments. The tooth was not found.

The patient was sedated with injection propofol according to 1.5mg/kg, and positive pressure ventilation was given with 100% oxygen and sevoflurane at 1.5 vol% for 3 minutes. With the aid of Video laryngoscope (C - Mac) guidance, larynx was visualized, and a thorough examination of vallecula, bilateral pyriform fossa was done and the tooth was not found. The patient was ventilated again for 2 to 3 minutes with 100% oxygen. Patient was then handed over to the ENT surgeons and with the help of nasal endoscopy, a thorough examination of bilateral nasal cavity, and hypo-pharynx were done. The tooth was still missing. Sevoflurane was stopped and patient was given 100% oxygen till he had adequate spontaneous breaths, had spontaneous eye opening and was obeying commands.

He was then shifted to post-operation observation room and kept there for 3 hours. Patient was maintaining a room air saturation of 100%, with no complaints of stridor, wheeze, or any breathing difficulties. In the post-operation room, chest x-ray was done and it was compared with the pre operatively done chest x-ray (Fig 1). It was revealed in this x-ray that a hyper-echoic artifact was visualized in the oesophagus (Fig 2). Both patient and his relatives were counseled regarding the same. A gastroenterology opinion was obtained and it was advised by them to break the fasting period of the patient.

Sips of water was started at 6th-hour post operatively and gradually soft diet was started at 10th-hour.

On post-operative day one, an abdominal X-ray was done in an erect position, and the artifact was visualized in the pelvis, probably in the ileum or in the ileocaecal junction (Fig 3). On post-operative day 2, a repeat abdominal x-ray was done, and the artifact was found in the left lumbar segment, probably in the descending colon (Fig 4). Regular gastroenterology opinions

were taken, since patient did not pass stools for 2 days post-operatively. A colonoscopy examination was advised if by postoperative day 3 patient had no bowel movements. Bisacodyl 10 mg suppository was given, and the patient passed stools the next day. A third post-op Abdominal X-ray was taken, and the artifact was no more to be found (Fig 5). The patient was discharged on postoperative day 5 with no further issues.

OUTCOME AND FOLLOW-UP

Patient was followed up on a daily basis, up until discharge, which was on post operative day five, after ensuring that the tooth was out of the gastro intestinal tract.

DISCUSSION

It is estimated that dental injuries that occur during endotracheal intubation are approximately 1.13% of the time, with the rate reaching up to as high as 12.1% when patients have loose teeth⁽¹⁻²⁾. It is possible to develop airway obstruction, aspiration pneumonitis, and lung collapse as a result of the inhalation of foreign bodies such as teeth or food particles. Foreign body in oropharynx post extubation, in light plane of anesthesia can result in laryngospasm. Evidence suggests that a thorough oral examination should be performed prior to surgery for all elective procedures in order to reduce the risk of aspiration of foreign bodies⁽³⁾. The number of dental complications that occur post surgery can be lessened by addressing issues such as loose teeth, dental crowns, or dental cavities prior to the procedure. In order to prevent the dislodging of loose teeth during endotracheal intubation and extubation, proper technique is essential. In comparison to traditional direct laryngoscopy, visualisation with a video laryngoscope reduces the incidence of dental problems by a factor of 10⁽⁴⁾.

LEARNING POINTS/TAKE HOME MESSAGES

- Mechanical injuries during intubation and extubation of patients during Anesthesia, should never be overlooked.
- A thorough oral examination should be performed prior to surgery for all elective procedures in order to reduce the risk of aspiration of foreign bodies.
- Anaesthetist has to be vigilant in observing the whereabouts of a known loose tooth or dental prosthesis, be it removable or permanent.
- A missing tooth should not be taken lightly, and has to be accounted for, no matter what, since if such an object is left unaddressed inside the oral cavity, might have devastating complications and worsen the outcome of the patient.
- Evidence suggests that, use of video laryngoscopy reduces incidence of dental problems associated with intubation/extubation.

REFERENCES

1. Tammara A, Reed RM, Verceles AC. BMJ Case Rep Published online: doi:10.1136/bcr-2014-207145.
2. Vogel J, Stubinger S, Kaufmann M, et al. Dental injuries resulting from tracheal intubation—a retrospective study. *Dent Traumatol* 2009;25:73–7.
3. Chadwick RG, Lindsay SM. Dental injuries during general anaesthesia: can the dentist help the anaesthetist? *Dent Update* 1998;25:76–8.

- Rabiner JE, Auerbach M, Avner JR, et al. Comparison of GlideScope Videolaryngoscopy to Direct Laryngoscopy for Intubation of a Pediatric Simulator by Novice Physicians. *Emerg Med Int.* 2013;2013:407547.

FIGURE/VIDEO CAPTIONS

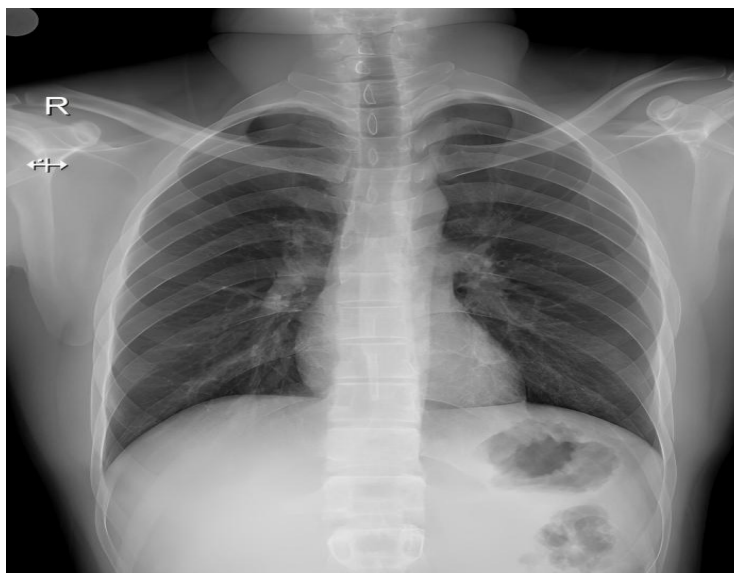


Fig 1. Pre operative chest x ray taken as a part of routine surgical work up of the patient

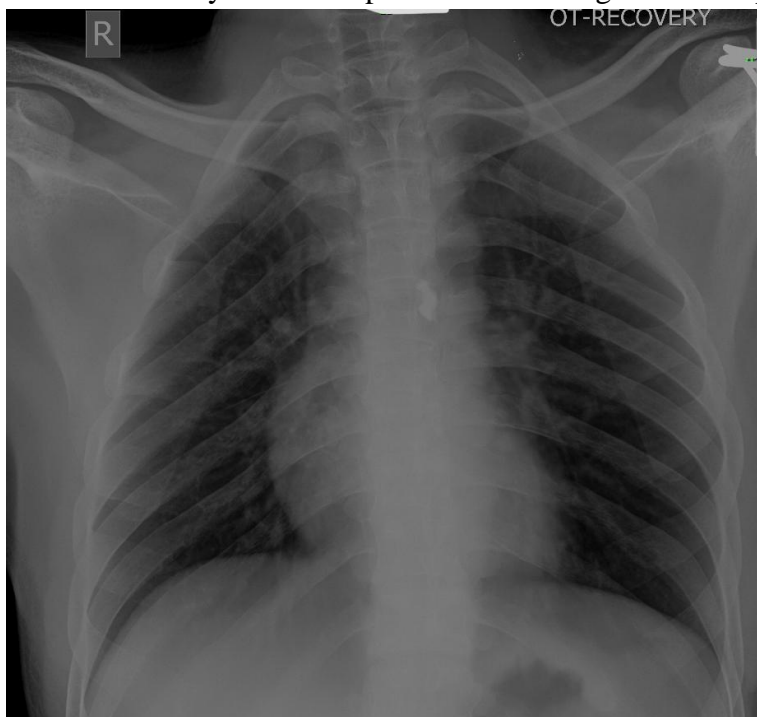


Fig 2. Chest X-ray image of the patient in the post operative recovery room revealing an artefact (tooth) in the oesophagus that was earlier not present.

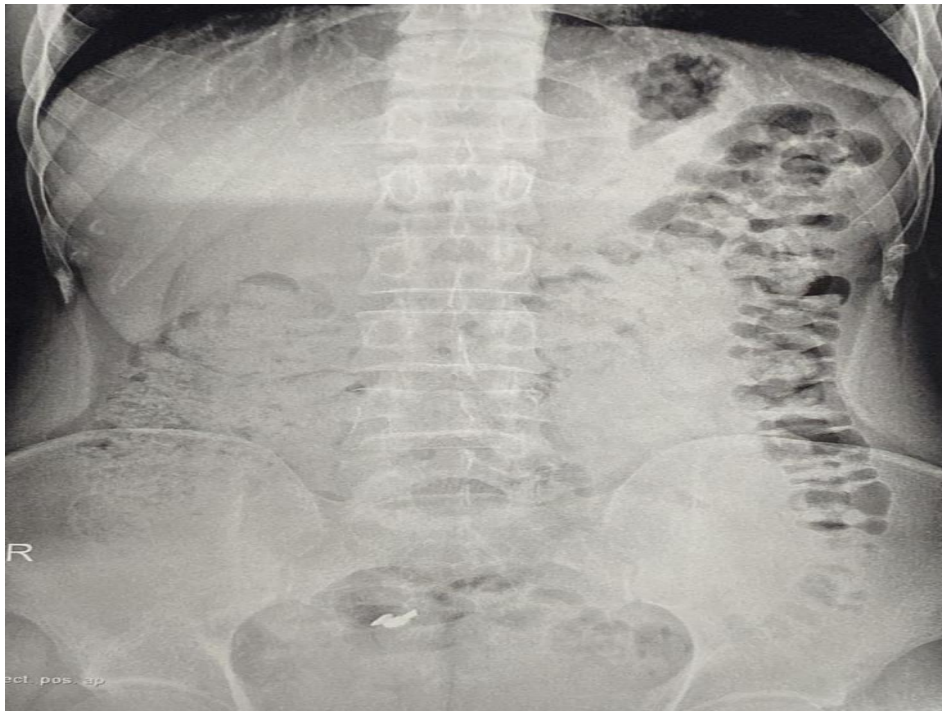


Fig 3. Follow up x ray abdomen erect, done on post operative day one, showing that the same artefact being present in the pelvic region of the abdomen, probably in the ileum or in the ileocecal junction.

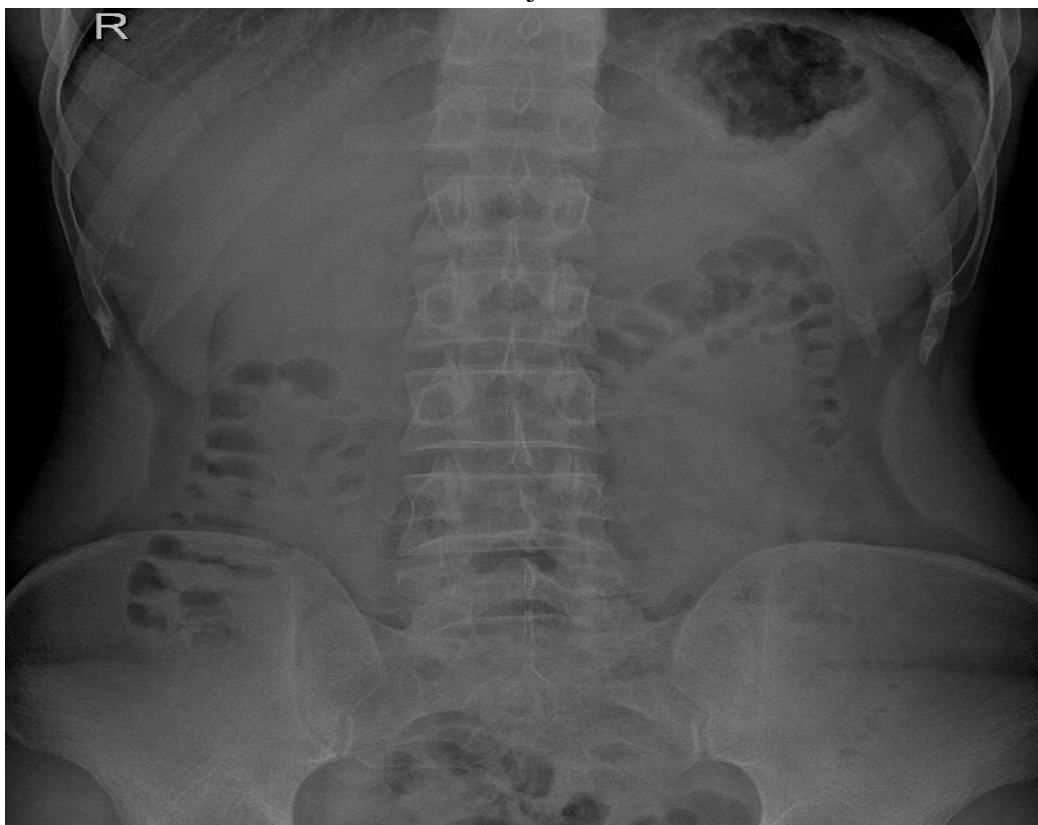


Fig 5. Final X-ray abdomen, taken on post operative day three, after patient has passed stools, revealing that the artefact is no more present in the abdomen.