

Case Report

BAD ORAL HYGIENE CAN CAUSE SERIOUS COMPLICATIONS IN THE AIRWAY DURING ANESTHESIA: A CASE REPORT

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Abstract

Biological foreign bodies formed by the deposition of mucous, dust, and dead cells can lead to obstruction of the airway as well as an increase in the requirement for post-operative antibiotic therapy. This case report focuses on the need to maintain oral hygiene by patients, attendants, nursing staff, and the surgery team. A 4-year-old child was posted for cystoscopy under sedation. After a while, saturation began to decline, necessitating the insertion of i-gel into the mouth to maintain the airway. Following the extubation, a thick substance covering the tip of the i-gel was discovered and if this mass would have been aspirated into the airway, it could have blocked it. So, before performing any anesthetic procedures, anaesthesiologists should make sure the patient's oral cavity, particularly the tongue, is clean.

INTRODUCTION

Numerous types of foreign bodies embedded in the soft tissues of the oral cavity have been reported in the past.^[1] Bullet fragments, fractured teeth, and impression materials are among the most common ones. Less frequently seen objects include fish bones, needles, and plastics. These foreign bodies seldom have been found over the tongue. A thick layer over the tongue (white tongue) usually consists of trapped bacteria, fungi, dirt, debris (like food and sugar), or dead cells forming a foreign body that has not been reported till date. This white thick layered tongue when eroded by some object, along with thick secretions can result in the formation of a foreign body; which may cause airway obstruction, aspiration pneumonitis, or lung collapse. In this case report, we described a case of a foreign body (white layer over the tongue) that might get into the airway and cause different problems. Emphasis shall also be on the importance of oral hygiene, to avoid the formation of such foreign bodies during intubation.

CASE PRESENTATION

A 4-year-old male child, weighing 16 kg, presented with a history of recurrent intermittent fever and

dysuria, which was previously treated with antibiotics, but there was no response. On examination, he was a healthy-looking child with stable vital signs. Physical examination revealed a non-tender suprapubic mass of about 5 cm from the pubic symphysis, which was dull on percussion (bladder lump). He had normal external genitalia. Abdominal ultrasonography demonstrated a distended urinary bladder with bilateral mild hydronephrosis with a posterior urethral valve. Complete blood counts, kidney function tests, and urine examinations were normal at presentation. A diagnosis of recurrent urinary tract infection secondary to a possible posterior urethral valve was considered, and cystoscopy was planned under sedation.

Pre-operative airway, vital function monitoring, and nil per oral were advised. Before anaesthesia, his vital signs were stable: temperature 36.4°C, BP: 95/74 mmHg, heart rate 114/min, respiratory rate 34/min, and SaO₂ 100%. The patient was sedated with sevoflurane to get an intravenous (IV) cannula, then IV sedation was administered by 1.6 mg midazolam (0.1 mg/kg), 14.4 mg ketamine (0.9 mg/kg), 24 mg propofol (1.5mg/kg) and further ketfol (a combination of ketamine and propofol) in a ratio of 1:1 seven times were given, thus a total of 49.4 mg

ketamine and 59 mg propofol were given. Thereafter, suddenly oxygen saturation started falling, immediately the patient's saturation was maintained by bag and mask ventilation.

As the surgeons required some more time, we planned to put i-gel to secure the airway and then shifted the patient to intermittent positive pressure ventilation. Injectable paracetamol was given for postoperative analgesia. After the procedure was completed, reversal was given, and the patient was extubated. When the i-gel was removed, we found a thick mass over its tip, partially covering the non-inflatable cuff [Figure 1]. Initially, we thought of this mass as a tooth, but later on, it was detected as a thick collection of dirt, debris (like food), and dead cells.



Figure 1: I-gel with a thick mass over its tip partially covering the non-inflatable cuff (laryngeal inlet)

DISCUSSION

Second-generation SADs like i-gel with gastric channels provide higher sealing pressures and more complete airway protection than the classic laryngeal mask airway (LMA).^[2-5] LMAs are an excellent alternative to bag and mask to prevent gastric inflation and thus reduce the risk of aspiration. In this case, since the procedure duration was increasing and to prevent stomach distension an i-gel was inserted into the patient's mouth.

I-gel is a new supraglottic airway device with an anatomically designed, non-inflatable mask, which is soft, gel-like, and transparent, made of

thermoplastic elastomer.^[6] The soft non-inflatable cuff fits securely onto the perilaryngeal framework. The elliptical cuff is intended to enclose the supraglottic area and the tip of the cuff lies at the proximal part of the oesophageal opening, isolating the oral opening from the oral inlet.

In this case, we found that there was a thick mass stuck over the laryngeal inlet of the i-gel, which could get dislodged or aspirated into the larynx or the bronchus and obstructed the airway during positive pressure ventilation or intubation. But fortunately, this did not happen. So, to avoid such complications in the future, we must ensure the proper oral hygiene of the patients before posting for surgery.

The importance of oral care has always been advocated from the surgical point of view and has been limited to postoperative surgical patients and chronically debilitated and intubated patients in intensive care.^[6] Few studies have assessed the effect of perioperative oral hygiene in preventing surgical site infections.^[7,8] The oral microbiota is an important source of respiratory tract infections and becomes dislodged during airway management techniques like laryngoscopy and intubation.^[9] The translocation of microbes from the oral cavity to the gastrointestinal tract is a proven route for causing infection and poor oral hygiene.^[10] Through this case report we want to bring light on the aspiration or dislodgement risk of this thick flora into the airway leading to obstruction, respiratory failure, arrhythmias, and cardiac arrest.

Therefore, anaesthesiologists should conduct a pre-anaesthetic assessment of patients to give impetus to good oral hygiene to the concerned attendants, nursing staff, and surgery team before shifting the patient to the operation room, not only to avoid infections but also the obstructive complications.

CONCLUSION

Maintaining good oral hygiene is crucial to prevent airway issues including blockage and postoperative infections. Therefore, assessment and its maintenance should be included as a part of the airway examination of the patient, before undertaking any anaesthetic procedure.

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