

BRIEF REPORT

An unusual reason for nasotracheal tube obstruction

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ABSTRACT

Nasotracheal intubations are commonly used in maxillofacial surgeries. Failure of ventilation after nasal intubation is an emergency and this paper aims at pointing out an unusual cause for nasal tube obstruction. Surgeons and anaesthesiologists should keep the possibility of obstruction by avulsed turbinate bones while dealing with such emergency situations. This paper details such an occurrence, the reasons and how the situation was managed.

Key words: nasotracheal tube intubation, nasotracheal tube obstruction, ventilatory failure, inferior turbinate avulsion.

Nasotracheal tubes are preferred in maxillofacial surgeries which include intraoral procedures. Nasotracheal intubation is relatively safe and time tested but occasionally unusual complications can occur, which both the surgeon and anaesthetist should be aware of.

A 24-year-old man underwent nasotracheal Ring-Adair-Elwyn (RAE) tube intubation for fixation of fracture of the left body of the mandible (Fig. 1).

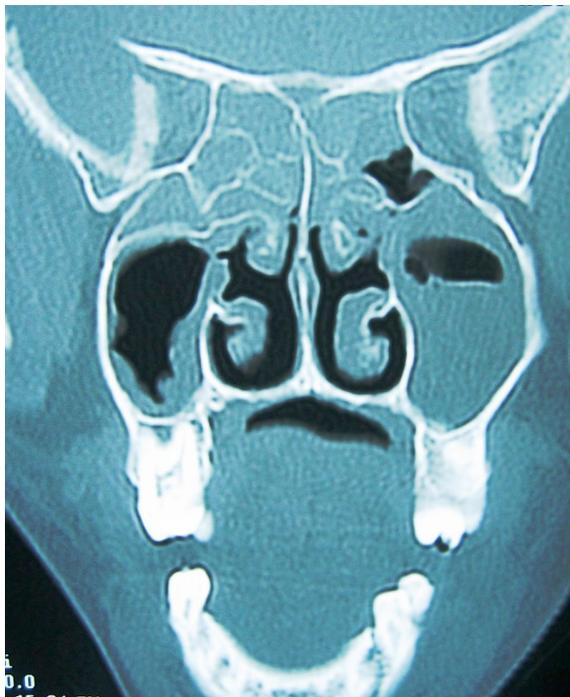


Figure 1, Coronal cut CT scan showing fracture of left body mandible. Note bilateral maxillary sinusitis and mildly hypertrophied left inferior turbinate

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The tube was inserted through the left nostril and was confirmed to be in position by laryngoscopy. The anaesthetist noted absence of chest movements on ventilation and the capnograph readings were flat on the monitor. Bronchial suction through the tube was attempted with no improvement in ventilation. Saturation, however, was maintained due to pre-oxygenation. Bronchospasm was suspected and deriphylline and dexamethasone was given intravenously, with no improvement. The oxygen saturation started dropping and the decision was made to change the tube. The nasal tube was removed and an oral tube was inserted which made normal ventilation possible and the saturation improved. Interestingly, it was found that the terminal end of the lumen of the nasal tube was blocked by a soft tissue mass (Fig. 2).



Figure 2, Lumen of the RAE tube blocked by the avulsed left inferior turbinate.

The mass was also blocking the Murphy's eye of the tube which explained the complete absence of chest movements. An ENT surgeon's advice was sought, who confirmed clinically that the inferior turbinate had avulsed and was the cause for the nasotracheal tube obstruction. Since intraoperative dental relation and occlusion had to be confirmed after reduction of the fracture mandible, the surgery was continued after inserting a new endotracheal tube through the right nostril.

Various complications of nasotracheal intubation reported are bleeding, sinusitis, bacteremia, structural

damages, retropharyngeal dissection and accidental turbinectomy.¹ Both accidental middle turbinectomy and inferior turbinectomy has been reported during nasotracheal intubation.²

Other causes for nasotracheal tube obstructions are blood clot and foreign bodies.^{3,4} In one incident the central incisor acted as the foreign body which caused the obstruction.⁴

In this particular case, the pre-operative CT scan shows evidence of bilateral maxillary sinusitis and the radiologist opined that the left inferior turbinate seemed to be hypertrophied when compared to the right side (Fig. 1). In retrospect it is not known whether this was a contributory factor for the accidental inferior turbinate avulsion during the nasal intubation.

It is also important that once ventilatory difficulty is encountered, forceful ventilation should not be attempted. In this case forceful ventilation would have dislodged the avulsed turbinate with unwanted consequences.

This brief communication is aimed to point out a cause for ventilatory failure during nasal intubation and maxillofacial surgeons and anaesthesiologists should keep this possibility in mind while dealing with such an emergency situation.

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