

1344758 - ADENOID OBSTRUCTION OF ETT AT INDUCTION: A PEDIATRIC CASE

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Purpose: There are many known complications of naso-tracheal intubation including obstruction of the endotracheal tube (ETT) with tissues of the nasopharynx. Tissue obstruction typically presents with high airway pressures and inability to ventilate, as the obstruction lies proximal to the Murphy Eye. The purpose of the current report is to describe an atypical case of nasal ETT obstruction in a pediatric patient.

Clinical Features: Institutional ethics approval and parental consent was obtained for anonymous presentation of this case. A 4 year old female patient (ASA 1, 18kg) was scheduled for dental restoration. An inhalational induction was accomplished without complication. A softened and lubricated 4.5 cm un-cuffed nasal RAE ETT was inserted into the right nare with minimal resistance. Laryngoscopy revealed a grade 1 view with minor bleeding in the oropharynx and the ETT was advanced through the vocal cords without problem. Upon confirmation of placement, bilateral breath seemed appropriate as did the resistance to manual ventilation. However, no CO₂ return was detected on the capnograph. Capnograph function was verified, vital signs were stable, and laryngoscopy was repeated to confirm endotracheal intubation. The patient was re-intubated with a new ETT without difficulty. Upon examination, we determined the initial ETT to be obstructed with adenoid tissue distal to the Murphy Eye.

Conclusion: Solutions for problematic intubations such as this may include re-intubation or the use of a bronchoscope to suction the obstructing material.¹⁻³ The case described here is unique in that the obstruction occurred distal to the Murphy Eye. A patent Murphy Eye allowed ventilation to occur, and hence bilateral breath sounds were heard on auscultation following intubation. The amount of ventilation was however, limited and insufficient for CO₂ to be recorded by capnography. With no CO₂ return detected by capnography, a confirmed endotracheal placement, and stable vital signs, we ruled out the possibility of bronchial intubation in the presence of a one-way valve as too dangerous.⁴ This case illustrates the importance of visualizing the tip of the ETT after nasal insertion prior to endotracheal placement. An opportunity to remove any potential obstruction to the ETT prior to endotracheal placement avoids potential complications associated with positive pressure causing dislodgement of a foreign body in the airway, or re-intubation.

References: 1. Anesth Prog. 1991 38:27-28
2. Anesth Prog. 2004 51:62-64
3. Anaesth Intensive Care 34(6): 829
4. Anesth Analg 2001 93:971-2