



Ameloblastoma Making Intubation Difficult Leading to a Retrograde Awake Nasal Intubation -An Airway Challenge in Emergency

Dr. P Sachin Sidhardha, Dr. Saurabh Bhargava, Dr. Deepak Tiwari, Dr. Janani, Dr. Nakul Sharma

Dept. Of Emergency Medicine, National Institute of Medical Sciences, Jaipur.

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ABSTRACT:

In cases with an unanticipated difficult airway, retrograde intubation can be used as an alternative procedure for airway management when a fiber optic bronchoscope is unavailable. We here report a case of successful management of an unanticipated difficult airway following a failed intubation in a 22-year-old male with a large right mandibular mass using retrograde intubation guided technique. Maintaining oxygenation and minimizing airway trauma should be the priority following a failed intubation. Decisions seeking alternative techniques following failed intubation are easy, if valid and applicable techniques (as per skill of emergency medicine physician and available resources) are discussed before induction of anesthesia.

Introduction: Management of difficult airway is always a challenge for emergency physicians. Proper preoperative evaluation of airway helps in predicting difficult airways and thereby reduces associated morbidity and mortality by proper planning. However, we should always remember that no test is reliable enough and one should be prepared for difficult airway at all times.¹ Preventing hypoxemic damage to the brain with effective oxygenation and limiting airway trauma remains the cornerstone for the management of unanticipated difficult airways following induction of anesthesia. Conceptualization and preparation for a backup plan in an event of failure is always rewarding for an emergency physician and is the philosophy behind the airway guidelines by Difficult Airway Society.² Retrograde intubation is an easy technique which requires only few equipment and once learned has a high level of skill retention.

Case report: A 22-year-old, 65kg, 162 cm, Indian male patient came with complaints of shortness of breath associated with acute exacerbation, with the GCS: E3V3M5-11/15 and deteriorating further and ABG : type 2 respiratory failure. General examination shows Patient is well built, moderately nourished, altered sensorium, Afebrile. Swelling of size 9.5*5*8 cms in right side of mandible. NIBP: 102/86 mmhg; PR: 99/min; Spo2: 98% on 6Lo2. His airway revealed an inter-incisor distance of 2cm, a thyro-mental distance of 7 cm, with very less restriction of neck movement, Mallampati class of IV, and bilateral nasal patency of the patient was also adequate. Other than Mallampati grade of 4, no other parameter of difficult airway was present and hence rapid induction with nasotracheal intubation was planned using conventional direct laryngoscopy. Due to unavailability of fiber-optic bronchoscope, retrograde intubation and surgical tracheostomy were our backup plans in the event of failure. Proper explanation of the procedure and consent for tracheostomy was obtained from the patient.

Routine monitoring using pulse oximeter probe, non-invasive blood pressure, and electrocardiogram were attached, and monitoring was started in the red zone of emergency department. Oxygen supplementation using nasal cannula at 6 L/min, Pre-oxygenation with 100% oxygen for 4 minutes with adequately fitted facemask was started. Sedation was done with 10 ml etomidate and paralytic used was 2ml succinylcholine. Armored tube with an internal diameter measuring 7.5 mm was inserted and proceeded through the right nares, under direct

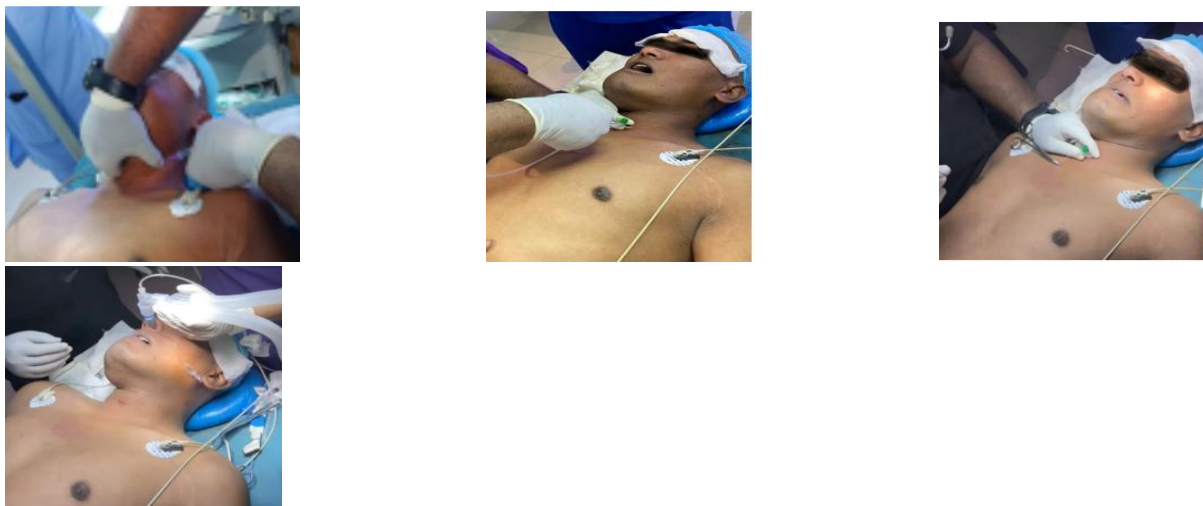


laryngoscopy (McIntosh 3) for nasal intubation, Cormack Lehane grade 3 view (epiglottis was visible with no view of the glottis) was appreciated even with optimal external laryngeal manipulation. To reduce the risk of hypoxemia, peri-intubation oxygenation was continued with the nasal cannula at 5 L/min throughout the procedure. No further attempts were performed to limit the airway trauma and associated risk of conversion into cannot ventilate situation. Oxygen saturation of the patient during the process remained above 92%.

2-18G IV cannula were secured in right & left hand respectively & standard ASA monitors were connected. Awake retrograde nasal intubation was planned. Premedication with Glycopyrrolate 0.2mg iv, midazolam 1mg, Fentanyl 100mcg iv, 2% lignocaine was used for nebulization. Lignocaine spray was instilled in oropharynx, Under local infiltration, the cricothyroid membrane was pierced with a 18-gauge (G) IV cannula. The needle was removed following lack of resistance and the placement of cannula was confirmed with air aspiration; further intra-tracheal 4% 4cc lignocaine infiltration was carried out subsequently for RLN block.

A J-tipped central line 7fr guide wire was inserted by Seldinger's technique through the 18-G cannula. The guide wire was gently pushed until it was retrieved through the right nares.

A cuffed flexo-metallic endotracheal tube (ETT) of internal diameter 7.5mm was rail-roaded through it. The guide wire was removed, and the ETT was inserted to a mark of 25.



Intravenous fluids of 1500 ml RL, 1000 ml NS, 500ml DNS, 1 Packed red blood cells transfusion was done. Blood loss was around 500ml.

Discussion: Tracheal intubation using conventional direct laryngoscopy remains the method of choice in most cases for airway management. But, direct laryngoscopy and intubation may be difficult in 1% to 4%, and impossible in 0.05% to 0.35%, of patients who have seemingly normal airways.⁴

Retrograde intubation is one of the optional techniques which can be utilized for effective airway management in the absence of fiberoptic bronchoscope with minimal complications.^{5,6,7} Although the level of invasiveness of this procedure in comparison with a surgical tracheostomy is less, still the unfamiliarity and exaggerated perception of invasive nature has made this technique less practiced and taught.⁶ In our case, the guidewire was retrieved naturally from the right nostril which can be explained by the suitable curvature and minimal resistance offered by nasal passage over the oral route. The angle of curvature provided by nasal exit is more obtuse and much better aligned in comparison to the oral exit, thereby making the guidewire follow the path of least resistance.⁸

While this is only one case report, it does explain the utility of retrograde intubation as an alternative method in difficult airway management especially in the absence of fiberoptic bronchoscopes.



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