CASE REPORT

ROLE OF TRACHLIGHT™ IN PATIENT WITH LARGE INTRA ORAL GROWTH

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SUMMARY

Patient presenting with large intra oral growth pose serious challenge to airway management. Flexible fiberoptic tracheal intubation may fail in such a situation. Recently a 35-year old ASA II male patient weighing 37 Kg presented with a large floor of the mouth growth leading to a partially obstructed airway in the supine position. Awake fiberoptic tracheal intubation was attempted after adequate preparation. However the flexible fiberscope failed to be manipulated by the attending anesthesiologist due to the compressed oropharyngeal space. In contrast, the styleted Trachlight™ with a 6.5 mm ID tracheal tube not only provided the much needed rigidity to negotiate the compressed oropharyngeal space but its bright light glow also gave sufficient direction towards the glottis for successful tracheal intubation.

Keywords : Difficult airway; Airway Devices; Trachlight™; Intra-oral growth.

Various difficult airway guidelines and algorithms have been designed to facilitate management of the difficult airway.[1-3] However none of these guidelines and algorithms suggest a specific technique or a step-wise approach of a predicted difficult airway. Till date there is no report in literature of the poor utility of flexible fiberoptic tracheal intubation in a highly compressed oropharyngeal space. We faced a near-fatal situation while dealing with a patient having a large intra-oral growth which went on to a near complete airway obstruction while attempting awake fiberoptic tracheal intubation. The airway was finally secured using a Trachlight™ as intubating aid.

Case report:

A 35-year old ASA II male patient weighing 37 Kg presented with a large intra oral swelling leading to a partially obstructed airway in the supine position. The patient was comfortable in semi-lateral position. The patient was put up for emergency excision of the growth.

On history and examination, patient complained of an intra-oral swelling that had gradually enlarged over a period of 2 years (Fig. 1). He had ignored the advice of an elective excision of the swelling several times in the past despite counseling. Over the last one month he had developed inability to sleep supine because of airway obstruction. He had a positive history of snoring and obstructed sleep apnoea. He was confined to a liquid diet and had lost approximately 17 Kg weight over the last one year. On CT examination, a cystic mass of 7.6 X 5.5 cm size was noted to be arising from floor of the mouth with smooth well defined margins. The mass extended up to just above an imaginary line connecting the mylohyoid muscles on either side. The mass did not show any areas of necrosis, calcification or hemorrhage. No bony abnormalities were noted. A provisional diagnosis of ranula or dermoid cyst was made. Patient's hematological and biochemical parameters were within acceptable limits.

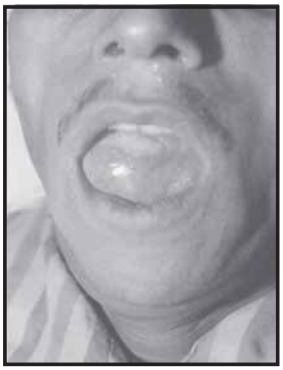

Fig. 1: Photograph of the patient's face taken about a month before the surgery.

At the time of pre-anesthetic visit, the patient was maintaining an oxygen saturation of 97% with a FiO_2 of 0.5 via a venturi face mask. On mouth opening, the hard palate could barely be visualized. Patient's heart rate [HR] and blood pressure [BP] were 92/min and 110/72 mmHg respectively. Patient was awake and cooperative.

An awake fiberoptic nasotracheal intubation was planned with consent for emergency tracheostomy if the former failed. Patient was given a detailed explanation of the technique and was premedicated with glycopyrrolate 0.2 mg and tramadol 50 mg IV. The patient was administered

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5ml viscous solution of 4% lidocaine to gargle, re-enforced with 3 puffs of 10% lidocaine from a pressurized canister for topical anesthesia of the oropharynx. For topical anesthesia and vasoconstriction of the nasal passage, 2% lidocaine with epinephrine [1 in 200,000 concentrations] was applied with cotton-tipped swabs to the nasal mucosa. A translaryngeal injection of 2 ml of 4% lidocaine was done to anesthetize the larynx and upper trachea.

The patient was placed supine with a semi-lateral tilt of the head, neck and chest to the left for unobstructed spontaneous breathing. Flexible fiberscope with a premounted 6.5 mm internal diameter [ID] endotracheal tube was easily introduced via the more patent left nostril. 4 l/min of oxygen was insufflated via the suction channel. On reaching the oropharyngeal area, visibility was totally lost and the flexible fiberscope appeared to curl instead of following the desired path towards the glottis. Patient started becoming restless. At this point the patient was made supine as it was the more accustomed position for the attending anaesthesiologist to perform fiberoptic tracheal intubation. Soon thereafter the oxygen saturation started falling and within 2-3 min reached 88%. Fiberscopy was stopped and 100% oxygen was administered via a tightly held face mask. Patient soon started showing evidence of near complete obstruction as evidenced by rib and suprasternal retraction and a falling saturation to 81%. Despite a return to left lateral tilt and two-person assisted positive pressure ventilation with 100% oxygen, saturation remained between 81-85%. Surgeons were asked to prepare for urgent tracheostomy and a needle cricothyrotomy set was kept ready. As the patient was being made supine for tracheostomy, an assistant provided a Trachlight™ with a premounted 6.5 mm ID cuffed red rubber tracheal tube [Rusch, Germany]. This tracheal tube had the advantage of a smooth, wrinkle free cuff. The Trachlight™-tracheal tube assembly [TTT] had been shaped into a gentle C with stylet in-situ. The well lubricated TTT assembly was gently passed via the left nostril. With a little maneuverability of the head and neck and the TTT assembly, the well circumscribed Trachlight™ glow appeared to enter the glottis and the trachea. Just as the light glow disappeared under the suprasternal notch, the tracheal tube clamp was unlocked and the Trachlight™ withdrawn. Correct tracheal intubation was confirmed and the surgery proceeded uneventfully. By the time the TTT assembly entered the glottis and the trachea, oxygen saturation had dropped to 69%, HR and BP reached 132/min and 166/94 mmHg. Surgery lasted 90 min and the patient's trachea was safely extubated in near awake state with no evidence of airway obstruction. The large growth (Fig. 2) had rendered the tongue atrophic as can be evidenced in the post-excision photograph (Fig. 3).

Fig. 2: Photograph showing near completion of the growth excision.

Fig. 3 : Photograph of the patient's face with the atrophic tongue and the excised growth.

Discussion:

The present case highlights the dilemma of managing the airway with large intra oral growths. In such cases the pathology is so apparent that there is clear cut indication for awake airway management as suggested in practice guidelines of American Society of Anesthesiologists Task Force on Management of the Difficult Airway.[1] The only dilemma is whether to perform surgical airway or nasotracheal intubation. In the present case both were considered but the option of awake nasotracheal intubation was selected. This was done keeping in mind that the patient had an unobstructed breathing in semi lateral position, was sufficiently cooperative, CT findings were suggestive of a well circumscribed floor of the mouth swelling and oxygen saturation was a reassuring 97% on room air. Use of anxiolytics or short acting narcotics was purposely omitted to prevent any respiratory depression.

Flexible fiberscopy was selected as the attending anesthesiologist was well versed in the technique which is also considered to be the gold standard in such situations. However during the procedure of awake fiberoptic intubation

two things happened which were unanticipated. First, in a tightly packed oral cavity secondary to a large floor of the mouth swelling, it was noted that the flexible fiberscope looses its much desired maneuverability. Its suppleness becomes its handicap as it no longer follows the direction the endoscopist desires. Its use should thus be considered with caution in patients with large intra oral growths. Second, the patient started to desaturate. This could be secondary to increased airway obstruction due to curling up of the fiberscope in the oropharynx or possibly, the mild respiratory depression action of tramadol or a combination of both. In retrospect, if both these handicaps were detailed in any earlier literature or difficult airway practice guidelines, awake surgical tracheostomy or percutaneous tracheostomy would have been the correct airway management option in this case.

This case brought about the usefulness of Trachlight™ in patients with a large floor of the mouth growth. It was observed that using TTT assembly with stylet in-situ gave enough rigidity to negotiate the compressed oropharyngeal airway towards the glottis. Though successful in this case, a better option would have been the use of Shikani Optical Stylet™ (Clarus Medical, Minneapolis, MN) or Flexible Airway Scope Tool™ (Clarus Medical, Minneapolis, MN).[4] These devices would eliminate the semi-blind nature of Trachlight™, yet retain the much desired rigidity and permit under vision tracheal intubation. Unfortunately, these devices are not available in our institution.

In conclusion, fiberoptic tracheal intubation may not be appropriate in an occasional patient with large oropharyngeal growth. Trachlight™ aided tracheal intubation may prove to be useful in such a difficult airway situation.

References

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