

Nasotracheal intubation in head and neck cancer patients by videolaryngoscope using cuff inflation technique

Introduction

Nasotracheal intubation in oral and maxillofacial surgeries is difficult because of oral swelling, decreased mouth opening, submucosal fibrosis and deformities.^{1,2} A number of techniques have been described in literature like blind nasal intubation, laryngoscope guided nasal intubation and fiberoptic bronchoscope (FOB) guided intubation (awake or anesthetized).³⁻⁵ FOB guided intubation is considered gold standard for airway management in these patients.⁶ BNI is a dying art, may have a high failure rate in inexperienced hands and may not be best technique in patients with oral cancers (blind intubation attempts may injure the fragile mass and cause bleeding) is hardly practiced due to availability of better alternatives.^{3,7} Conventional laryngoscope assisted nasal intubation may be difficult in patients with oral cancers, may lead to bleeding due to manipulation and require aids like Magill's forceps, bougie or cuff inflation to guide it into the glottis.⁸⁻¹⁰ Moreover Magill forceps may damage the endotracheal tube cuff and also may cause oropharyngeal mucosal injury (leading to bleeding).⁹ So, only FOB is a feasible option in such patients. But it also requires training, has a learning curve and is costly (especially for developing world).

Videolaryngoscopes (VL) have revolutionized the airway management in difficult cases. But despite a good glottic view, VL does not ensure successful intubation.¹¹ We may still need to use Magill's forceps, optimal external laryngeal manipulation, Eschmann stylet or rotation of the head to guide endotracheal tube into glottis.¹² The cuff inflation has also been described for BNI and laryngoscope guided NTI.¹³ VL's (Glidescope or CMAC D blade) can be inserted into oral cavity in such patients if the mouth opening is sufficient for insertion of VL (1.4-1.5 cm at least) and provide a good glottic view in cases where it is impossible with a conventional laryngoscope. VL's have been proven to be superior to conventional laryngoscopes for orotracheal and nasotracheal intubation when used by novices in airway management.^{12,13} Videolaryngoscope like Glidescope VL can be used to assist NTI using cuff inflation technique for intubation in head and neck cancer patients.¹³ Glidescope video laryngoscope (GSLV; Saturn Biomedical Systems, Burnaby, British Columbia, Canada) has a blade angled upward about 60° which provides a wide visual field. GSLV has been reported to be safe and effective for orotracheal intubation in normal and difficult airways.¹⁴

In head and neck cancer patients due to the disease/ growth it may be difficult to align the three axis (the tracheal, pharyngeal, and oral). VL's by virtue of their design don't require line of sight view for glottis visualization and have a shorter distance between the viewing position and the laryngeal structures.^{1,2} Moreover they require less force for visualisation, so result in less compression and distortion of the oropharyngolaryngeal structures.¹

So VL's may provide a better glottic view than the Macintosh laryngoscope in patients with head and neck cancers.¹¹ In our

experience, GSLV provided better glottic exposure during NTI with minimum airway distortion. We had used cuff inflation technique (cuff inflated with 15-20 mL of air) to guide the ETT into glottis after visualization of glottis.¹³ This lifts the ETT from the posterior pharyngeal wall and moves it towards the glottis. Now we are routinely doing the nasal intubations using this technique. This cuff inflation technique has never been described earlier for VL guided NTI. It may be an alternative technique in head and neck cancer patients when the FOB is not working and we have such a patient with mouth opening sufficient to insert a VL.

Conclusion

This technique may not be useful for intubation in patients with mouth opening sufficient to allow insertion of VL (> 1.5cm). It should be part of our airway management plans in routine clinical practice for NTI in head and neck cancer patients and can be considered in case FOB is not available or anaesthesiologist is inexperienced.

Conflicts of interest

There is no conflict of interest.

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Nishkarsh Gupta, Anju Gupta, Rakesh Garg, Vinod Kumar

Associate Professor, Department of Onco-Anesthesiology and Palliative Medicine, India

Correspondence: Nishkarsh Gupta, Associate Professor, Department of Onco-Anesthesiology and Palliative Medicine, DRB AIRCH, AIIMS, Delhi, India, Email drniskarsh@rediffmail.com

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