

Cuff Inflation for Correct Endotracheal Tube Alignment With Glottis While Using C-MAC Videolaryngoscope D Blade in Patients With Restricted Mouth Opening

Dear Editor,

A 58 years old patient was posted for tongue biopsy. His mouth opening was 3cm with restricted tongue protrusion and neck extension. As the patient was unwilling for awake fiberoptic intubation, check laryngoscopy with C-MAC videolaryngoscope was done after topicalisation and glottic opening was visible.

The patient was preoxygenated, induced with propofol and after ensuring mask ventilation suxamethonium was given. C-MAC videolaryngoscope D blade was then introduced to oral cavity and glottic structures were visualized. A 7.0-mm sized nasal Ring-Adair-Elwyn tube was then introduced through nostril till distal tip was visible on the screen. It was noticed that tip of endotracheal tube (ETT) was directing posteriorly while glottic opening was seen anteriorly [Figure 1a]. The force exerted on videoscope blade was reduced in an attempt to align glottic opening to ETT which failed. We tried to catch ETT in the oropharynx with Magill's forceps to introduce the tip to glottis, but failed as only palatal structures were visible directly through mouth. Introduction of Magill's forceps blindly into oropharynx also proved futile.

In an attempt to elevate ETT from posterior pharyngeal wall and to align it with glottic opening, tube tip was advanced to near the glottic opening and cuff was gradually inflated

with air (14mL). With this maneuver, tube tip got aligned with glottis [Figure 1b] and tube was advanced further till the tip passed the vocal cords. The cuff was then fully deflated and the tube was further advanced into trachea under vision [Figure 1c]. The cuff was then inflated again and correct placement was confirmed with end-tidal carbon dioxide.

Videolaryngoscopes have become a safe alternative to awake fiberoptic intubation in many patients with difficult airway. C-MAC videolaryngoscope D blade due to its obtuse angle helps to visualize anteriorly placed laryngeal inlet.^[1-4] However, use of Magill's forceps to redirect ETT may not be possible unless mouth opening is adequate enough to allow a direct view of the oropharynx through mouth. Even if tube could be caught with Magill's forceps, due to different curvatures of the blade and forceps, the forceps may not be visible in the videoscope screen making manipulation of ETT difficult.

With the technique described in our patient, posteriorly placed ETT tip can be aligned to glottis by gradual cuff inflation with just enough air till it is properly aligned. One of the disadvantage is that overinflation of cuff could obscure the visibility of the tube tip necessitating to advance few centimeters blindly with subsequent deflation and reassessment. In anteriorly placed larynx, the tube tip can hinge on larynx hindering the advancement. In such situations, flexion of head keeping the tube at glottic inlet would help to push the tube to trachea. Although cuff inflation is an already described technique,^[5] we want to reinforce its usefulness in patients with restricted mouth opening while using C-MAC videoscope. It is concluded that temporarily inflating the cuff helps to align a posteriorly placed ETT to glottic opening and aids intubation while using C-MAC videolaryngoscope D blade.

Declaration of patient consent

The authors certify that they have obtained all appropriate

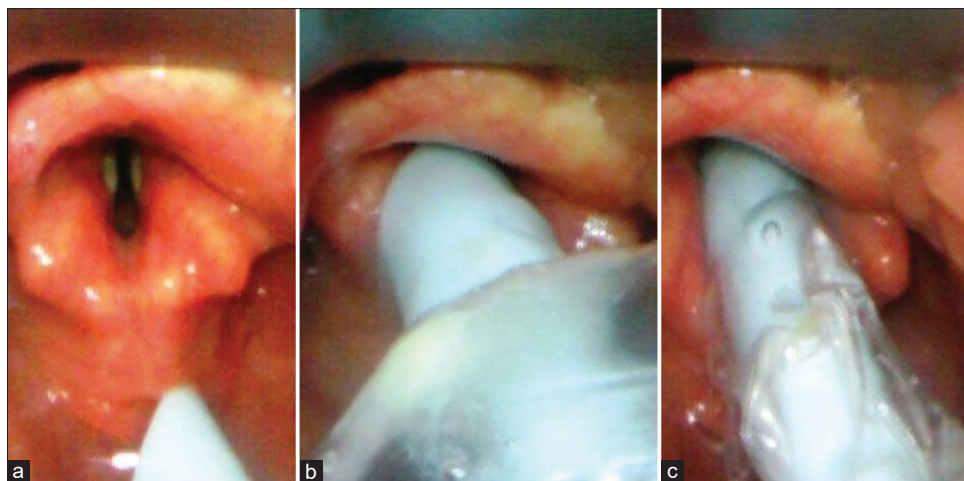


Figure 1: (a): Posteriorly placed endotracheal tube tip, (b): tube tip at glottis with cuff inflation, (c): tube being introduced to trachea after cuff deflation.

patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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References

1. Kramer A, Müller D, Pfortner R, Mohr C, Groeben H. Fiberoptic videolaryngoscopic (C-MAC D-BLADE) nasal awake intubation under local anaesthesia. *Anaesthesia* 2015;70:400-6.
2. Cavus E, Neumann T, Doerges V, Moeller T, Scharf E, Wagner K, *et al.* First clinical evaluation of the C-MAC D-Blade videolaryngoscope during routine and difficult intubation.

AnesthAnalg 2011;112:382-5.

3. Kumar KR, Sinha R, Mandal P, Chowdhury AR. C-MAC® D-BLADE for awake oro-tracheal intubation with minimal mouth opening-A safe alternative to fiberoptic bronchoscope. *Indian J Anaesth* 2018;62:916-8.
4. Tosh P, Rajan S, Kumar L. Ease of intubation with C-MAC videolaryngoscope: Use of 60° angled styletted endotracheal tube versus intubation over bougie. *Anesth Essays Res* 2018;12:194-8.
5. Goodine C, Sparrow K, Asselin M, Hung D, Hung O. The alignment approach to nasotracheal intubation *Can J Anaesth.* 2016;63:991-2

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