

## Letter to the Editor

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Dear Sir,

One of the most serious complications of the coronavirus disease 2019 (COVID-19) is acute severe respiratory syndrome mandating intensive care admission and assisted ventilation [1]. Pneumonia, hypoxemic respiratory failure and acute respiratory distress (ARDS), shock, and multi-organ failure, are the most common complications of severe COVID-19, along with the complications associated with prolonged hospitalization – including secondary nosocomial infection, thromboembolism, gastrointestinal bleeding, and critical illness polyneuropathy and myopathy [2].

Endotracheal intubation (ETI) is a particularly challenging element of COVID-19 for staff performing these procedures owing to the high risk of transmission of the infection. Therefore, anesthesiologists, intensive care staff, and emergency physicians are the most exposed groups, and guidance on the therapeutic management of patients with COVID-19 is vitally important to ensure the safety of key healthcare staff [3]. A video-assisted laryngoscope is recommended for intubation of COVID-19 patients. However, it was shown that intubation utilizing video-assisted laryngoscope required extra time compared to a regular laryngoscope. In this letter, we want to suggest the adoption of a modified technique for video-assisted laryngoscope intubation which could be used successfully in COVID-19 patients.

At present, the therapeutic strategies to deal with COVID-19 are focusing on supportive treatment for affected patients. In some communities, preventive measures have been applied aggressively in order to reduce the transmission rate. Across the world, health experts and scientists are working hard to control and treat the disease [2, 3]. At the time of writing, the accepted science is that the disease is transmitted via droplets from direct contact or indirect through waste and fluid secretions. The minimal protective personal equipment (PPE) required during the managing of suspected or confirmed cases of COVID-19 include: a FFP2 or FFP3 respirators (for respiratory protection); goggles or face shields (for eye protection); long-sleeved water-resistant gowns for body protection; and gloves (for hand protection) [4].

Airway manipulation is considered an aerosol-generating condition. So, the association of anesthetists have recommended precautions and guidelines during high-risk procedures, including intubation to protect the staff and decrease the transmission of the disease. The association also advises the avoidance of high flow devices during intubation, the use of video-assisted laryngoscopy, the sheathing of all equipment where possible, and the use of ultra-rapid sequence intubation or small tidal volumes with manual ventilation [4].

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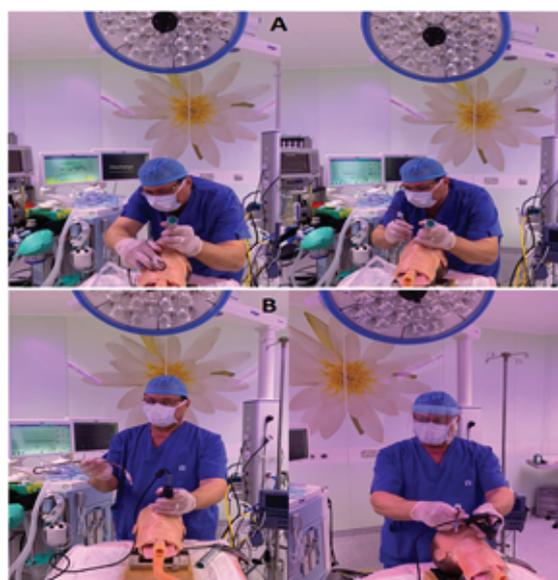
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ETI in COVID-19 patients is a particular concern for health care providers. In a critically ill patient, the ETI is especially difficult as a proper airway assessment is not possible and may therefore increase intubation time. During intubation with a regular laryngoscope, the health practitioner needs to be extremely close to the patient's airway to see the opening of the glottis. This heightens the risk of contracting COVID-19 from the infected patient (Figure 1A). A video-assisted laryngoscope is recommended by the association of anesthetists because it increases the distance from the patient's airway. However, studies performed in emergency departments have shown that intubation using this method requires significantly more time in comparison with the regular laryngoscope [5]. We suggest that shortening the glidescope video-assisted laryngoscope intubation time could help in decreasing the risk of cross-infection [4].

During traditional intubation with a glidescope, the blade is inserted first, followed by optimization of the glottis opening, and finally the insertion of endotracheal tube (ETT) via the mouth for tracheal intubation (Figure 1B). Using the combined glidescope technique, both the glidescope blade and ETT were inserted at the same time, and the glottis opening will be optimized for tracheal intubation (Figure 2). The combined glidescope technique was evaluated by Ejaimi *et al.* and they found that the exposure time to contaminated airway will be shortened while maintaining the distance from it [6]. Using this technique, they achieved successful intubation in all difficult airway patients in less than 15 seconds from the beginning of the blade insertion. Adding a disposable, transparent plastic sheet covering the patient's upper chest and head could also facilitate this technique as the insertion of the blade and ETT will be carried in one step and so no double movement (Figure 3).

Using this alternative technique for video-assisted laryngoscope for endotracheal intubation in COVID-19 patients could shorten the exposure time during the procedure while ensuring a larger distance from the patient's airway.



**Figure 1:** (A) Endotracheal intubation with a regular laryngoscope. Left: insertion of the laryngoscope blade to see the glottis opening. Right: insertion of the ETT under vision (Practitioner is closed to patient airway). (B) Traditional intubation with glidescope. Left (step one): insertion of the glidescope blade. Right (step two): insertion of the ETT following optimization of glottis view.



**Figure 2:** Combined intubation with glidescope. Both the glidescope blade and ETT are inserted together.



**Figure 3:** Combined intubation with glidescope and covering the patient chest and head with transparent plastic sheet for double protection.

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