

An Innovative Method for Using the Endotracheal Tube in COVID-19

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The outbreak of the novel coronavirus has become an international concern worldwide since late 2019 (1). Due to its respiratory nature, this infection has spread very quickly and has affected a large number of people (more than 30 million people) (2). Cough is considered as a major feature of clinical symptoms in patients with SARS-COV-2 (3). This causes aerosols containing infectious particles to be released into the air (4). Although all people are exposed to this infection, the medical staff and people who work in hospitals somehow are at more risk, in terms of dealing with patients (5). In the meantime, staff who somehow participate in airway management such as endotracheal intubation and suction are at more risk because of close contact with the patients airway especially when they are bucking during intubation (6). Nowadays, it is signified that anesthesiologists and intensivists who work in operating rooms or Intensive Care Units(ICUs) are more susceptible to infection and some of them have passed away around the world during the recent pandemic.

Therefore, it is very important to minimize the risk of aerosol spread when managing the airway and to find protective strategies that can be adopted to reduce it. For this reason, we recommend the use of a barrier to block the path of exhaling flow through the endotracheal tube (ETT).

In this method, a piece of banderole is placed on the ETT outlet (Figure 1.a) and allows it to be closed during intubation. After placing the tube in the trachea, the tracheal cuff will be inflated to confirm the protection of the airway and the tape is removed only after nearing the closed circuit to the ETT, while the face of the staff is far from the artificial airway (Figure 1.b). The main advantage of this method is reducing the risk of direct contact of the therapist with the patients, especially their exhaled air out of the tube.

This procedure can be performed using surgical forceps and similar clamps (7). However, the present method can be preferred for the following reasons:

- 1- There is no need to add a new artificial part to the ETT
- 2- The low cost of the method compared to other possible methods
- 3- Ease of execution of the process for the operator
- 4- High access to the tools needed to implement this method

It is obvious that implementation of this method during the intubating time in COVID-19 patients or who are suspicious of it, will prevent the pollution of the environment and improve the safety margin for medical workers. It is worth noting that all of this is in a situation while the therapist has followed all the hygienic principles mentioned in the protocols.

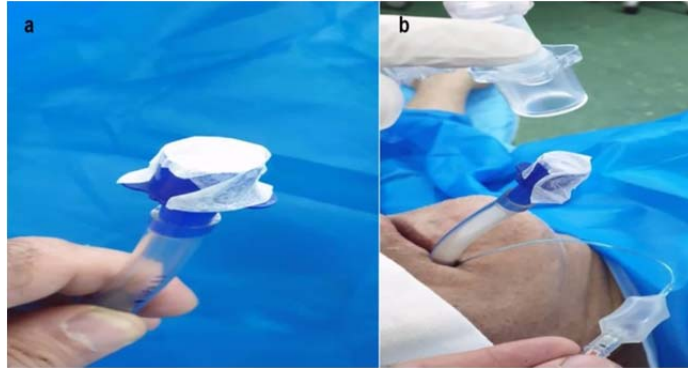


Figure 1. A piece of banderole is placed on the ETT outlet (a) and tape is removed after nearing the closed circuit to the ETT while the face of staff is far from the artificial airway (b)

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