

Intubation boxes for managing the airway in patients with COVID-19

I would like to commend Cook et al. [1] for their excellent, thorough and timely guidelines for airway management during this time. In particular, I would like to commend the principles of airway management to encourage safe, accurate and swift performance. These guidelines have already proven invaluable in training with simulation and also in performing tracheal intubations in patients. I would like to highlight the very important point, the first step of their algorithm for tracheal intubation of critically ill adults adapted for COVID-19 which states that staff must wear full checked personal protective equipment (PPE).

With these points in mind, namely the principles of airway management as well as the emphasis on fully checked PPE, it is with enormous concern that I note the great spread of online information surrounding 'aerosol boxes' for intubation. An 'aerosol box' first described by a doctor in Taiwan [2] consists of a transparent plastic cube designed to cover a patient's head that has two circular ports through which the person performing the tracheal intubation places their hands. Demonstrations of this box and videos on social media appear to be spreading as quickly as the virus itself and have led to a recent letter in a non-anaesthesia journal being published, where a study was described in which $n = 2$, (where one was a control) looking at a simulated cough, and investigated contamination of the laryngoscopist [3].

If we look at the principles of airway management as outlined by Cook et al. [1] in relation to this box, safety for staff cannot be determined, as the viral load contaminating the assistant was not assessed. We do not know what happens to the spread of the airborne particles once the box is removed. We do not know the damage caused to PPE, our first line of defence, in putting ones' arms in and out of the holes. Regarding patient safety, we do not know a comparable time to tracheal intubation or rate of first-pass success. From an accuracy perspective, this is an untested technique. One box size does not fit all, patients and laryngoscopists come in all sizes. The box does not warrant accurate manipulation of a bougie or any other device used

in securing an airway. The final principle of airway management recommends the timely placement of a tracheal tube. With all of the challenges outlined above, combined with the difficulties imposed by time pressure, a potentially critically ill patient who may be desaturating and the limitations of performing a procedure in full PPE, it seems counterintuitive to add an extra layer of complexity to the situation and expect that this will lead to a timely tracheal intubation.

Intubation in the COVID-19 era is a learning experience for all, and the use of social media to distribute large volumes of knowledge has been acknowledged [4]. The caveats and limitations outlined by Chan et al. ring true here regarding the 'aerosol box'. As such, I would advise care when evaluating new airway techniques at this time and to always have the principles of airway management at the forefront of one's mind.

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