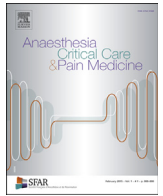




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Letter to the Editor

Intubation box in the current pandemic – helps or hinders?



To the Editor,

During the COVID-19 pandemic, adequate protective measures during airway management are crucial, as it is a high-risk aerosol-generating procedure. The aerosol or intubation box first designed by Hsien-yung Lai [1] is a transparent box made of medical grade material to cover the patient's head, neck and chest. Previous authors have performed simulations to determine the efficacy of the intubation box, but no real world, pragmatic data has been reported to our knowledge [2]. The authors wish to share their experience with the use of the transparent intubation box during endotracheal intubation in COVID-19 suspect patients.

The present analysis is based on the preliminary experience of 30 endotracheal intubations performed by anaesthesiologists in the Institute of Liver and Biliary Sciences, New Delhi. The mean experience of the anaesthesiologists was 5.3 years, post-anaesthesia training. Immediately after each intubation, the concerned anaesthesiologists were asked to fill an electronic feedback form. It

was part of an audit to check the compliance with institutional protocol. In the 9 patients where no intubation box was used, all the intubations were successful in the first attempt. In the other 21 patients, successful intubation in the first attempt was possible in 8 patients (38.1%). Second attempt was required in 6 (28.6%) patients, removal of the intubation box was needed in 6 (28.6%) patients, and 1 patient had change of operator. Thus, the cumulative success rate (first and second attempt) of endotracheal intubation using the box was 66.6% (Fig. 1). The reasons for removal of the intubation box were poor vision and inadequate space for certain manoeuvres such as tilting the patient's head. For the question whether the intubation box restricted the movements and hindered the process of intubation – 76.6% responded by saying, “yes”, and when asked to rate the ease of intubation on a scale of 1 to 10 through the intubation box, the median score given was 4.

The intubation box in our institute has the same dimensions as described by Lai (50 × 50 × 40 cm). An in vitro study performed by Begley et al. [2] showed that intubation time without an aerosol box was significantly shorter than with the early-generation box (median 42.9 seconds vs. 82.1 seconds, $P = 0.002$) and the latest-generation box (median 52.4 seconds, $P = 0.008$). In their study,

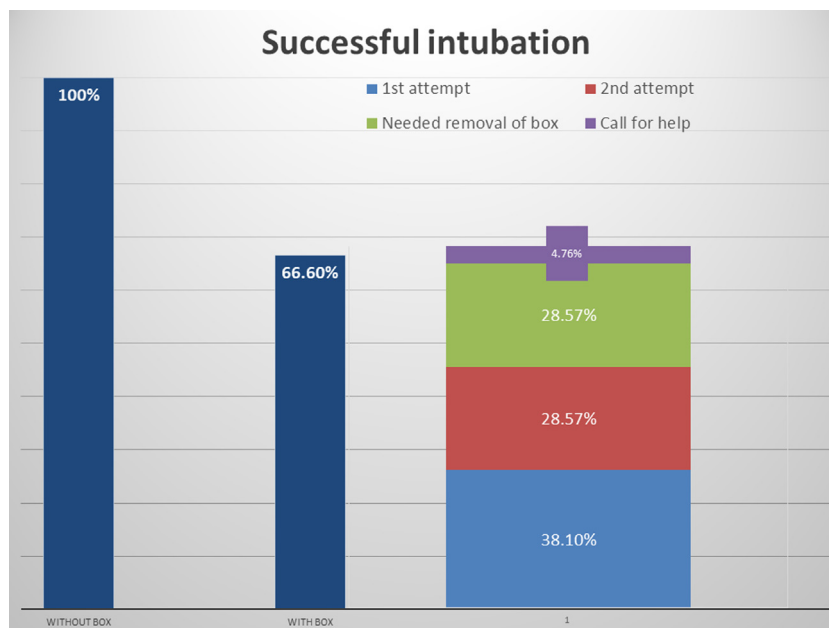


Fig. 1. Percentage of successful intubation with and without intubation/aerosol box.

first-pass success was obtained by all of them in intubations without an intubation box, whereas 75% got first-pass success with the early-generation box, and 83% participants obtained first-pass success with the latest-generation box. Only one type of box was used for all intubations in our centre.

Our experience suggests that the intubation box increases the number of attempts to successfully intubate the trachea. Hence, it may result in an increased patient-physician contact time. In the absence of any definitive data showing a positive benefit of the box, it is questionable if these boxes should be used or only a full personal protective equipment (PPE) should be considered sufficient. Alternatively, adequate training of personnel may help to improve the success rate of the use of a box. Future studies may provide answers to these questions. The authors believe that until further studies, rapid sequence intubation following precautions such as appropriate PPE, hand hygiene and video laryngoscope should be practiced [3].

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Disclosure of interest

The authors declare that they have no competing interest.

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