



In reply: Concern regarding the use of extracorporeal membrane oxygenation in the anticipated difficult airway

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To the Editor,

We would like to thank Dr. Chen¹ for his thoughtful comments regarding our report of the management of a patient with an “impossible” airway using the extracorporeal membrane oxygenation (ECMO).²

We agree with Dr. Chen that the selection of veno-arterial vs veno-veno ECMO depends on many factors. These include the patient’s cardiopulmonary status, vascular access, and most importantly, the initiation of ECMO as a team decision that involves the cardiac surgeon, perfusionist, anesthesiologist, and intensivist. We also agree with Dr. Chen that there are potential complications associated with the use of ECMO, as indicated and listed in our review.

Nevertheless, it was incorrect for Dr. Chen to state that “... the authors review the use of ECMO in airway emergencies, there is excessive focus on VA-ECMO and CPB...”¹ First of all, the objective of our report was “... to present a case of advanced thyroid carcinoma causing severe glottic and proximal tracheal obstruction in which adequate gas exchange was facilitated by ECMO prior to achieving a definitive airway under total intravenous anesthesia...” In addition, in our review, we specifically stated that “For the purpose of this study, we only selected cases in which extracorporeal life support (ECMO or CPB) was initiated as the a priori method of oxygenation and not

as a rescue technique following a failed intubation, failed ventilation, or cardiorespiratory arrest.” In other words, we were proposing the use of ECMO to manage patients with an anticipated “impossible” airway in which it is predictably difficult to provide oxygen to the patient using the four fundamental techniques of oxygenation, namely bag-mask-ventilation, supraglottic devices, tracheal intubation, and front-of-neck airway access.

During the last several decades, various organizations have developed and revised guidelines and strategic plans³⁻⁵ to assist clinicians in making critical decisions when providing oxygenation under challenging circumstances utilizing the above four fundamental methods of oxygenation. While these guidelines and strategic plans help in managing patients with a difficult or failed airway, they do not include specific plans recommended to manage patients with an “impossible” airway when all four fundamental techniques of oxygenation are likely to be difficult or fail. In other words, to avoid a catastrophic outcome when managing patients with an anticipated “impossible” airway, a collaborative team effort with a strategic plan is crucial to ensuring patient safety.

In summary, although guidelines and recommendations exist for managing patients with a difficult or failed airway, currently we do not have a strategic plan to manage patients with an “impossible” airway. We agree with Dr. Chen that the development of protocols, standards, and guidelines are essential in airway management, including the use of ECMO to oxygenate patients with an anticipated “impossible” airway.

Conflicts of interest None declared.

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