LETTER TO THE EDITOR

High-flow Tracheal Oxygenation with Airway Exchange Catheter: A Novel Approach

Balaji Vaithialingam[1], BG Arun[2]

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Sir,

The airway exchange catheter (AEC) is frequently used to maintain tracheal access after a difficult airway has been extubated.[1] Simultaneous oxygen supplementation is an important feature of the AEC that improves patient safety during difficult airway management. We present a novel technique for high-flow oxygen insufflation through the AEC using a high-flow tracheostomy cannula.

Cook AEC (Cook Medical, Bloomington, Indiana, USA) is available in a variety of lengths and internal diameters. It is a hollow catheter with a distal opening, distal side ports, and a proximal opening that can be connected to an external oxygen source. The Cook AEC set includes a 15-mm Rapi-Fit® adapter for low-flow oxygen delivery and a Luer-Lok® adaptor for jet ventilation through the AEC lumen. High-flow tracheostomy cannulas (Optiflow® Fisher & Paykel Healthcare Limited, Auckland, New Zealand) can be used to deliver high-flow oxygen and are commonly used to wean tracheostomized patients in intensive care.[2] Despite the fact that it has an expiratory port, the high-flow tracheostomy cannula is an open system that can provide significant positive end-expiratory pressure.[3] The high-flow tracheostomy cannula can be connected to the Cook AEC using a 15-mm Rapi-Fit® adapter (Fig. 1), and high flow can be delivered using the Optiflow® system. This novel technique may be useful in the intensive care unit (ICU) after tracheal extubation in a difficult airway with the AEC in place. This technique can deliver high flow directly into the trachea and effectively manage oxygenation at flow rates ranging from 10 to 30 L/min. In spontaneously breathing patients, exhalation can occur through the space surrounding the AEC in the trachea. In a difficult airway scenario, it is common practice in the ICU to maintain tracheal access with AEC after extubation. If it is decided to reintubate the patient in a crisis, high-flow oxygen can be insufflated through the AEC using the above technique as a bridge to aid the patient's oxygenation prior to tracheal intubation. Even though the above technique is not recommended by the manufacturers, direct insufflation of high-flow oxygen into the trachea with AEC *in situ* can be beneficial during a crisis.

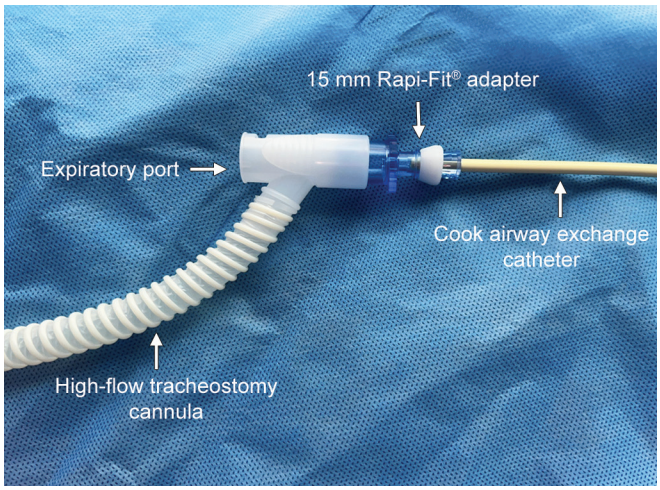

Fig. 1: The Optiflow® tracheostomy cannula connected to the Cook AEC through a 15-mm Rapi-Fit® adapter for high-flow oxygen delivery

[1,2]Department of Anaesthesiology, Sakra World Hospital, Bengaluru, Karnataka, India

Corresponding Author: Balaji Vaithialingam, Department of Anaesthesiology, Sakra World Hospital, Bengaluru, Karnataka, India, Phone: +91 9791870812, e-mail: balamedicine04@gmail.com

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Orcid

Balaji Vaithialingam https://orcid.org/0000-0001-6332-3251
BG Arun https://orcid.org/0000-0003-4863-5921

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