A simple and novel technique for facial protection during anesthesia administration in a suspected or positive COVID-19 patient

Anesthesiologists around the world are making consolidated efforts to protect themselves from getting infected with COVID-19 during anesthesia administration. There are high chances of anesthesiologists getting infected due to the abundance of aerosol generating procedures, mainly endotracheal intubation and extubation inside positive pressure operation theatres. The chances of getting infected with aerosol is mostly from direct aerosol exposure through nose, mouth and eyes. Therefore, protection of the face and upper neck is advised by many as these areas are generally exposed in the PPE.\textsuperscript{1-3} A wide range of products are being used worldwide for facial protection like head covers, face shields and hoods. Majority of these products are either costly, inaccessible or
cause hindrance to the routine working of anesthesiologist. There is not enough literature regarding problems faced with these products, but available literature suggests mainly fogging, poor visibility and sweating as primary ones.\[4,5\] Hence, we present a cheap, disposable and effective solution that can be easily created with readily available materials in operation theatres.

We devised this technique for facial and neck protection in place of a face shield or hood. We procured a stack of two layered transparent cellophane sheet that was sealed from two sides and open from other two [Figure 1]. A proper size of sheet was cut from the stack after measuring height from the neck to the upper end of head [Figure 2]. This sheet was worn over the face through the open end down such that the sealed ends will be on the sides of head and upper end would be open. Alternatively, we can also use a single layer transparent plastic sheet by wrapping it around face and neck and sealing it by an adhesive to get a similar arrangement. What we did differently with the open upper end was to insert an oxygen source through a tubing available with a face mask. Oxygen source can be a separate small oxygen cylinder apart from the machine (which we used initially), the auxiliary oxygen outlet on the anesthesia machine, a wall outlet with flowmeter or any other source. Oxygen is started at atleast 10l/min and the upper end is sealed with adhesive with oxygen tubing in situ [Figure 3]. The lower end is kept open for the outflow of oxygen coming from upper end. This arrangement is donned over and above the PPE hood and N95 mask before preoxygenation of patient. Once the patient is intubated, cuff is inflated and after starting ventilation on closed circuit and low flows, this sheet is disposed of safely as per recommendations. A new sheet is worn during extubation.

Our technique avoids the problem of fogging faced with a face shield and provides better visibility, all round protection and ease of application. Oxygen flow provides a bit of positive pressure as well, thereby preventing the problems of sweating and fogging seen with a face cover. It also prevents entry of air and aerosol. In our experience, the anesthetists donned this arrangement for more than 20 minutes and they were much more comfortable subjectively compared to a head cover or a face shield.

Our technique is cheap, easy to make and use, disposable, effective in protecting the operator from aerosols and removes most of the shortcomings of other face protection strategies.
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Conflicts of interest
There are no conflicts of interest.

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