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Commentary

Emergency tracheostomy during COVID 19 pandemic in a head and neck surgical oncology unit

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Tracheostomy is a lifesaving surgical procedure in patients with severe upper airway compromise. The common indications for it in our center are Cancer of larynx or hypopharynx, resulting in stridor, Laryngeal edema due to radiation, and Bilateral vocal cord fixation in the midline (adducted cords) due to post-cricoid cancers or abductor paralysis in post thyroidectomy patients. In the present situation of the COVID-19 Pandemic, it is advisable to avoid all aerosol-generating procedures. Tracheostomy is a highly aerosol-generating procedure, which warrants temporary modifications in its approach during an emergency [1–4].

We wish to share our experience on improvisations of emergency tracheostomies during the last one month of lockdown for COVID 19 in our region. Eleven patients have so far presented to the Emergency Room of the Regional Cancer Centre Thiruvananthapuram, Kerala India, with airway compromise due to cancer-related stridor during the lockdown period of COVID 19 pandemic. Four patients were managed conservatively as the stridor was mild, and seven were taken up for emergency tracheostomy whose COVID status was unknown.

Pre tracheostomy preparation

All these patients were seen in the Emergency Room by head and neck surgeon(s) with adequate personal protective equipment, and they were shifted to the operating room (OR) with oxygen support. As soon as we decided to do tracheostomy, the Operating Theatre (OT) staff were alerted to prepare the OT. In all the cases, we took radiographs of chest and neck for its anteroposterior (AP) and lateral views, and an appropriate dose of steroid was given to support the patient till the surgical airway was created. Although these procedures should be ideally performed in negative pressure ORs [1], this was not feasible in our hands due to resource limitations. Hence all cases were performed in an OR with a closed door, and before the patient reached the OR, the surgical and anesthetic teams were donned with PPE, including an N95 mask and a face shield. Buddy check was performed to ensure completeness of donning.

Procedural improvisations

All tracheostomies were performed under Monitored anesthesia care (MAC). The patient was painted, draped, locally anesthetized, and positioned at the time of the start of the procedure. A well trained expert surgeon, an assistant surgeon, scrub nurse, and an expert anesthetist were allowed in the OR as soon as the procedure started. We believe that the most crucial factor in minimizing a COVID infection risk is to reduce the duration of exposure to aerosolized secretions intraoperatively. This was achieved by the surgeon's expertise, wherein the average incision to cuff inflation time remained less than 5 min. The most critical challenge while performing a tracheostomy with a PPE is fogging, which may lead to discomfort to the surgeon and prolongation of the procedure. To an extent, anti-fogging solutions may help, but in such a situation, again it is the experience of the surgeon that counts the most since he or she engaged in a problematic situation of fogging uses two more senses i.e. proprioception to palpate the trachea at every step and cognition to listen and respond to the anesthesia machine and feed backs from the anesthesia colleague for any fall in saturation.

Because of the absolute nature of airway obstruction, most of the cases had a vertical liberal skin incision with a surgical knife in the midline between the thyroid cartilage and the suprasternal notch to avoid injury to anterior jugular veins. Monopolar diathermy and artery forceps were used to open up the strap muscle in the midline with minimal bleeding.

A tracheal window of adequate size was then made by excising a piece of tracheal cartilage (2nd or 3rd ring) so as to ensure the smooth passage of the tube, avoiding any injury to the cuff of the Portex tracheostomy tube. (A low tracheostomy was avoided as far as possible to facilitate a future laryngectomy). A cuffed non-fenestrated tracheostomy tube was used in all cases, and the inserter was replaced by an inner tube connected to the Heat and Moisture Exchange (HME) filter, which in turn was attached to the ventilator circuit, and the position was confirmed with End-tidal CO₂. Once the tube position was confirmed, and the tube secured, the surgical team moves to the doffing area and the anesthesiology team takes over the patient. Waste disposal and disinfection are done as per our hospital protocol.

Post-procedure-tracheostomy tube care and any other essential tube

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manipulations were done by the attending surgeons only with PPE. Tracheostomy suctioning was done using a closed suction system. Tube change was delayed or avoided to the extent possible [3].

All our seven patients have survived the emergency and are being worked up for further management.

Conclusion

In an oncology setting, emergency tracheostomy for stridor very often presents at its most critical state during the COVID-19 pandemic season, and it is our commitment that no patients should die of surgically correctable air hunger. However, it should be done with adequate personal protection and with minimum aerosol generation.

Declaration of Competing Interest

All authors declared that there is no conflict of interest.

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