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Letter to the editor

CORONA-steps for tracheotomy in COVID-19 patients: A staff-safe method for airway management



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Dear Editor,

Recently an editorial titled, “CORONA-steps for tracheotomy in COVID-19 patients: a staff-safe method for airway management”, was published by Pichi et al. in the journal Oral Oncology [1].

With this editorial, the authors would like to give their contribution to the management of tracheotomy indications in a critical moment as represented by the Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) pandemic. It is known that tracheotomy represents a high-risk procedure due to the possibility of infection to surgeons, nurses and staff, as it generates aerosols. In the paper by Pichi and others published in your journal [1], the authors have clearly outlined all steps to work safely in the case of tracheotomy on a Coronavirus Disease-2019 (COVID-19 patient), considering all the technical and logistic issues the matter demands. The acronym CORONA was used to summarize all passages in a chronological order, as to make it easy to remember all steps even in stressful moments.

Regarding the most appropriate timing for such procedure, the authors outline how early tracheotomy, performed in the first 7 days from endotracheal intubation, reduced the duration of mechanical ventilation, shortened Intensive Care Unit (ICU) stay, and decreased mortality, as demonstrated in a recent systematic review of the literature [2]. However, these results are based on studies performed well before the outbreak of this epidemic and care must be taken when applying them to the current situation. As of today, evidence that early tracheotomy could improve the outcomes in COVID-19 intubated patients are lacking; even more so, no evidence that these patients could benefit from tracheotomy exists at all.

Givi et al. [3] suggest that the decision whether to perform tracheotomy or not must be carefully pondered in COVID-19 intubated patients, balancing risks and benefits both for patients and for healthcare workers. The authors encourage to avoid tracheotomy or postpone it beyond the first 14 days from intubation in order to let the most acute phase of infection pass and allow for the viral load to decrease, lowering the transmission risk. Current National guidelines available on the matter also share the same principles [4–6]. In a previous randomized controlled trial, early tracheotomy was not associated to a reduced mortality or shortened ICU stay [7]. A recent retrospective study was published on 1591 patients admitted to the ICU of 72 Hospitals in Lombardy Region (Italy) with a laboratory-confirmed diagnosis of

COVID-19 [8]. Almost all patients required respiratory support, invasive mechanical ventilation was needed in 88% patients. The median length of ICU stay was 9 days (range 6–13). In our Institution, a COVID-19 Hospital in Lombardy, more than 450 COVID-19 patients have been admitted since the beginning of March, with about 300 currently hospitalized. Forty-three ICU beds were reserved for those requiring invasive ventilatory support; however, no tracheotomy has been performed up to now. Considering these data, indication for early tracheotomy during the SARS-CoV-2 epidemic is arguable. Furthermore, Li et al. claimed that if SARS-CoV-2 infects neurons in the medulla oblongata, which acts as a control center for the heart and lungs, this damage could contribute to the acute respiratory failure of patients with COVID-19 [9]. It is still necessary to ascertain when tracheotomy could be appropriate to address the respiratory impairment caused by SARS-CoV-2. Randomized controlled trials are needed to verify the indications and appropriate timing for tracheotomy procedures in COVID-19 patients.

Declaration of Competing Interest

The authors declare that they have no conflict of interest.

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References

- [1] Pichi B, Mazzola F, Bonsembiante A, Petrucci G, Zocchi J, Moretto S, et al. CORONA-steps for tracheotomy in COVID-19 patients: A staff-safe method for airway management. *Oral Oncol* 2020. <https://doi.org/10.1016/j.oraloncology.2020.104682>. [published online April 6, 2020].
- [2] Adly A, Youssef TA, El-Begermy MM, Younis HM. Timing of tracheostomy in patients with prolonged endotracheal intubation: a systematic review. *Eur Arch Otorhinolaryngol* 2020;275:679–90.
- [3] Givi B, Schiff BA, Chinn SB, Clayburgh D, Gopalakrishna Iyer N, Jalisi S, et al. Safety recommendations for evaluation and surgery of the Head and Neck during the COVID-19 pandemic. *JAMA* 2020. <https://doi.org/10.1001/jamaoto.2020.0780>. [published online March 31, 2020].
- [4] American Academy of Otolaryngology-Head and Neck Surgery Website. Tracheotomy recommendations during the COVID-19 pandemic. <https://www.entnet.org/content/tracheotomy-recommendations-during-covid-19-pandemic> [accessed April 8, 2020].
- [5] ENT UK Website. Framework for open tracheostomy in COVID-19 patients. <https://www.entuk.org/sites/default/files/files/COVID%20tracheostomy%20guidance%20-%206%20April%202020%20update.pdf> [accessed April 8, 2020].

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- [6] ENT Canada Website. Recommendations from the CSO-HNS taskforce on performance of tracheotomy during the COVID-19 pandemic. <https://www.entcanada.org/wp-content/uploads/COVID-19-Guidelines-CSOHNS-Task-Force-Mar-23-2020.pdf> [accessed April 8, 2020].
- [7] Young D, Harrison DA, Cuthbertson BH, Rowan K, TracMan Collaborators. Effect of early vs late tracheostomy placement on survival in patients receiving mechanical ventilation: The TracMan Randomized Trial. *JAMA* 2013;309:2121–9.
- [8] Grasselli G, Zangrillo A, Zanella A, Antonelli M, Cabrini L, Castelli A, et al. Baseline characteristics and outcomes of 1591 patients infected with SARS-CoV-2 admitted to ICUs of the Lombardy Region, Italy. *JAMA* 2020. <https://doi.org/10.1001/jama.2020.5394>. [published online April 6, 2020].
- [9] Li YC, Bai WZ, Hashikawa T. The neuroinvasive potential of SARS-CoV2 may play a role in the respiratory failure of COVID-19 patients. *J Med Virol* 2020. <https://doi.org/10.1002/jmv.25728>.

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