

Health workers' safety during tracheostomy in COVID-19 patients: a home-made protective screen

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Abstract

As an aerosol and droplets generating procedure, tracheostomy increases contamination risks for health workers in the coronavirus disease context. To preserve the health care system capacity and to limit virus cross-transmission, protecting caregivers against coronavirus infection is of critical importance. We report the use of external fixator equipment to set up a physical interface between the patient's neck and the caregiver performing a tracheostomy in COVID-19 patients. Once the metal frame set in place, it is wrapped with a single-use clear and sterile cover for surgical C-arm. This installation is simple, easy and fast to achieve and can be carried out with inexpensive material available in every hospital. This physical interface is an additional safety measure that prevents the direct projection of secretions or droplets. It should, of course, only be considered as a complement to strict compliance with barrier precautions and personal protective equipment.

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cross-transmission, protecting caregivers against coronavirus infection is of critical importance. We report the use of external fixator equipment to set up a physical interface between the patient’s neck and the caregiver performing a tracheostomy in COVID-19 patients. Once the metal frame set in place, it is wrapped with a single-use clear and sterile cover for surgical C-arm. This installation is simple, easy and fast to achieve and can be carried out with inexpensive material available in every hospital. This physical interface is an additional safety measure that prevents the direct projection of secretions or droplets. It should, of course, only be considered as a complement to strict compliance with barrier precautions and personal protective equipment.

Protective screen

After China, the whole world is now facing the coronavirus disease 2019 (COVID-19) pandemic. This unprecedented outbreak is straining health systems, especially the intensive care units, since around 15% of the hospitalized patients require critical care, and in many cases prolonged respiratory support¹. In these patients, tracheostomy may be indicated for individual considerations, such as facilitating respiratory assistance weaning or after a first failed extubation attempt. In the context of intensive care units’ overload, tracheostomy can also be considered for community benefit, since it enables to reduce sedation depth, intensive care unit length of stay, and may facilitate patients’ transfer outside of intensive care units, for instance in ventilatory weaning units.

Yet, as an aerosol and droplets generating procedure, tracheostomy increases contamination risks for health workers in the coronavirus disease context². To preserve the health care system capacity and to limit virus cross-transmission, protecting caregivers against coronavirus infection is of critical importance³. Good practice recommendations have been published in order to improve staff safety when performing a tracheostomy in COVID-19 patients⁴. We also read with interest the practical tips reported in Head & Neck by Vargas *et al* to limit aerosolized secretions production, such as using a double lumen endotracheal tube to perform percutaneous tracheostomy⁵.

Our turn, we would like to report a tip that we’ve implemented in our department for surgical or percutaneous tracheostomy, which can also be used to change tracheostomy cannula (figure 1). We use external fixator equipment to set up a physical interface between the patient’s neck and the caregiver. Once the metal frame set in place, it is wrapped with a single-use clear and sterile cover for surgical C-arm. The dimensions of the installation can be adjusted to the patient; in our experience, it is important to make the structure high enough in order to be able to work easily below it. This installation is simple, easy and fast to achieve and can be carried out with inexpensive material available in every hospital. In addition, operating room equipment is currently widely available since the planned surgical activity has decreased significantly. After use, this device is simple to be decontaminated, and can also be sterilized if required.

This physical interface is an additional safety measure that prevents the direct projection of secretions or droplets. It should, of course, only be considered as a complement to strict compliance with barrier precautions and personal protective equipment^{4,6}.

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Figure caption:

Figure 1: Installation of the metal frame and the protective screen during a percutaneous tracheostomy procedure

