



Anesthesia in the times of COVID-19

Michiaki Yamakage¹

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During my writing of this Editorial in early May 2020, COVID-19, a novel coronavirus, has infected more than 3.5 million people all over the world. The currently known characteristics of this “killer” virus are as follows: (1) its incubation period seems rather long, (2) symptoms, especially in young people, are often inconspicuous, (3) the clinical manifestations are varied, typically presenting with pneumonia, fever, fatigue, olfactory/taste disorders, as well as coagulation dysfunction [1, 2]. Although the epicenter of this pandemic was Wuhan, China [3], there is now a high possibility of being infected anywhere in the world, especially in dense urban areas. As anesthesiologists, our work in operating rooms, emergency departments, and/or intensive care units often brings us in close proximity to the patient’s airway, exposing us to their aerosolized respiratory secretions. Hence, we are faced with the challenge of protecting ourselves while doing our best for the patient. Much of the recent literature addresses the additional challenges faced by medical staff in the face of the current pandemic and methods to cope with them. I will try to summarize some of the recently published literature regarding COVID-19 and anesthesia.

Wen X and Li Y briefly, but adequately, described anesthesia procedures for emergency surgery in patients with suspected or confirmed COVID-19 in their letter [4]. They stated that a thorough preoperative examination and epidemiologic investigation is essential for all surgical patients to assess suspected COVID-19 patients. Although they recommend performing chest CT scans for all surgical patients, we do not follow this for all surgical patients in Japan at present. For patients with suspected or confirmed COVID-19, elective surgical procedures should be cancelled. For emergency operations in suspected or confirmed patients, anesthesiologists should be protected according to level three protection

requirements. In my opinion, since airborne transmission is unlikely for this virus, a negative-pressure operating room is not necessarily needed. The procedures we should practice the most should be those that minimize patients’ coughing and high airway pressure during anesthesia.

Much of the initial literature on the management of COVID-19 patients comes from Wuhan, China, with articles subsequently published worldwide [5–8]. One of the authors, Prof. Chen X, who previously obtained a Doctor of Philosophy degree following his work in my laboratory at Sapporo, Japan, has written substantial reports and also made important roles in clinical situations. His reports seem to suggest unimaginable stress and conflict among anesthesiologists and health care co-workers at hospitals in the epicenter. Besides his reports, other literature has also been published regarding the anesthetic management of COVID-19-positive patients from other cities in China and other countries [9–17]. The latter literature, however, seems to have no more new information in them.

Several articles related to obstetric [18–21], pediatric [22–24], and cardiac [25] surgeries/anesthesia have been published. Neuraxial labor analgesia is recommended to ensure availability of this anesthetic technique if intrapartum Cesarean delivery is needed. Spinal anesthesia should be provided if needed. For pediatric patients, it might be more difficult to get information about their clinical manifestations from the patients themselves; furthermore, it seems to be rather difficult to maintain environmental cleanliness during intubation and extubation because an iv line is not available before induction, and they cannot stop crying during extubation. Several devices and methods to prevent aerosolization and droplet spray during intubation and extubation have been reported recently, including in pediatric patients [26–28]. He et al. [25] described the anesthetic management of cardiac surgical patients in their literature; we, could not, however, find any further information regarding this, especially in relation to cardiac anesthesia.

I would like to introduce some more literature related to anesthesia machines [17, 29, 30] and regional anesthesia [31–34]. For the duration of the epidemic, designated operating rooms and anesthesia machines should be reserved for

✉ Michiaki Yamakage
michiaki_yamakage@icloud.com

¹ Department of Anesthesiology, Sapporo Medical University School of Medicine, Sapporo, Japan

use only for COVID-19 cases, and water traps, the anesthesia circuit, heat and moisture exchange (HME) filters, and carbon dioxide filters should be changed after each patient. As much as possible, during the pandemic, surgeries should be performed under regional anesthesia, as it has the benefits of preservation of respiratory function and avoidance of aerosolization and, hence, viral transmission.

Finally, I would like to say that while I regret that I can provide neither relief nor encouragement to the readers by presenting the current literature published in the last few months, I would like to highlight the fact that while we anesthesiologists fight against COVID-19 in operating rooms, we should maintain social distance in our own lives.

I pray that together we can overcome this pandemic in the near future, and I hope to see you face to face soon.

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