Anesthesiology and Neurosurgery in Patients with COVID-19: A Special Advisory and Position Statement

Abstract

This advisory statement is intended to aid in the perioperative management of patients who have COVID-19 or are suspected of having COVID-19. It is based on current evidence and expert consensus. It is not intended to replace local protocols and guidelines.

Introduction

The COVID-19 pandemic has had a profound impact on healthcare systems worldwide. Anesthesiologists and neurosurgeons play a critical role in the management of patients with COVID-19. This advisory statement provides guidance on preoperative, intraoperative, and postoperative considerations for anesthesiologists and neurosurgeons.

Preoperative Considerations

Preoperative consultation (PAC) should be conducted to assess the risk of COVID-19 infection. PAC should be conducted in a separate room and conducted by a multi-disciplinary team, including anesthesiologists, neurosurgeons, and critical care physicians.

Premedication

Preoperative medication should be minimized to reduce the risk of respiratory depression and the need for intubation. Non-resectable nebulized medications should be considered if available.

Intubation

Induction of anesthesia should be performed by a single person to minimize the number of healthcare workers involved. Inhalation induction is preferred, but if necessary, IV induction may be used. Cuffed ET tubes should be used to reduce leak.

Ventilation

Negative pressure ventilation should be used to minimize the risk of aerosolization and transmission. If possible, use of an AIIR is recommended for intubation and then wheeling in the patient to the operating room.

Intraoperative Considerations

Airway Management

Meticulous airway assessment before donning PPE is a must. The use of an automated chest compression device is advised. If uncuffed ET is used, then use the appropriate size to minimize leak.

Ventilation

Using a cuffed ET tube is recommended to reduce leak. To avoid hypoxemia during intubation, one may deliver gentle positive pressure ventilation to achieve chest rise while maintaining a tight mask seal. Using a cuffed ET tube, to reduce leak, is appropriate.

Suctioning

Use of high-flow nasal oxygen is recommended for suctioning. Suctioning should be performed with a high-flow nasal oxygen delivery system to minimize the risk of aerosolization.

Monitoring

Neuromonitoring should be used to assess cerebral perfusion and oxygenation. Monitoring should be performed by a team and the results communicated to the surgical and anesthesia teams.

Postoperative Considerations

Postoperative care should be conducted in a separate room to minimize exposure. Postoperative medication should be administered by nurses to reduce the number of healthcare workers involved.

Conclusion

This advisory statement provides guidance for the management of patients with COVID-19. It is important to continue to monitor and update this statement as new evidence becomes available.

Keywords: COVID-19, perioperative care, anesthesiology, neurosurgery.