Operating room preparation for COVID-19

Ti et al. published what they do preparing an operating room (OR) when a confirmed or suspected COVID-19 patient needs an operation [1)].

An operating room with a negative room pressure environment located at a corner of the operating complex, and with separate access, is designated for all confirmed (or suspected) COVID-19 cases. The OR actually consists of five interconnected rooms, of which only the anteroom and anesthesia induction rooms have negative atmospheric pressures. The OR proper, preparation and scrub rooms all have positive pressures.

Understanding the airflow within the OR is crucial to minimizing the risk of infection.

The same OR and the same anesthesia machine will only be used for COVID-19 cases for the duration of the epidemic. An additional heat and moisture exchanger (HME) filter is placed on the expiratory limb of the circuit. Both HME filters and the soda lime are changed after each case. The anesthetic drug trolley is kept in the induction room. Before the start of each operation, the anesthesiologist puts all the drugs and equipment required for the procedure onto a tray to avoid handling of the drug trolley during the case. Nevertheless, if there is a need for additional drugs, hand hygiene and glove changing are performed before entering the induction room and handling the drug trolley.

A fully stocked airway trolley is also placed in the induction room. As far as possible, disposable airway equipment is used. The airway should be secured using the method with the highest chance of first-time success to avoid repeated instrumentation of the airway, including using a video-laryngoscope.

Equipment in limited supply such as bispectral index monitors or infusion pumps may be requested but need to be thoroughly wiped down after use.

Hospital security is responsible for clearing the route from the ward or intensive care unit (ICU) to the OR, including the elevators. The transfer from the ward to the OR will be done by the ward nurses in full personal protective equipment (PPE) including a well-fitting N95 mask, goggles or face shield, splash-resistant gown, and boot covers. For patients coming from the ICU, a dedicated transport ventilator is used. To avoid aerosolization, the gas flow is turned off and the endotracheal tube clamped with forceps during the switching of ventilators. The ICU personnel wear full PPE with a powered air-purifying respirator (PAPR) for the transfer. In the induction room, a PAPR is worn during induction and reversal of anesthesia for all personnel within 2 m of the patient. For operative airway procedures such as tracheostomy, all staff keep their PAPR on throughout the procedure.

During the procedure, a runner is stationed outside the OR if additional drugs or equipment are needed. These are placed onto a trolley that will be left in the ante room for the OR team to retrieve. This same process in reverse is used to send out specimens such as arterial blood gas samples and frozen section specimens. The runner wears PPE when entering the ante room.

Personnel exiting the OR discard their used gowns and gloves in the ante room and perform hand hygiene before leaving the ante room. Any PAPR will be removed outside the ante room. Patients who do not require ICU care postoperatively are fully recovered in the OR itself. When the patient is ready for discharge, the route to the isolation ward or ICU is again cleared by security.

A minimum of one hour is planned between cases to allow OR staff to send the patient back to the

ward, conduct through decontamination of all surfaces, screens, keyboard, cables, monitors, and anesthesia machine. All unused items on the drug tray and airway trolley should be assumed to be contaminated and discarded. All staff have to shower before resuming their regular duties. As an added precaution, after confirmed COVID-19 cases, a hydrogen peroxide vaporizer will be used to decontaminate the OR.

1)

Ti LK, Ang LS, Foong TW, Ng BSW. What we do when a COVID-19 patient needs an operation: operating room preparation and guidance. Can J Anaesth. 2020 Mar 6. doi: 10.1007/s12630-020-01617-4. [Epub ahead of print] PubMed PMID: 32144591.