

Guidance for Surgical Tracheostomy and Tracheostomy Tube Change during the COVID-19 Pandemic

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Emergency Tracheostomy (Imminent airway obstruction unknown COVID-19 status)

Manage patient as such COVID-19 positive. Given respiratory symptoms they will fulfil criteria for suspected COVID-19 and there will not be time for testing in this situation.

Reversible cause for airway obstruction

- Intubation rather than tracheostomy would be preferable, follow difficult airway guidance
- Avoid use of high flow oxygen/AIRVO
- Most skilled airway manager (anaesthetist) present should manage airway to maximise first pass success
- Most skilled airway manager (ENT) for tracheostomy if required
- Reduce unnecessary team members to essential staff
- See **Standard Operative Procedure for tracheostomy** below

Irreversible cause for airway obstruction i.e. (Laryngeal mass)

- Irreversible cause for airway obstruction where intubation is not appropriate, **tracheostomy as per standard operative procedure** below
- At this time, it may not be advisable for laryngeal debulking in those where COVID-19 status is unknown

Elective Tracheostomy

- COVID-19 testing to be performed in all patients prior to elective tracheostomy
- Tracheostomy is a high-risk procedure because of aerosol-generation (*ENT UK*), it may be prudent to delay tracheostomy until active COVID-19 disease has passed (*icmanaesthesiacovi-19.org*)
- ENT and ITU consultant to discuss appropriateness of tracheostomy in COVID-19 positive patient
- If COVID negative following testing proceed as per standard operating procedure (fluid resistant surgical mask, surgical gown, gloves and eye protection) (*guidance for ENT during the COVID-19 pandemic*)

Standard operative procedure for tracheostomy in COVID 19 positive patient/Unknown status

- Most skilled anaesthetic and ENT clinician performing anaesthetic and procedure, to ensure that the procedure is safe, accurate and swift
- Reduce unnecessary team members to essential staff
- Preparation and Gowning:

1. Use FFP3 mask.
2. Eye/face protection should be worn for performing tracheostomy or changing a tracheostomy tube due to the risk of respiratory secretions or body fluids. One of the following options are suitable:
 1. surgical mask with integrated visor
 2. full face shield/visor
3. Fluid resistant disposable gown should be worn. If non-fluid resistant gown is used a disposable plastic apron must be worn underneath. A sterile disposable gown must be used for surgical tracheostomy.
4. Gloves must be appropriate to allow palpation, use of stitches and surgical instruments. Consider using Eclipse system or “double-gloving”.
 - Cuffed non-fenestrated tracheostomy should be used to avoid aerosolizing the virus
 - Every effort should be made not to pierce the cuff of the endotracheal tube when performing tracheotomy
 - Initial advancement of the endotracheal tube should be performed prior to tracheostomy window being made
 - If possible, cease ventilation whilst window in the trachea is being performed and check the cuff is still inflated before recommencing ventilation
 - Ventilation to cease prior to tracheostomy tube insertion and ensure swift and accurate placement of tracheostomy tube with prompt inflation of the cuff
 - Confirm placement with end tidal CO₂
 - Ensure there is no leak from the cuff and the tube is secured in position
 - HME (Heat and moisture exchanger) should be placed on the tracheostomy to reduce shedding of the virus should the anaesthetic tubing be disconnected
 - Avoid disconnecting HME but if necessary, disconnect distal to HME

Post tracheostomy care

- RCoA suggests avoiding humidified wet circuits as theoretically it will reduce the risks of contamination of the room if there is an unexpected circuit disconnection
- Avoid changing the tracheostomy tube until COVID-19 has passed, will have to review with infectious diseases
- Cuff to remain inflated and check for leaks
- Make every effort not to disconnect the circuit
- Only closed in line suctioning should be used

Tracheostomy and Tracheostomy Tube Changes in confirmed negative or not suspected COVID 19

Equipment and Gowning:

1. Use fluid resistant surgical mask.
2. Eye/face protection should be worn for performing tracheostomy or changing a tracheostomy tube due to the risk of respiratory secretions or body fluids. One of the following options are suitable:
 1. surgical mask with integrated visor
 2. full face shield/visor
3. Usual surgical gown for tracheostomy and single use disposable apron for tube change.

4. Gloves must be appropriate to allow palpation, use of stitches and surgical instruments. Consider using Eclipse system or “double-gloving”.

Important information to consider from the Royal College of Anaesthetists, this will be transferable to ENT.

Personal protective equipment (PPE) is only part of a system to prevent contamination and infection of healthcare workers. In addition to PPE, procedures such as decontamination of surfaces and equipment, minimising unnecessary patient and surface contact and careful waste management are essential for risk reduction. The virus can remain viable in the air for a prolonged period and on non-absorbent surfaces for many hours and even days (van Doremalen N et al, 2020). Where an aerosol-generating procedure has been performed the room should be deep cleaned after 20 minutes (Public health England).

Reliable use of PPE significantly reduced the risk of infection in healthcare workers during the SARS epidemic (Loeb M et al, 2004)

A 2012 systematic review of infection risk to healthcare workers Van Doremalen et al, 2020, based on limited literature, ranked airway procedures in descending order of risk as

1. Tracheal intubation
2. Tracheostomy (and presumed for emergency front-of-neck airway (eFONA))
3. Non-invasive ventilation (NIV)
4. Mask ventilation

References

- icmanaesthesiacovi-19.org
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