Prone Ventilation and COVID 19 pandemic

For use alongside - Guidance For: Prone Positioning in Adult Critical Care, ICS November 2019.
https://www.ics.ac.uk/ICS/ICS/Pdfs/Prone_Position_Guidance_in_Adult_Critical_Care.aspx

In the light of recent safety alerts:

On the use of HME Filters during the COVID-19 pandemic and the increased likelihood of ventilator circuits and HME filters becoming waterlogged compromising ventilation please see the following FICM advice:
https://www.ficm.ac.uk/sites/default/files/virus1_0.pdf

MHRA alert: Anaesthetic machines: off-label use during the COVID-19 pandemic (MDA/2020/012) which advised regularly checking for condensate build-up, which may affect functionality.
(https://www.gov.uk/drug-device-alerts/anaesthetic-machines-off-label-use-during-the-covid-19-pandemic-mda-2020-012)

Further incidents relating to obstruction to ventilation due to waterlogging of ventilator circuits and HME filters during repositioning patients, **we advise that prior to turning patients (either prone or supine) the HME filters and in particular the ventilator circuits are checked for water and the airway pressures noted. HME filter waterlogging MUST be considered as part of a cannot ventilate scenario.**

Prone positioning in patients with tracheostomy

We are aware that increasingly patients who have had a tracheostomy placed for COVID 19 are requiring ventilation in the prone position. Historically this has not necessarily been normal practice with it being more conventional to place patients into the prone position with endotracheal tubes. However, our collective experiences during this pandemic have demonstrated that prone positioning can be done safely and successfully in patients with tracheostomies.

The ICS and FICM continue to advocate that units follow the recently published guidance (November 2019) on prone positioning for ventilation of Intensive Care patients. In addition, the following considerations should be considered when placing a patient with a tracheostomy into the prone position.

Prior to proning a patient:

- Ensure the difficult airway trolley has been checked and all equipment is available. This should include all the equipment required to re-intubate a patient as well as a spare tracheostomy tube of the same size and an additional smaller tracheostomy tube.
- Note previous laryngoscopy grade and the current position of tracheostomy tube – this is particularly important if using an adjustable flange tracheostomy tube.
- Ensure patency of the tracheostomy tube, if an inner tube is present make sure it is secured and cleaned, if necessary, replace the inner tube prior to prone positioning.
- Securely tie the tracheostomy tube, consider placing suture to reduce risk of displacement. Ensure there is adequate padding between tie and skin e.g. the use of a pressure reducing pad
- Perform pre-proning arterial blood gas and document results
- Patient should be pre-oxygenated with 100% O2 and ensure appropriate ventilator settings. Note tidal volume and inspiratory pressure
- Suction oropharynx and airway
- Ensure closed circuit suctioning is available and working
- Check ventilator circuit for water and remove if present. If using a HME filter check for saturation of the filter and consider replacing the it prior to commencing procedure.
- It may be necessary to consider using additional pillows under the chest/head to ensure the patient neck is a sufficient height off the mattress to ensure adequate space for the tracheostomy.

Once proned:

- After proning, ensure the tracheostomy is not kinked and that a CO2 trace is still present on the capnograph. Note the position of the tracheostomy and review ventilator settings paying particular attention to the airway pressures.
- Ensure the closed suction is positioned carefully once prone to minimise any pressure on the tracheostomy
- When performing changes to the patient position e.g. swimmers position it is possible to change the position of the patient either by sliding them beyond the end of the bed and back once the position has changed or by lifting the patient off the bed and altering the position. This may require more than 3 people to achieve as the distance required to lift the patient to get the tracheostomy tube round may be more than for the intubated patient.