Needle Cricothyrotomy

A needle cricothyrotomy airway is a standing-order, Paramedic-level procedure designed for the viable patient airway that cannot be successfully managed with the available non-invasive (BVM) or invasive airway devices/procedures, which include the supraglottic devices and endotracheal intubation. This procedure provides limited, short term oxygenation but provides little ventilation. It should be used only as a temporary airway.

Level of care: Paramedic

Indications:
- Massive facial trauma
- Foreign body aspiration
- Laryngoedema
- Laryngospasm
- Airway burns
- Laryngeal fracture
- Epiglottis

Complications:
- Vocal cord injury
- Failure to place catheter in trachea

Procedure:
- Place patient in a supine position and hyperextend the neck using stable positioning. Consider keeping the trauma patient’s head in a neutral position.
- Prepare equipment including 14g Jelco type needle, 10cc syringe, ventilation tubing (pre-made kits should consist of short piece of IV tubing with hub in tact with the other end inserted and taped into a piece of oxygen tubing in which a slit has been made).
- Secure the larynx laterally between thumb and forefinger. Identify the cricothyroid membrane puncture site which is bounded superiorly by the thyroid cartilage and inferiorly by the cricoid cartilage.
- Cleanse the area properly with alcohol
- Insert 14g catheter at a 45 degree angle toward the feet
- Attach a 10cc syringe and attempt to aspirate air
- Thread the catheter completely to hub
- Connect tip to adapter with 15L O2
- Occlude the slit that has been cut into the oxygen tubing to provide a breath for the patient. The slit should be covered for one (1) second and uncovered for three (3) seconds to allow for the necessary prolonged expiratory phase.
- Additional needles may be placed in the cricothyroid membrane as needed and there is space to do so. Placement of additional catheters will allow for better ventilation. The hubs of all catheters should be occluded for one (1) second inhalation and uncovered for three (3) second exhalation.
- Assess placement and secure
- Documentation should include person performing procedure, indication for procedure, other methods of airway interventions that were attempted, time of procedure and response to treatment. A regional airway form should be completed.