

Subject: Scope of Practice/Procedure – ALS
Needle Cricothyrotomy

Associated Policies:

- I. Indications
 - A. Upper airway obstruction in patients after other airway methods have failed.
- II. Contraindications
 - A. Absolute:
 1. None.
 - B. Relative:
 1. Conscious patient.
 2. Anterior neck hematomas or massive subcutaneous emphysema.
- III. Adverse Effects
 - A. SQ emphysema.
 - B. Mediastinal emphysema.
 - C. Hemorrhage of:
 1. Thyroid.
 2. Major vessels.
 - D. Pneumothorax.
 - E. Esophageal perforation, if you penetrate the posterior wall of the trachea.
 - F. Infection.
 - G. Pulmonary barotrauma (hyperinflation can cause rupture).
 - H. Vocal cord trauma.
 - I. Elevated CO₂ levels.
- IV. Equipment
 - A. Transtracheal over the needle catheter 13 gauge (or 12-14-gauge angiocath) or prepackaged Needle cricothyrotomy kit appropriate for age of the patient.
 - B. Female luer lock adapter.
 - C. Bag Valve Mask device. 3ml syringe.
 - D. Alcohol swabs/Chlorhexidine swabs.
 - E. Oxygen source.
 - F. Pulse oximetry and/or End tidal CO device.
- V. Procedure
 - A. Determine need for procedure.
 - B. Locate landmarks.
 - C. Palpate for the cricothyroid membrane.
 - D. Stabilize the larynx using the thumb and middle finger of the other hand.
 - E. Prep the skin and gloved fingers.
 - F. If in transport, stop the vehicle.

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- G. Relocate the landmarks.
 - H. Attach 3 ml syringe to needle, control movement of the needle by holding the hub of the needle, not the syringe or utilize prepackaged device per manufacturers instruction.
 - I. Insert the catheter and syringe combination midline downward and towards the feet at a forty-five (45) degree angle to the skin.
 - J. Apply negative pressure to the syringe during insertion.
 - K. Entrance of air into the syringe indicates that the needle is in the trachea.
 - L. Once air enters the syringe, angle the needle toward the feet and advance needle and catheter approximately 1 to 2 cm into the trachea.
 - M. Slide the catheter down the needle into the trachea, advancing the catheter to the point where the flanges sit against the neck.
 - N. Attach the 3mm connector and Bag Value Mask and ventilate slowly. Observe for chest rise.
 - O. Observe the chest for passive exhalation. If the chest does not deflate, a complete proximal airway obstruction may be present. A second catheter may be inserted next to the first to allow for exhalation.
 - P. Adjust oxygen flow rates to maintain adequate oxygen saturations and/or End title CO2 levels.
 - Q. Secure the device to the neck.
 - R. Confirm placement.
 - S. Auscultate lung fields and epigastrium frequently.
 - T. Evaluate chest movement constantly throughout transport.
 - U. Observe for improvement in patient condition.
- VI. Special Instructions
- A. High pressure ventilation and air entrapment may produce barotrauma very rapidly.
 - B. Do not let go of the catheter during the procedure or ventilation(s) until completely secured.

Approved:  Date: 1-10-20

Approved as to Form: ZZ Karstedt Date: 1-9-20