

1021 NEEDLE CRICOTHYROTOMY

EMR	EMT	EXCER	AEMT	INTERMEDIATE	PARAMEDIC
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Introduction:

- Needle cricothyrotomy is a difficult and hazardous procedure that is to be used only in extraordinary circumstances as defined below.
The reason for performing this procedure must be documented and submitted for review to the NLCERA Medical Director within 24 hours of the call.

Indications:

- Patients <12 years when complete or near complete upper airway obstruction suspected from a medical or traumatic cause
- A life-threatening condition exists **AND** advanced airway management is indicated, **AND** adequate oxygenation and ventilation cannot be accomplished by other less invasive means; unable to oxygenate/ventilate with BLS measures, i-gel, and endotracheal intubation.
- Temporary airway for when other methods have been unsuccessful.

Procedure:

- Have all equipment ready and within hands reach prior to starting
- Don the appropriate BSI/PPE
- Identify and cleanse the cricothyroid membrane
- Position a 10-16-gauge IV catheter attached to a 10 mil syringe, at a 90 degree angle to the neck
- Pierce the skin and exert negative pressure on the syringe as you insert the catheter tip into the center of the cricothyroid membrane
- Advance slowly until the needle tip enters the trachea and air is aspirated into the syringe
- Once the needle tip enters the trachea, advance 2-5 mm more to assure the entry of the catheter and not just the needle tip
- The needle is then withdrawn slightly within the catheter so that the sharp tip is no longer exposed
- The needle/catheter/syringe assembly is then aimed caudally at a 30-45 degree angle, and confirmed a second time with the aspiration of air
- The catheter is then advanced over the needle, removing the needle
- Confirm the position a third time with the aspiration of air through the catheter
- Attach the connector from a 3.0 ET tube to that of the hub of the catheter and attach the BVM
- Check for breath sounds bilateral, and check EtCO₂ waveform
- Ventilate the patient at a ratio of 1 every 5 seconds
- Hold catheter manually and observe for subcutaneous air infiltration
- Upon confirming EtCO₂ waveform and breath sounds bilaterally, with no signs of subcutaneous air infiltration, secure in place
- Provide continuous reassessment of the patient

Complications:

- Insertion in subcutaneous tissue or right mainstem if catheter is advanced too deep.
- Injury to thyroid, vessels, larynx, vocal cords if landmarks are not well identified

Consideration:

- The addition of 2 mL of NS in the syringe attached to the IV catheter may aid in visual confirmation during air aspiration as you will be able to see bubbles
- Using an IV extension between the catheter and 3.0 ET tube connector will aid in securing the catheter and reduce the change of kinking or displacement of the catheter
- EtCO₂ waveform may be lower in amplitude or absent due to a smaller catheter size
- This form of airway management is only temporary and provides excellent oxygenation but poor ventilation thereby causing dangerous hypercarbia after 30-45 minutes.