

1020 SURGICAL CRICOTHYROTOMY



Introduction:

- Surgical 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 NCPP Medical Director within 24 hours of the call.

Indications:

- 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.
- A life threatening condition exists with a need for advanced airway management/definitive airway for failure to oxygenate and/or ventilate.
- Unable to maintain a definitive airway by any other means – BLS maneuvers, I-Gel/Supraglottic, Endotracheal Intubation

Contraindications:

- Age < 12, likelihood of success with a favorable outcome in the pediatric patient is exceedingly low. see [needle cricothyrotomy](#)
- Anterior neck hematoma is a relative contraindication.
- Unable to locate landmarks due to trauma, obesity, variant anatomy, etc.

Technique:

1. Don the appropriate PPE/BSI
2. Prepare and check all of the required equipment for the procedure prior to starting
3. Identify the cricothyroid membrane and prepare with area with aseptic solution
4. Position the patient in a supine position, with in-line spinal immobilization if indicated. If cervical spine injury not suspected, neck extension will improve anatomic view
5. Make a careful vertical incision through the skin, then a horizontal incision through the cricothyroid membrane being sure to incise as close to the cricothyroid cartilage as possible.
6. Follow the blade with little finger to maintain opening
7. Dilate the incision using the little finger, feeling for the tracheal rings, until the opening is sufficient to allow passage of the endotracheal tube
8. Pass the endotracheal tube through the opening until the appropriate depth is reached
9. If the trach is deep into the neck, utilization of the bougie should be used to provide a guide to railroad the tube into the trachea
10. Inflate the cuff and ventilate the patient, observe for subcutaneous air infiltration
11. Confirm and document tube placement by:
 - a. ETCO₂, preferably with waveform capnography
 - b. Breath sounds
 - c. Rising pulse oximetry
 - d. Other means as needed
12. Ventilate with BVM assessing adequacy of ventilation
13. Secure tube with tube ties or device
14. If necessary, control any bleeding and dress the incision
15. Continually reassess ventilation, oxygenation and tube placement

Precautions:

- Success of procedure is dependent on correct identification of cricothyroid membrane

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EMR	EMT	EMT-IV	ABMT	INTERMEDIATE	PARAMEDIC
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- Bleeding will occur, even with correct technique. Straying from the midline is dangerous and likely to cause hemorrhage
- Monitor for subcutaneous emphysema
- Hemorrhage for lacerating large vessels or laceration of the thyroid if landmarks are not carefully identified.