

**REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMT – Paramedic**

SMO: Surgical Cricothyrotomy

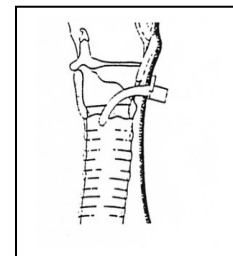
Overview: To provide emergency airway access. To relieve life-threatening upper airway obstruction in situations where manual maneuvers to establish an airway and attempts at ventilation have failed and endotracheal intubation cannot be performed.

OBJECTIVE FINDINGS

- Pt unconscious
- Unable to ventilate despite attempts to relieve obstruction.
- Patient's skin color may be pale, cyanotic, ashen
- Possible facial trauma restricting normal intubation as an option

EQUIPMENT NEEDED:

- Universal Precautions for blood and body fluid exposure
- Betadine and alcohol swabs
- Sterile 4 X 4's
- Short scalpel
- Kelly forceps (optional)
- Pediatric BVM Device
- Stethoscope
- Airway catheter (Shiley trach tube) or ET tubes of assorted sizes



PROCEDURE

- Unless contraindicated by trauma, place a small roll under patient's shoulders to slightly extend neck. In patients suspected of having a spinal injury, inline stabilization should be maintained throughout the procedure.
- Don sterile gloves and attempt to maintain sterile field as best able.
- Locate cricothyroid membrane by tilting patient's head back (if not contraindicated by possible spinal injury) and palpating for the V-Notch of the thyroid cartilage (Adams Apple).
- Prepare the skin with antiseptic solution and maintain aseptic technique.
- Stabilize the thyroid cartilage between thumb and middle finger of one hand.
- Press index finger of same hand between the thyroid and cricoid cartilage to identify cricothyroid membrane.
- Using a short scalpel, make a 2cm **vertical** incision through the skin, to visualize the cricothyroid membrane.
- After identifying the cricothyroid membrane, make a **horizontal** incision using the short scalpel blade. An adequate incision eases the introduction of the trach tube.
- Place the handle of the scalpel horizontally into the cricothyroid membrane and gently rotate vertically OR open the incision with Kelly forceps.
- Carefully insert the tracheostomy tube supplied in the surgical cric kit (preferred method—less chance of damage to the larynx). Inflate the cuff.

PROCEDURE (cont)

- ___ Alternate method: insert an appropriate size (usual appropriate size 6.0- 7.0 mm tube – may be patient size-specific) ET tube into the incision until the cuff disappears into the incision. (Do not to advance the tube beyond a few centimeters once in the airway to avoid mainstem intubation.)
- ___ Inflate the cuff.
- ___ Provide ventilation by a bag-valve device with 100% oxygen. Allow for exhalation after each ventilation.
- ___ Determine adequacy of ventilation through bilateral auscultation, epigastrium auscultation, and observation of rise and fall of the chest. Adjust the tube if necessary.
- ___ Securely fix the trach tube or ET tube in place.
- ___ Provide update of patient's status to hospital and transport immediately.

Documentation of adherence to protocol:

- ___ Reason for procedure including physical findings
- ___ Attempts to secure the airway by less invasive means (if applicable). If you did not make any attempt to secure the airway with any other way document why you did not.
- ___ Type and size tube placed
- ___ Results of procedure including physical findings
- ___ If there was significant bleeding, include an estimate of the amount of blood lost and the method used to stop the bleeding.

PRECAUTIONS AND COMMENTS

- Complications
 - False placement
 - Bleeding
 - Damage to larynx and vocal cords
 - Subcutaneous emphysema
 - Mediastinal emphysema
 - Esophageal perforation
 - Thyroid perforation, hematoma (placement of needle has been distal to cricothyroid membrane too low)
- Contraindications
 - Inability to identify anatomical landmarks.
 - Underlying anatomical abnormality (e.g. tumor).
 - Children under 10 years of age -- use needle cricothyrotomy (transtracheal ventilation) in these patients.

7/04

Reviewed:

Revised:

EMS/ Region1 SMOs