

# Surgical Cricothyrotomy



Rescue Lieutenant OCS

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- Vicki Donechie
- Mark Gale
- Scott Lord
- Dorothy Naddy

# Surgical Cricothyrotomy



- Standards:

South Florida Regional Common EMS  
Protocols - 2004

# Surgical Cricothyrotomy



- Description:

Cricothyrotomy is an emergency procedure involving incising or puncturing the cricothyroid membrane to access the trachea for ventilation purposes.

# Surgical Cricothyrotomy



- Indications:

Cricothyrotomy is indicated for relief of life-threatening upper airway obstruction in which manual maneuvers to establish an airway, endotracheal intubation is not possible and attempts at ventilation have failed.

Such circumstances might include the patient with severe laryngeal edema or facial and upper laryngeal trauma.

# Surgical Cricothyrotomy



- Indications (continued):

Direct visualization with a laryngoscope should be attempted to improve the airway by using Magill forceps to remove any foreign body, when applicable.

\*\* Needle cricothyrotomy is recommended when unable to oxygenate/ventilate children < 12 years of age.

# Surgical Cricothyrotomy



- Contraindications:

None when a definitive airway is needed and other attempts to secure an airway have failed or are not available as an option.

# Surgical Cricothyrotomy



- Side Effects:

This procedure is not without considerable hazards. The cricothyroid membrane must be correctly identified to prevent uncontrollable bleeding and possible damage to surrounding structures when the opening is made.

# Surgical Cricothyrotomy



- Special Considerations:

Should air escape out of the trachea through the hole created by the catheter, subcutaneous or mediastinal emphysema could develop.

Also, if bleeding is severe, this could hamper proper gas diffusion in the lungs, as with pulmonary edema.



# Surgical Cricothyrotomy



- Preparation Procedures:
  - 1) Assemble and prepare equipment necessary the for procedure:
    - o Iodine Prep Pads
    - o Scalpel
    - o Small Magill Forceps
    - o Trauma Shears
    - o 6.0 E.T. Tube
    - o 10cc Syringe
    - o Adult BVM
    - o Surgical Tape
    - o Stethoscope
    - o End Tidal CO2 Detector

# Surgical Cricothyrotomy



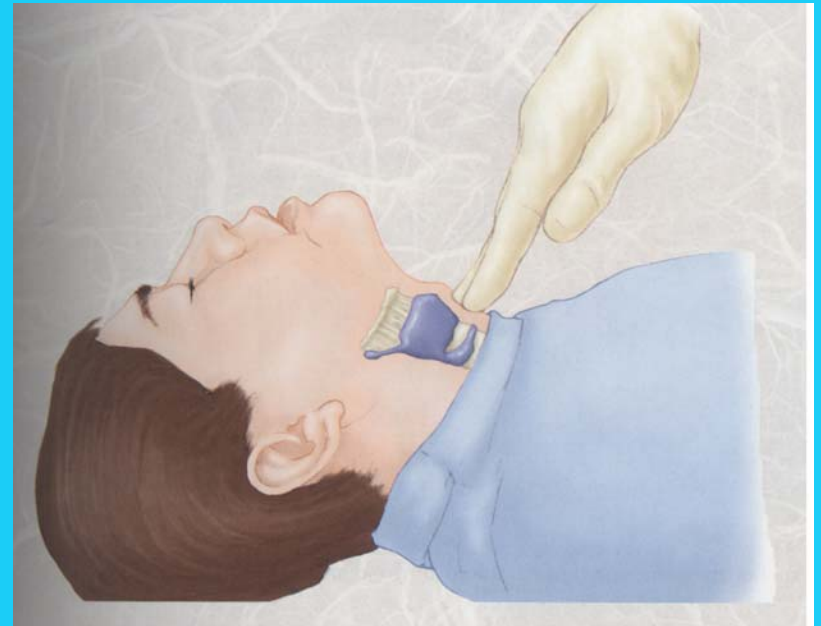
- Preparation Procedures:
  - 1) Position the patient on a gurney with the neck in a neutral position.
  - 2) Hyperextend the patient's neck (unless cervical spine injury is suspected).

This position brings the larynx and cricothyroid membrane into the extreme anterior position.

# Surgical Cricothyrotomy



- 3) Locate the cricothyroid membrane between the cricoid and thyroid cartilages by palpating the depression caudal (towards the feet) to the midline Adam's Apple.



# Surgical Cricothyrotomy

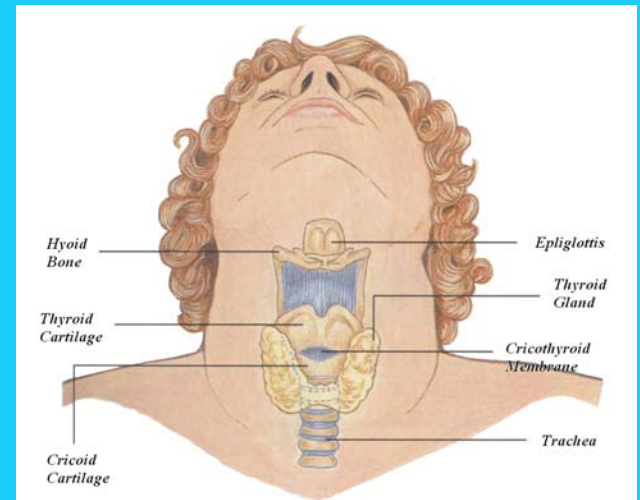


- 4) Clean the area well with a Betadine solution or providone-iodine swab stick.

# Surgical Cricothyrotomy



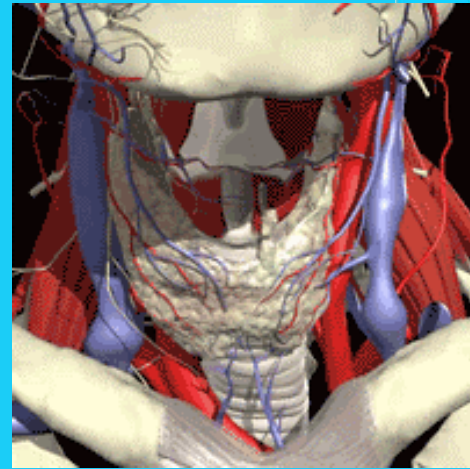
- Steps for performing Cricothyroidotomy (Adult)
- 1) Identify and prep area (as previously described).



# Surgical Cricothyrotomy



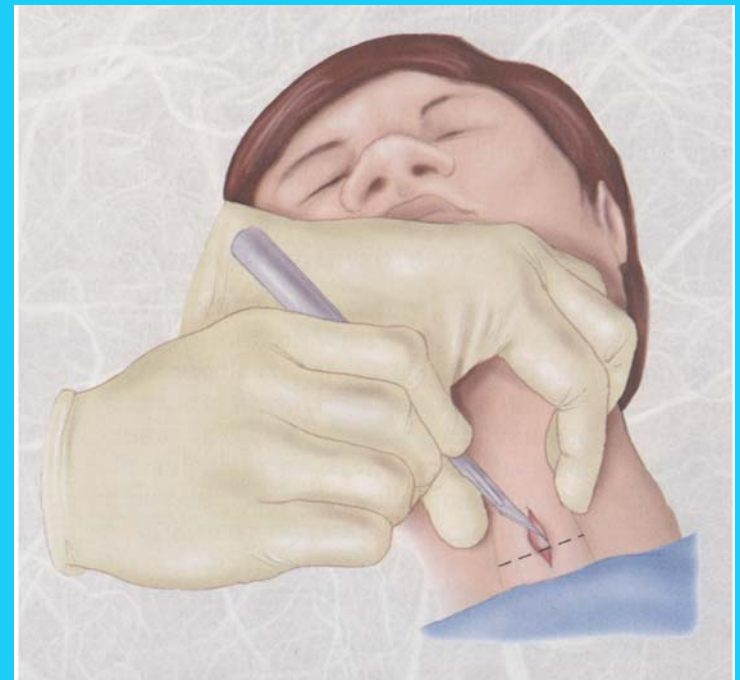
- 2) Using a scalpel, make a vertical incision through the skin.



# Surgical Cricothyrotomy



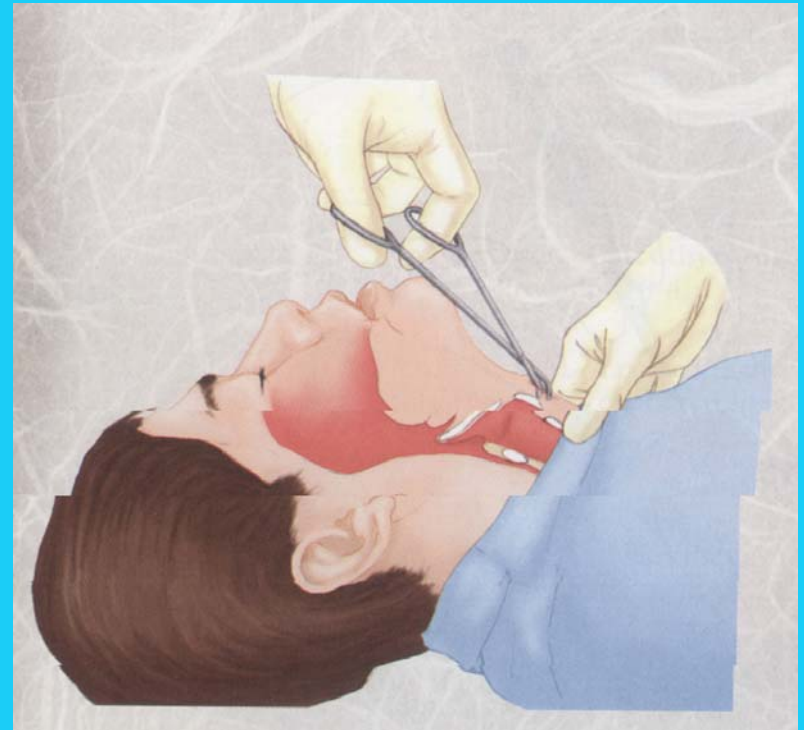
- 3) After making a vertical incision through the skin, make a horizontal incision through the cricothyroid membrane.



# Surgical Cricothyrotomy



- 4) Once the scalpel has passed into the membrane , Utilize a small Magill forceps or curved hemostat, or insert the handle of the scalpel into the opening and twist the handle to open a space between the cricoid and thyroid cartilages.

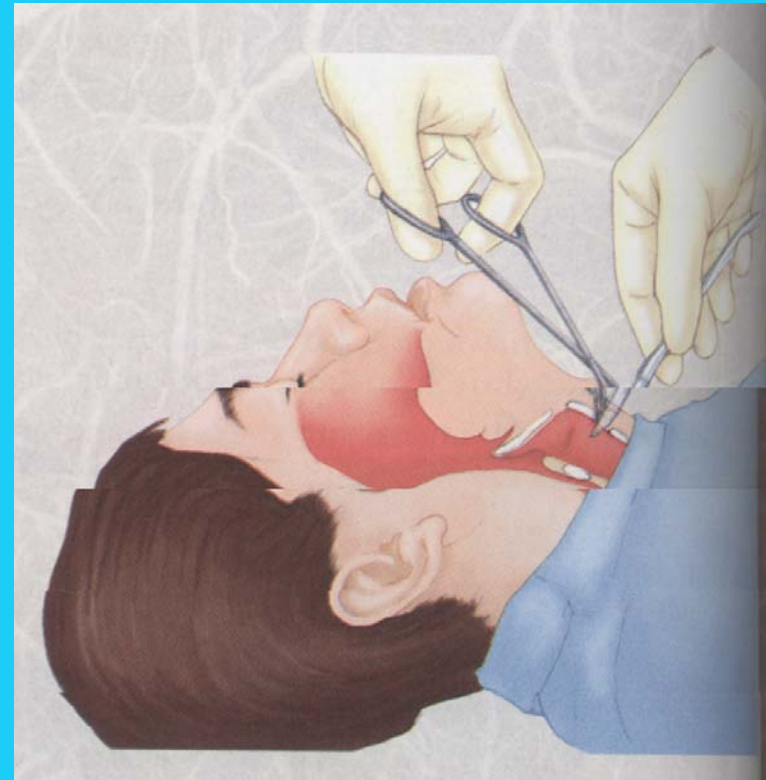




# Surgical Cricothyrotomy



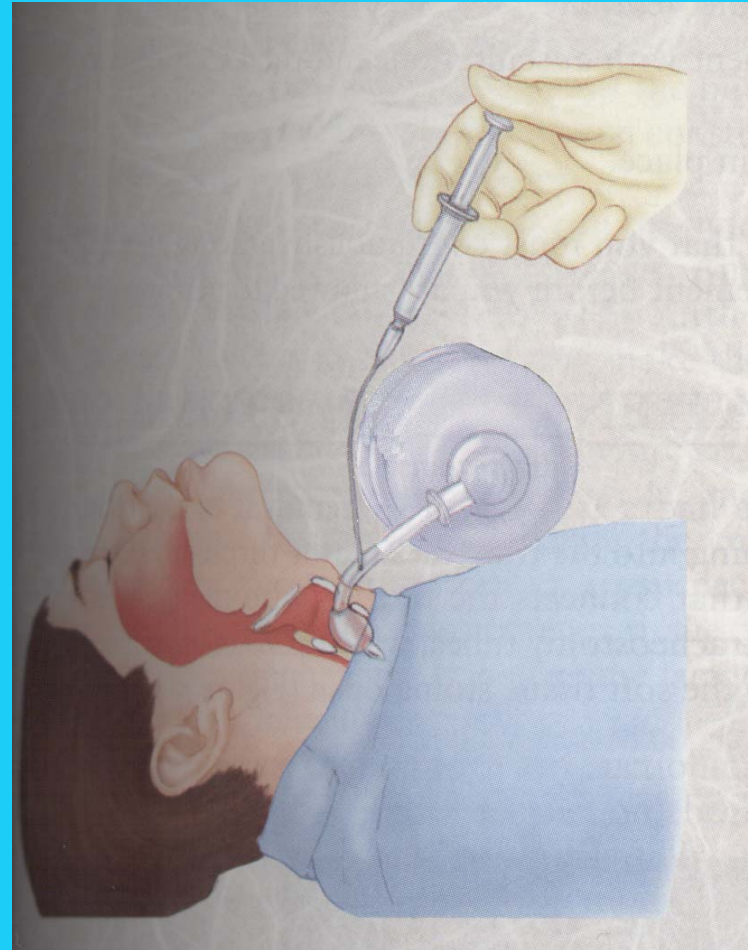
- 5) Insert a size 6.0 endotracheal tube through the incision.



# Surgical Cricothyrotomy



- 6) Inflate the cuff with 10cc's of air then ventilate the patient with a bag-valve unit at the highest Oxygen concentration.
- 7) Secure the tube and auscultate lung sounds for proper tube placement.
- 8) Then connect and reconfirm placement using ET CO2 device.



# Test Questions



# Cricothyrotomy

# Test Questions - Cricothyrotomy



1. At what age is a Needle Cricothyrotomy recommended for children?

- a) 8
- b) 11
- c) <12
- d) All the above

# Test Questions - Cricothyrotomy



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- a) 8
- b) 11
- c) <12
- d) All the above

# Test Questions - Cricothyrotomy



2. For a Surgical Airway (Cricothyrotomy), what size tube is recommended?

- a) 7.5 mm
- b) 6.0 mm
- c) 5.0 mm
- d) Any tube that will fit

# Test Questions - Cricothyrotomy



2. For a Surgical Airway (Cricothyrotomy), what size tube is recommended?

- a) 7.5 mm
- b) **6.0 mm**
- c) 5.0 mm
- d) any size that fits

# Test Questions - Cricothyrotomy



3. A Surgical Airway (Cricothyrotomy) is only indicated in trauma patients, and not in medical patients.

- a) True
- b) False



# Test Questions - Cricothyrotomy



3. A Surgical Airway (Cricothyrotomy) is only indicated in trauma patients, and not in medical patients.

- a) True
- b) **False**

# Test Questions - Cricothyrotomy



4. When performing a Surgical Airway (Cricothyrotomy) the cervical collar can be left in place to facilitate spinal immobilization and the incisions are made through the front opening in the collar:

- a) True
- b) False

# Test Questions - Cricothyrotomy



4. When performing a Surgical Airway (Cricothyrotomy) the cervical collar can be left in place to facilitate spinal immobilization and the incisions are made through the front opening in the collar:

- a) True
- b) **False**

# Test Questions - Cricothyrotomy



5. What size scalpel blade should be used to perform a cricothyrotomy?

- a) 6
- b) 15
- c) 10
- d) 12

# Test Questions - Cricothyrotomy



5. What size scalpel blade should be used to perform a cricothyrotomy?

- a) 6
- b) **15**
- c) 10
- d) 12