

# ADVANCED AIRWAY MANAGEMENT

## CRICOTHYROTOMY

### OVERVIEW:

Cricothyrotomy is the final and definitive airway management technique available to providers. The technique is rarely used but when needed must be performed rapidly without hesitation. Providers should review this skill often.

### INDICATIONS:

- ❑ Attempts to control airway by any other available means have been unsuccessful
- ❑ Standard airway control methods are not possible or are contraindicated

### CONTRAINDICATIONS:

- ❑ Pediatric patient (PerTrach only)
- ❑ Coagulopathy (relative contraindication)
- ❑ There are few true contraindications for cricothyrotomy but providers should be aware that presence of the following could indicate the possibility of difficulty. Locate your landmarks and don't lose them.
  - Surgery
  - Hematoma, tumor, or abscess
  - Obesity
  - Radiation
  - Trauma

### PROCEDURE:

- ❑ Consider sedation - Midazolam if needed and time warrants. See "Midazolam" Protocol

#### ***PERTRACH***

- ❑ Test cuffed tube on dilator; deflate
- ❑ Prep site with antiseptic wipe
- ❑ Make 1-2 cm incision in skin over cricothyroid membrane
- ❑ Insert needle into incision at 90 degrees to airway with syringe attached
- ❑ Advance until tip is in airway, aspirate for air to establish position in airway
- ❑ Advance needle at acute angle in airway, toward the carina
- ❑ Remove syringe and insert Teflon guide of dilator in needle, guiding the tubing through it
- ❑ Squeeze wings to split needle then open wings out. Advance dilator to skin level, remove needle
- ❑ Exert pressure and force dilator into the airway until the tube is in position with faceplate against the skin.
- ❑ Remove dilator and secure tube to patient
- ❑ Inflate cuff

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## CRICOTHYROTOMY CONT.

### *NU-TRACH*

- ❑ Position patient supine with head and neck in neutral position
- ❑ Identify cricothyroid membrane
  - Palpate Adam's Apple
  - Move finger down 2-3 centimeters
- ❑ Prepare skin by cleaning it with iodine or alcohol
- ❑ Partially insert the needle and stylet
- ❑ Aspirate air to ensure proper placement
- ❑ Twist and remove stylet
- ❑ Advance instrument gently to skin level
  - Free rocking motion confirms proper depth of insertion
- ❑ Insert 4.0 mm airway and obturator, push downward into housing needle
- ❑ Remove obturator
- ❑ To dilate, remove airway, leaving housing in place
  - Insert and remove 6.0 mm and then 7.0 mm obturators
- ❑ Secure in place
- ❑ Ventilate and apply ETCO<sub>2</sub> monitor

### *SURGICAL CRICOTHYROTOMY (CRIC-KIT)*

- ❑ Locate site: cricothyroid membrane- the soft aspect inferior to the larynx, mid-line anterior trachea
- ❑ Clean the site as you would an IV site
- ❑ Stabilize the larynx between thumb and fore finger of non-dominant hand
- ❑ Palpate cricothyroid membrane
- ❑ Make a vertical incision in the skin, then a horizontal incision through the membrane
- ❑ Insert the tracheal hook through the membrane and hook the cricoid cartilage, apply anterior displacement
- ❑ Insert 6mm ETT and direct distally into the trachea, inflate the cuff with 10cc of air
- ❑ Secure the tube to the pt. and ventilate

PARAMEDIC

PARAMEDIC

### **CONSIDERATIONS:**

- ❑ Confirm placement with: chest rise, lung sounds, ETCO<sub>2</sub>(colormetric and/or capnography), and SpO<sub>2</sub>
- ❑ Ensure complete documentation of procedure to include:
  - Time of procedure
  - name of provider performing procedure
  - History and physical exam clearly demonstrating indications for procedure
  - Method used to secure Cric/ Trach device or ETT
  - Breath sound assessment and capnography levels before and after procedure,
  - Successful and non-successful attempts
  - Therapeutic effects/changes in patient condition
  - Difficulties with insertion or complications encountered