

# AIRLINK CRITICAL CARE TRANSPORT

## CRICOTHYROIDOTOMY

### **Objective:**

This procedure is used to provide emergent airway access if a safer, less invasive airway (oral or nasotracheal intubation) cannot be established or is contraindicated.

### **Indications:**

Foreign-body obstruction; facial and laryngeal trauma; inhalation, thermal, or caustic injury to the upper airway; angioneurotic edema; upper airway bleeding; epiglottitis and severe croup.

### **Contraindication:**

#### Absolute

Age < 12 years, transection of the trachea

#### Relative

Neck mass, swelling or cellulitis, hematoma, coagulopathy, fracture larynx.

### **Procedure:**

Hyperextend the neck with suspected cervical spine injury maintain head and neck in neutral position. Palpate the thyroid notch and cricothyroid membrane with the non-dominant hand.

Make a 2-3 cm vertical incision over the area of the cricothyroid membrane.

A horizontal stab incision is then made through the cricothyroid membrane. Cough or air movement through the incision may be detected when the trachea is entered.

To obtain a wider opening use Trousseau Dilator or scalpel handle to spread the cricothyroid membrane.

Stabilize the cricothyroid using the instrument in place or tracheal hook by attaching to the inferior or superior border and apply traction.

Insert a 5.0-6.0 mm cuffed endotracheal tube approximately 2 cm in the caudal direction.

Remove the stabilizing device and inflate the cuff and ventilate.

Evaluate ventilation and secure the tube.

Confirm successful cannulation: auscultate breath sounds, monitor SpO2 and /or ETCO2, and chest rise.

### **Pearls:**

1. Work as a team.
2. Be precise. Procedure should take 90 seconds or less.
3. Incision of the cricothyroid membrane has less bleeding if done closer to the cricoid cartilage.
4. Retract the scalpel blade when not in use.
5. Never point the scalpel caudally when incising as it could lacerate the vocal cords.
6. Avoid incising too deeply to prevent lacerating the back wall of the trachea or esophagus.

### **References:**

1. Emergency Medicine. A Comprehensive Study Guide. Sixth Edition. American College of Physicians. Tintinalli et. al. 2010.
2. Essential Emergency Procedures. Kaushal Shah, MD. Lippincott Williams and Wilkins, 2008.
3. Flight Nursing Principals and Practice. Renee Hollaren. Second Edition. Mosby
4. Current Diagnosis and Treatment Emergency Medicine. Sixth Edition. Stone and Humphries. McGraw Hill, 2008.
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