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|  | <b>COUNTY OF SACRAMENTO</b><br>EMERGENCY MEDICAL SERVICES AGENCY                | Document #  | 8801.12  |
|   | <u>PROGRAM DOCUMENT:</u><br><b>Cricothyrotomy, Needle with Jet Insufflation</b> | Draft Date: | 02/01/93 |
|   |   | Effective:  | 11/01/16 |
|   |   | Revised:    | 07/25/16 |
|   |   | Review:     | 09/01/18 |

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 EMS Medical Director

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 EMS Administrator

**Purpose:**

- A. To serve as an advanced life support skill guideline when performing a Cricothyrotomy.

**Authority:**

- A. California Health and Safety Code, Division 2.5
- B. California Code of Regulations, Title 22, Division 9

**Indications:**

- A. Older than three (3) years or greater than fifteen (15) kilograms on whom other airway methods have failed (see airway algorithms in PD #8020),

**OR**

- B. Have orofacial injuries or partial airway obstruction that precludes orotracheal intubation.

**Absolute Contraindications:**

- A. DO NOT perform on a conscious patient.
- B. DO NOT perform on patients with an anterior neck hematoma or with massive subcutaneous emphysema.
- C. DO NOT perform on patients with a complete airway obstruction.

**Equipment:**

- A. 13-14 gauge over-the-needle cricothyrotomy catheter.
- B. Jet insufflation device with pressure gauge.
- C. 12 ml syringe.
- D. Antiseptic Solution.
- E. Oxygen source 40-60 psi.

**Procedure:**

PERFORMING THIS TECHNIQUE CORRECTLY REQUIRES KNOWLEDGE OF AIRWAY AND NECK ANATOMY (BOTH STRUCTURES AND VASCLATURE).

- A. With the patient in supine position, palpate the cricothyroid membrane, anteriorly, between the thyroid cartilage and cricoid cartilage and prepare the area with antiseptic solution.
- B. With the over-the-needle catheter attached to a 12 ml syringe, puncture the skin midline and directly over the cricothyroid membrane and direct the over-the-needle-catheter at a 45-70 degree angle caudally.

- C. Carefully insert the over-the-needle-catheter through the lower half of the cricothyroid membrane, aspirating as the needle is advanced, being careful not to perforate the posterior wall of the trachea. Aspiration of air signifies entry into the tracheal lumen.
- D. Gently advance the catheter downward, using the needle as a guide. Once in position, withdraw the needle.
- E. Attach the catheter hub to the jet inflation device and ventilate with a 1:5 second ratio of inflation: exhalation by triggering the inflation device.
- F. If the soft tissues of the neck begin to balloon (subcutaneous emphysema), catheter is superficial to trachea. Remove catheter. If landmarks are present, insert another catheter.
- G. Transport immediately after procedure, continually monitoring patient's respiratory status in route to hospital.
- H. Document indications, procedure, and results.

**Complications:**

- A. Subcutaneous emphysema (readily visible).
- B. Mediastinal emphysema.
- C. Hemorrhage.
- D. Pneumothorax.
- E. Esophageal perforation.
- F. Infection.
- G. Pulmonary barotrauma.
- H. Vocal cord trauma.

**NOTE:**

Cricothyrotomy may be performed using a commercially available cricothyrotomy kit approved by SCEMSA, when following manufacturer use guidelines.