Kittitas County Prehospital EMS Protocols

SUBJECT: CRICOTHYROTOMY

The following situations may warrant the use of needle or surgical cricothyroidotomy:

- Acute upper airway obstruction not relieved by advanced airway maneuvers such as right mainstem intubation.
- Patient in respiratory arrest secondary to massive facial injuries, which prevents orotracheal intubation.
- Patient with neck/tracheal injury, where endotracheal intubation attempts have been unsuccessful.

Procedure

A. While continuing attempts to ventilate, place the patient in supine position and hyperextend the head and neck. If spinal injury is suspected, the head and neck should be maintained in a neutral, in-line position.

B. Locate the patient's cricothyroid membrane and prep the area with povidone-iodine swabs.

C. To perform a needle cricothyroidotomy:

1. Attach a 10 ga catheter over-the-needle (16 ga for pediatric patients) device to a 10 cc syringe; fill the syringe with 1-2 cc normal saline.
2. Insert the needle/catheter in the midline, through the skin and membrane. Direct the needle posterior and caudally at a 45° angle to the trachea.
3. Advance the needle and catheter while maintaining negative pressure with the syringe. Air should readily fill the syringe when the trachea is entered.
4. Advance the catheter over the needle until the catheter hub is flush with the skin, then remove the needle and syringe.
5. Connect a #3.0 endotracheal tube adapter to the catheter, then attach a bag-valve device and begin ventilations.
6. Check for adequacy of ventilations.
7. Dress and secure the wound site.

D. If long transport time, and unable to maintain the airway:

1. Make a horizontal incision ~ 2-3 cm long through the skin and through the cricothyroidotomy membrane with the scapel blade.

2. Using one hand on the larynx to stabilize it (use an assistant if necessary), insert the scalpel handle and rotate 90° to spread the cartilage.

3. Insert a small cuffed ET tube (4.0–5.0 mm) into the cricothyroid membrane, directing the tube distally into the trachea.

4. Inflate the cuff, attach a bag-valve device, and ventilate.

5. Check for adequacy of ventilations.

6. Dress and secure the wound site.

Option: An MPD-approved commercial device may be used in lieu of the surgical technique and endotracheal tube.