P121 LFD PROCEDURE PROTOCOL: SURGICAL CRICOTHYROTOMY

Paramedic

Introduction:

- Surgical cricothyrotomy is a difficult and hazardous procedure that is to be used only in extraordinary circumstances as defined below. The reason for performing this procedure must be documented and submitted for review to the EMS Medical Director within 24 hours. Surgical cricothyrotomy is to be performed only by paramedics trained in this procedure.
- An endotracheal tube introducer ("bougie") facilitates this procedure and has the advantage of additional confirmation of tube position and ease of endotracheal tube placement. If no bougie is available the procedure may be performed without a bougie by introducing endotracheal tube or tracheostomy tube directly into cricothyroid membrane.
- Given the rarity and relative unfamiliarity of this procedure it may be helpful to have a medical consult on the phone during the procedure. Consider contacting base for all cricothyroidotomy procedures. Individual Medical Directors **may mandate base contact** before initiating the procedure. Individual agency policy and procedures apply and providers are responsible for knowing and following these policies.
- Perform cricothyrotomy according to manufacturer's instructions for selected device
    a. Control-Cric™ Quick Reference Guide, see next page.
    b. Control-Cric™ is the preferred and PHTLS recommended method

Indications:

- A life-threatening condition exists AND advanced airway management is indicated ***AND*** you are unable to establish an airway or ventilate the patient by any other means.

Contraindications:

- Surgical cricothyrotomy is contraindicated in patients less than 12 years of age for anatomic reasons.

Technique:

1. Position the patient supine, with in-line spinal immobilization if indicated. If cervical spine injury not suspected, neck extension will improve anatomic view.
2. Using an aseptic technique (betadine/alcohol wipes), cleanse the area.
3. Standing on the left side of the patient, stabilize the larynx with the thumb and middle finger of your left hand, and identify the cricothyroid membrane, typically 4 finger-breadths below mandible
4. Using a scalpel, make a 3 cm centimeter vertical incision 0.5 cm deep through the skin and fascia, over the cricothyroid membrane. With finger, dissect the tissue and locate the cricothyroid membrane.
5. Make a horizontal incision through the cricothyroid membrane with the scalpel blade oriented caudal and away from the cords.
6. Insert the bougie curved-tip first through the incision and angled towards the patient's feet

a. If no bougie available, use tracheal hook instrument to lift caudal edge of incision to facilitate visualization and introduction of ETT directly into trachea and skip to # 9.

7. Advance the bougie into the trachea feeling for "clicks" of tracheal rings and until "hangup" when it cannot be advanced any further. This confirms tracheal position.
8. Advance a 6-0 endotracheal tube over the bougie and into the trachea. It is very easy to place tube in right mainstem bronchus, so carefully assess for symmetry of breath sounds. Remove bougie while stabilizing ETT ensuring it does not become dislodged
9. Ventilate with BVM and 100% oxygen
10. Confirm and document tracheal tube placement as with all advanced airways: $ETCO_2$ as well as clinical indicators e.g.: symmetry of breath sounds, rising pulse oximetry, etc.
11. Secure tube with ties.
12. Observe for subcutaneous air, which may indicate tracheal injury or extra- tracheal tube position
13. Continually reassess ventilation, oxygenation and tube placement.

Precautions:

- Success of procedure is dependent on correct identification of cricothyroid membrane
- Bleeding will occur, even with correct technique. Straying from the midline is dangerous and likely to cause hemorrhage from the carotid or jugular vessels, or their branches.