

Cricothyrotomy is indicated as a last resort to secure an otherwise unmanageable airway. Prior to the institution of this procedure, all other less invasive methods of airway management should be attempted.

A. Needle Cricothyrotomy (14 gauge catheter)

ALS

1. Place the patient supine
2. Assemble equipment:
 - a) 14 gauge Angiocath
 - b) Oxygen supply tubing
 - c) 50 psi O2 source
 - d) Antiseptic prep
3. Manually stabilize the head and neck.
4. Identify the cricothyroid membrane.
5. Prep the area with an antiseptic swab.
6. Stabilize the thyroid cartilage.
7. Puncture the skin midline directly over the cricothyroid membrane on a 90 degree angle and enter the trachea.
8. Aspirate air to confirm placement in the trachea.
9. Prior to further advancement, direct the Angiocath 45 degrees towards the feet.
10. Withdraw the needle while advancing the catheter to the hub.
11. Secure the catheter to the patient.
12. Ventilate the patient using transtracheal jet ventilation.

NOTE: Though the 14g needle technique requires fewer steps, it has significant disadvantages:

1. Transtracheal jet ventilation is required when using a 14g catheter.
2. The small lumen of the catheter does not allow adequate airflow to maintain adequate ventilation using conventional ventilation
3. The thin plastic 14g catheter bends very easily and can thus cut off airflow.

B. Transtracheal Ventilation

NOTE: This equipment should be prepared ahead of time and stored.

1. A few inches from the distal end of the oxygen supply tubing, bend tubing over and cut a corner off the tubing to create a small hole.
2. Remove the plunger from a 1cc syringe. Cut off the distal end of the 1cc syringe and insert it into the end of oxygen supply tubing.
3. Connect the 1cc syringe with oxygen tubing to the catheter hub in the patients trachea.
4. Connect the other end of the of oxygen tubing to an oxygen source set at 15 L/min
5. Place a finger over the hole that was made in the oxygen tubing and watch for chest rise.
6. Ventilate the patient using the 1:2 rule. This is allowing one unit of time for ventilations (chest rise) and two units of time for exhalation.
7. Reassess the patient.

C. Surgical Cricothyrotomy

A consideration should be given to performing a surgical cricothyrotomy, as a last means if unable to secure a patent airway. This procedure can only be performed by individuals familiar with the procedure and only after receiving authorization from Medical Control. If there is a delay in establishing contact with Medical Control, perform the procedure and advise Medical Control as soon as possible.

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1. Place patient in supine position.
2. Stabilize the head and neck.
3. Use the Surgical Cricothyrotomy Kit (pre-packaged) or Assemble equipment if the kit is unavailable:
 - a) Antiseptic prep
 - b) Scalpel
 - c) Curved forceps
 - d) 6.0 mm cuffed ET tube
4. Identify the cricothyroid membrane.
5. Cleanse area with antiseptic wipe.
6. Continually hold skin taut over the thyroid cartilage.



7. Make a 1 inch vertical incision through the skin over cricoid membrane to expose the trachea.
8. Make a horizontal puncture over the cricothyroid membrane with the scalpel.
9. Open the puncture with a gloved finger or curved forceps if available.
10. Insert the ET tube into the puncture. Always direct the tube distally.
11. Inflate the cuff, ventilate the patient with a BVM and secure the tube.