

# Cricothyroidotomy

## **Introduction:**

Cricothyroidotomy is a procedure in which a surgical opening is made in the cricothyroid membrane in order to insert an airway.

## **Indications:**

Inability to intubate the patient endotracheally, as in:

- Airway obstruction due to oropharyngeal edema
- Massive hemorrhage
- Profound emesis
- Laryngospasm
- Mass effect from tumor
- Severe facial injuries
- Obstructing foreign body

## **Contraindications:**

### ***Absolute:***

- Transection of the trachea
- Fracture of the larynx
- Laryngotracheal disruption
- When other nonsurgical airway procedures (endotracheal or nasotracheal) isn't possible.

### ***Relative:***

- Small children less than 1 years old
- Bleeding diathesis

## **Not a very good emergency procedure in:**

- Burn of the neck
- Immunosuppressive patient
- Long - term use

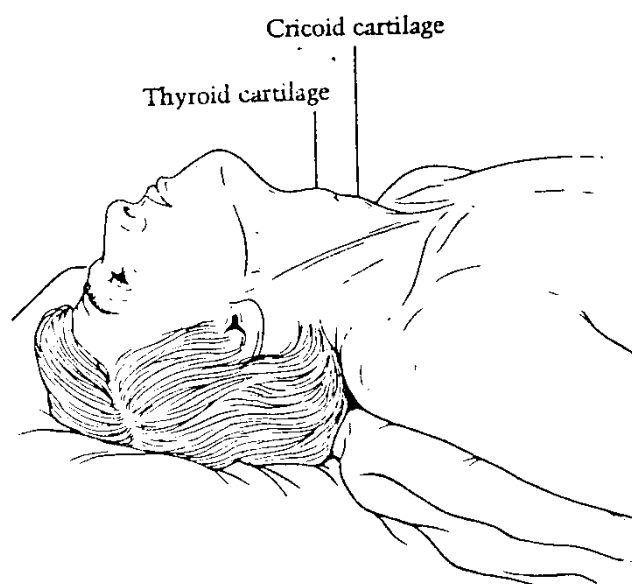
## Equipment:

- Sterile prep solution
- Sterile field
- Local anesthetic
- Scalpel-No. 11 blade
- Blunt clamp
- Tracheostomy or plastic syringe, 10 ml
- Suture set
- Dressing

## Position:

Supine, head of bed elevated 10 degree.

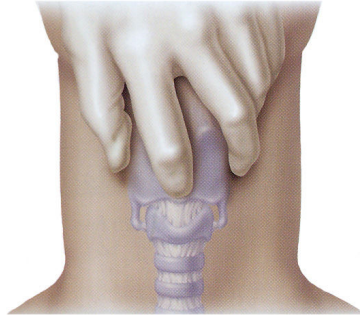
Rolled towel under shoulders, neck hyperextended.



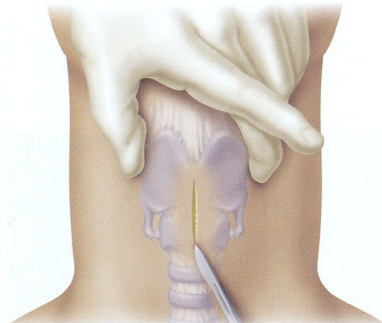
## Technique:

1. Prepare the area with an antiseptic solution and drape the site.
2. Inject local anesthetic (not necessary in a highly emergent setting).

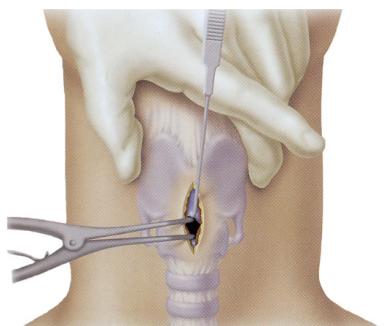
Ϛ. Grasp the larynx with one hand. With the other hand, palpate the thyroid cartilage and cricoid cartilage, below it.



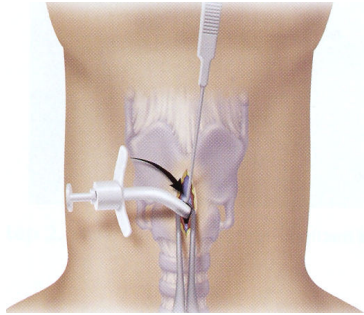
ϛ. With a size 11 scalpel, Make a midline vertical skin incision, 3-5 cm in length.



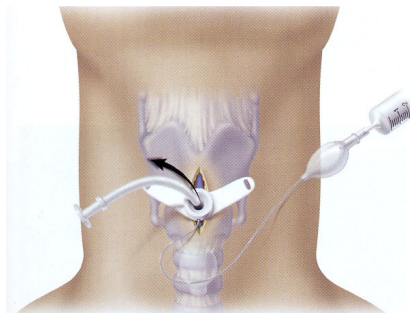
Ϝ. Insert the dilator and open to expand the incision vertically



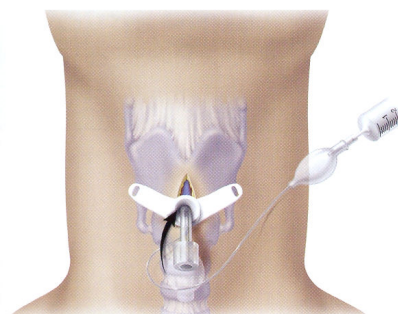
Ϛ. Insert the tracheostomy tube into the incision, and advance the tube into the trachea.



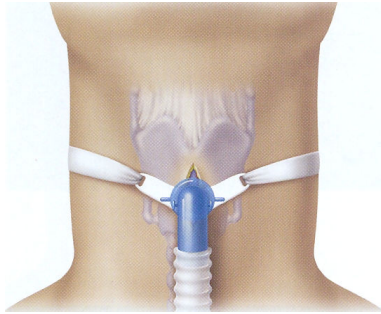
ϛ. Remove the obturator.



Ϝ. Replace the inner cannula and inflate the cuff with minimum pressure to overcome airway leak.



9. Fix the tube (using suture or tie the tapes around the neck).



10. Place a dressing around the tube.

### **Complications:**

- Thyroid gland damage
- Large vessel injury with hemorrhage
- Infection
- Thyroid cartilage fracture
- Subglottic stenosis
- Damage to adjacent anatomic structures
- Aspiration

### **Care of Tracheostomy:**

- *Daily:* Change dressing, cleanse and dry adjacent skin.
- *Weekly:* Replace tracheostomy.
- *As needed:* Endotracheal suctioning.

### **Removal of tube:**

1. Suction trachea
2. Cut tape and sutures
3. Deflate cuff
4. Remove tube

ο. Cover incision with sterile dressing

## Checklist for Cricothyroidotomy

1. Assembles correct equipment in the tray
2. Positions the patient accurately
3. Washes hands
4. Uses mask , gown and gloves
ο. Preps and drapes the site
6. Examins tracheostomy tube
7. Identifies anatomical landmarks
8. Injects local anesthesia ( not in highly emergency setting ) and gives time to work
9. Incises cricothyroid membrane
10. Inserts dilator a long knife blade then removes blade
11. Inserts tracheostomy tube
12. Removes the obturator
13. Replaces the inner cannula
14. Suctions trachea immediately
15. Inflates cuff with minimum pressure
16. Sutures or tapes wings of thracheostomy tube to skin
17. Cleans skin and places a dressing around the tube
18. Checks patient respiration and ascultates bilateral lung sounds
19. Follows through patient to prevent complication
20. Considers complications
21. Discards gloves