

Skill Station

Emergency Surgical Airway (Cricothyroidotomy)

Objective

- Demonstrate the proper technique and procedure for a surgical airway (cricothyroidotomy).

References

- *PHTLS: Prehospital Trauma Life Support*, 10th ed.
- *ATLS: Advanced Trauma Life Support Student Course Manual*, 10th ed., American College of Surgeons

Evaluation

- Verify the student's ability to perform an emergency surgical cricothyroidotomy on an airway trainer by observing the student's procedure and technique.

Equipment

- Surgical cricothyroidotomy simulator—1 per student
- Betadine/alcohol prep—1 per student
- #10 or #15 scalpel—1 per student
- Curved hemostats—1 per student
- Cric hook—1 per student
- 6.0 endotracheal (ET) tube—1 per student
- 10-cc syringe—1 per student
- Gauze pads (4 × 4) —1 set per student
- Gauze tape or circumferential tie—1 roll per student
- Ambu bag—1 per student

Instructor Guidelines

1. Ensure that each student has all required materials.
2. Read the objective and the evaluation statement to students.

Performance Steps

1. The student assembles and tests all the necessary equipment.
2. The student verbalizes that body substance isolation (BSI) precautions are considered.
3. The student assesses the upper airway for visible obstruction.
4. The student identifies the cricothyroid membrane between the thyroid and cricoid cartilages. Using a classmate, the student identifies to an instructor the location of the top of the thyroid cartilage, the thyroid prominence (on males), the bottom of the thyroid cartilage, the top of the cricoid cartilage, and the cricothyroid membrane.
5. The student identifies the site of the skin incision. Using a classmate, the student draws a dotted line midline from the bottom of the thyroid cartilage to the top of the cricoid cartilage that overlies and bisects the cricothyroid membrane to indicate where a skin incision is made during an actual cricothyroidotomy.
6. On a simulator, the student palpates the cricothyroid membrane and (while stabilizing the cartilage) makes a 2- to 3-cm vertical incision through the skin directly over the cricothyroid layer.
7. While continuing to stabilize the larynx, the student uses the scalpel or a hemostat to cut or poke through the cricothyroid membrane.
8. The student inserts the tips of the hemostat through the opening and opens the jaws to dilate the opening. A cric hook may also be used for this purpose.
9. The student inserts the ET tube between the jaws of the hemostat; the tube should be in the trachea and directed toward the lungs.
10. The student inflates the cuff with 10 mL of air.

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11. The student checks for air exchange and verifies placement of the tube by listening and feeling for air passing in and out of the tube, causing the tube to mist; looking for bilateral rise and fall of the chest; and confirming with waveform capnography.
12. If the position is correct, the student secures the tube with tape or a commercial tube-securing device.
13. The student applies a dressing to protect the tube and incision site further.
14. The student monitors the patient's respirations and ventilates, if required.

Critical Criteria

- The student obtained a patent airway with the emergency surgical airway.
- The student correctly identified the location of the cricothyroid membrane.
- The student performed the procedure in a manner that was safe to the patient.