

Skill Station

Basic Airway Skills

Objectives

- Demonstrate the manual technique of the trauma jaw thrust and trauma chin lift to open a trauma patient's airway while maintaining manual stabilization and neutral alignment of the patient's head and neck.
- Identify the indications and contraindications for the use of an oropharyngeal (OPA) airway.
- Demonstrate proper placement of an OPA with use of the tongue jaw lift insertion method.
- Demonstrate proper placement of an OPA with use of the tongue blade insertion method.
- Identify the indications for and contraindications to the use of a nasopharyngeal airway (NPA).
- Demonstrate an approved method of inserting an NPA.
- Demonstrate the one-practitioner technique to ventilate a trauma patient with use of a bag-mask device.
- Demonstrate the two-practitioner technique to ventilate a trauma patient with use of a bag-mask device.

Reference

- *PHTLS: Prehospital Trauma Life Support*, 10th ed.

Evaluation

- Verify the student's ability to perform a trauma jaw thrust, trauma chin lift, OPA insertion with use of both the tongue jaw lift insertion method and the tongue blade insertion method, NPA insertion, and bag-mask device ventilation (one and two practitioners).

Equipment

- Adult intubation manikin—1 manikin per every 3 to 4 students
- Bag-mask device with reservoir—1
- Manikin lubricant—1 per every 3 to 4 students
- Oxygen tank—1
- Oxygen connecting tubing—1

- Oropharyngeal airway—3 (in multiple sizes)
- Nasopharyngeal airway—3 (in multiple sizes)
- Personal protective equipment—1 set per student

Instructor Guidelines

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

Performance Steps

Trauma Jaw Thrust (Single-Practitioner Technique)

1. In both the trauma jaw thrust and the trauma chin lift, the student maintains manual neutral in-line stabilization of the head and neck while the mandible is moved anteriorly.
 - a. This maneuver moves the tongue forward, away from the hypopharynx, and holds the mouth slightly open.
2. From a position above the patient's head, the student positions their hands on either side of the patient's head, fingers pointing caudad.
3. Depending on the size of the student's hands, the student's fingers are spread across the face and around the angle of the patient's mandible.
4. The student applies gentle, equal pressure with these digits to move the patient's mandible anteriorly and slightly downward.

Trauma Chin Lift (Two-Practitioner Technique)

1. From a position above the patient's head, the patient's head and neck are moved into a neutral in-line position, and manual stabilization is maintained by the first student.
2. The second student is positioned at the patient's side between the patient's shoulders and hips, facing the patient's head.
3. With the hand closest to the patient's feet, the second student grasps the patient's teeth or the

lower mandible between the thumb and first two fingers beneath the patient's chin.

4. The second student pulls the patient's chin anteriorly and slightly caudad, elevating the mandible and opening the mouth.

Oropharyngeal Airway Insertion with Use of the Tongue Jaw Lift Insertion Method (Two-Practitioner Technique)

1. The first student brings the patient's head and neck into a neutral in-line position and maintains stabilization while opening the patient's airway with a trauma jaw thrust maneuver.
2. The second student selects and measures for a properly sized OPA. The distance from the corner of the patient's mouth to the earlobe is a good estimate for proper size.
3. The patient's airway is opened with the chin lift maneuver by the second student. The OPA is turned so that the distal tip is pointing to one side or the other (flanged end pointing toward patient's cheek).
4. The second student inserts the OPA into the patient's mouth and rotates it to fit the contours of the patient's anatomy.
5. The OPA is rotated by the second student until the inside curve is resting against the tongue, holding the tongue out of the posterior pharynx. The flanges of the OPA should be resting against the outside surface of the patient's teeth.

Oropharyngeal Airway Insertion with Use of the Tongue-Blade Insertion Method (Two-Practitioner Technique)

1. The first student brings the patient's head and neck into a neutral in-line position and maintains stabilization while opening the patient's airway with the trauma jaw thrust maneuver.
2. The second student selects and measures for a properly sized OPA.
3. The second student pulls the patient's mouth open by the chin and places a tongue blade into the patient's mouth to move the tongue forward in place and keep the airway open.
4. The second student inserts the device with the flanged end pointing toward the patient's feet and the distal tip pointing into the patient's mouth, following the curvature of the airway.
5. The OPA is advanced until the flanged end of the OPA rests against the outside surface of the patient's teeth.

Nasopharyngeal Airway Insertion (Two-Practitioner Technique)

1. The first student brings the patient's head and neck into a neutral in-line position and maintains stabilization while opening the patient's airway with the trauma jaw thrust maneuver.
2. The second student examines the patient's nostrils with a light and selects the one that is the larger and least deviated or obstructed (usually the right nostril).
3. The second student selects the appropriately sized NPA for the patient's nostril, a size slightly smaller in diameter than the size of the nostril opening (frequently the diameter of the patient's little finger).
 - a. The length of the NPA is also important. The NPA needs to be long enough to supply an air passage between the patient's tongue and the posterior pharynx. The distance from the patient's nose to the earlobe is a good estimate for proper size. (Note: The NPA must not be stretched out when measuring this distance.)
4. The second student liberally lubricates the distal tip (nonflanged end) and outside of the NPA with a water-soluble jelly.
5. The NPA is slowly inserted into the nostril of choice by the second student. Insertion should be in an anterior-to-posterior direction along the floor of the nasal cavity, not in a superior-to-inferior direction. If resistance is met at the posterior end of the nostril, a gentle back-and-forth rotation of the NPA between the fingers will usually aid in passing it beyond the turbinate bones of the nasal cavity without damage. If the NPA continues to meet with resistance, the NPA should not be forced past the obstruction, but rather withdrawn, and the distal tip should be relubricated and inserted into the other nostril.
6. The second student continues insertion until the flange end of the NPA is next to the anterior nares or until the patient gags. If the patient gags or coughs, the NPA is withdrawn slightly.

One-Practitioner Bag-Mask Device Technique

1. The student kneels above the patient's head, providing manual stabilization of the patient's head and neck in a neutral in-line position with the knees.
2. The student inserts an airway adjunct. Either an OPA or NPA may be used, depending on the patient's injuries.
3. The student fits a face mask over the patient's nose and mouth.

4. The student holds the face mask in place with firm downward pressure while keeping the patient's airway open. This can be accomplished by placing the third, fourth, and fifth fingers around the mandible and applying slight upward pressure. The thumb and first finger are wrapped around the face mask in the shape of a C near the attachment point where the bag and face mask meet.
5. The student squeezes the bag either by hand or by pressing the bag against their body. This action squeezes the air or oxygen from the bag into the patient's lungs.
6. The student observes the patient's chest to ensure adequate chest rise with each breath delivered.
7. The student observes ventilations to avoid overinflation and ensure that an appropriate ventilation rate is maintained.
8. The student ensures that the patient's oxygen saturation is being monitored throughout.

Two-Practitioner Bag-Mask Ventilation Technique

1. The first student kneels above the patient's head and maintains manual stabilization of the patient's head and neck in a neutral in-line position.
2. The second student inserts an airway adjunct. Either an OPA or NPA may be used, depending on the patient's injuries.
3. The second student places the face mask over the patient's nose and mouth.
4. The first student holds the mask in place with the thumbs on the lateral portion of the mask while pulling the mandible up into the mask. The other fingers provide the manual stabilization and maintain a patent airway.
5. The second student kneels at the side of the patient and squeezes the bag with both hands to inflate the lungs.
6. The students observe the patient's chest to ensure adequate chest rise with each breath delivered.
7. The students observe ventilations to avoid overinflation and ensure that an appropriate ventilation rate is maintained.
8. The students ensure that the patient's oxygen saturation is being monitored throughout.

Critical Criteria

- Students used the most appropriate bag-mask device.
- Students observed ventilations to avoid overinflation and ensured that an appropriate ventilation rate was maintained.
- Students ensured that oxygen saturation was monitored throughout care.