Knowledge Objectives

1. Describe how to ventilate a patient who has a tracheostomy tube. (p 2)
2. Describe how to ventilate a patient who has a stoma. (p 2)
3. Discuss the importance of prompt management of a dislodged tracheostomy tube. (pp 2, 4)
4. Describe the procedure for replacing a dislodged tracheostomy tube. (p 4)

Skills Objectives

1. Demonstrate how to ventilate a patient who has a tracheostomy tube. (pp 2, 3, Skill Drill 1)
2. Demonstrate how to ventilate a patient who has a stoma. (pp 2, 4, Skill Drill 2)
3. Demonstrate the procedure for replacing a dislodged tracheostomy tube. (pp 4-5, Skill Drill 3)
Introduction

As discussed in Chapter 10, Airway Management, a tracheostomy tube is a plastic tube placed within the tracheostomy site (Figure 1). It requires a 15-mm connector to be compatible with a ventilatory device, such as a mechanical ventilator or bag-mask device. A patient may receive supplemental oxygen using tubing designed to fit over the stoma or by placing an oxygen mask over the tube. Ventilation is accomplished by simply attaching the bag-mask to the tracheostomy tube.

Bag-mask ventilation may be needed for patients who have had a laryngectomy (surgical removal of the larynx). These patients have a permanent tracheal stoma. It may be seen as an opening at the center, at the front and base of the neck. Some patients may have other openings in the neck from unrelated surgical procedures. You should ignore any opening other than the midline tracheal stoma. The midline opening is the only one that can be used to deliver air into the patient’s lungs.

Neither the head tilt–chin lift nor the jaw-thrust maneuver is required for ventilating a patient with a stoma. If the patient has a tracheostomy tube, you should ventilate through the tube with a bag-mask device and 100% oxygen. If the patient has a stoma and no tube is in place, use an infant or child mask with the bag-mask device to make a seal over the stoma. Seal the patient’s mouth and nose with one hand to prevent a leak of air up the trachea when you ventilate through a stoma. Release the seal of the patient’s mouth and nose following each ventilation, allowing exhalation to occur through the upper airway.

If you are unable to ventilate a patient who has a stoma, try suctioning the stoma and the mouth with a French or soft-tip catheter before providing artificial ventilation through the mouth and nose. If you seal the stoma during mouth-to-mouth ventilation, the ability to ventilate the patient may be improved, and obstructions may clear.

Ventilation of Stoma Patients

Mouth-to-Stoma Ventilation (Using a Resuscitation Mask)

When ventilating via mouth-to-stoma, perform the following steps (Skill Drill 1):

1. Position the patient’s head in a neutral position with the shoulders slightly elevated (Step 1).
2. Locate and expose the stoma site (Step 2). Use of a pocket mask is preferential to protect the rescuer from blood and other body fluids.
3. Place the resuscitation mask (pediatric mask preferred) over the stoma, and ensure an adequate seal (Step 3).
4. Maintain the patient’s neutral head position, and ventilate the patient by exhaling directly into the resuscitation mask.
5. Assess the patient for adequate ventilation by observing his or her chest rise and feeling for air leaks around the mask (Step 4).
6. If air leakage is evident, seal the patient’s mouth and nose, and ventilate (Step 5).

Bag-Mask to Stoma Ventilation

To perform bag-mask to stoma ventilation, follow the steps in (Skill Drill 2):

1. With the patient’s head in a neutral position, locate and expose the stoma (Step 1).
2. Place the bag-mask device over the stoma, and ensure an adequate seal (Step 2).
3. Ventilate the patient by squeezing the bag-mask device, and assess for adequate ventilation by observing chest rise and feeling for air leaks when using a mask. Seal the mouth and nose if an air leak is evident from the upper airway (Step 3).
4. Auscultate over the lungs to confirm adequate ventilation.

Replacing a Tracheostomy Tube

You may also be called on to replace the tracheostomy tube in a patient if it becomes inadvertently dislodged. When the tracheostomy tube becomes dislodged, stenosis (narrowing) of the stoma occurs, which can significantly impair the patient’s ventilatory ability. Stenosis is potentially life threatening because soft-tissue swelling decreases the stoma diameter. In such cases, you may not be able to replace the tracheostomy tube itself and may have to insert an endotracheal tube into the stoma before it becomes totally occluded.

Regardless of whether the stoma requires suctioning or the tracheostomy tube needs to be reinserted, you must...
Mouth-to-Stoma Ventilation (Using a Resuscitation Mask)

**Step 1** Position the patient’s head in a neutral position with the shoulders slightly elevated.

**Step 2** Locate and expose the stoma site.

**Step 3** Place the resuscitation mask (pediatric mask preferred) over the stoma, and ensure an adequate seal.

**Step 4** Maintain the patient’s neutral head position, and ventilate the patient by exhaling directly into the resuscitation mask. Assess the patient for adequate ventilation by observing his or her chest rise.

**Step 5** If air leakage is evident, seal the patient’s mouth and nose and ventilate.
be prepared to take immediate action to minimize further compromise of oxygenation and ventilation. You must also consider the fact that the patient with the stoma has the device because of a significant medical problem (such as brain injury, chronic respiratory insufficiency), which means that the patient may be less tolerant of even brief periods of hypoxia. Steps for replacing a dislodged tracheostomy tube are listed here and shown in 

1. Take standard precautions (gloves and face mask).
2. Lubricate the same-sized tracheostomy tube or an endotracheal tube (at least 5.0 mm)
3. Instruct the patient to exhale, and gently insert the tube approximately 1 to 2 cm beyond the balloon cuff
4. Inflate the balloon cuff
5. Ensure that the patient is comfortable, and confirm patency and proper placement of the tube by listening for air movement from the tube and noting the patient’s clinical status. Ensure that a false lumen was not created
6. Auscultate the lungs to confirm tube placement.
Step 1: Take standard precautions (gloves and face mask). Lubricate the same-sized tracheostomy tube or an endotracheal tube (at least 5.0 mm).

Step 2: Instruct the patient to exhale, and gently insert the tube approximately 1 to 2 cm beyond the balloon cuff.

Step 3: Inflate the balloon cuff.

Step 4: Ensure that the patient is comfortable, and confirm patency and proper placement of the tube by listening for air movement from the tube and noting the patient’s clinical status. Ensure that a false lumen was not created. Auscultate the lungs to confirm tube placement.
A patient with a stoma may require ventilation through his or her tracheostomy tube.

Tracheostomy tubes require a 15-mm connector to be compatible with a ventilatory device. Ventilation is then accomplished by attaching the bag-mask to the tracheostomy tube.

Neither the head tilt—chin lift nor the jaw-thrust maneuver is required for ventilating a patient with a stoma.

If the patient has a stoma and no tube is in place, use an infant or child mask with the bag-mask device to make a seal over the stoma. Seal the patient’s mouth and nose with one hand to prevent a leak up the trachea when you ventilate. Release the seal after each ventilation.

A dislodged tracheostomy tube can significantly impair a patient’s ventilatory ability and is potentially life threatening.

You may have to insert an endotracheal tube into the stoma before it becomes totally occluded.

**Vital Vocabulary**

- **stenosis** Abnormal narrowing of a structure, such as a stoma.
- **stoma** A surgical opening in the body that connects an internal structure to the skin, such as a stoma in the neck that connects the trachea directly to the skin.
- **tracheostomy** Surgical creation of a hole in the trachea.
- **tracheostomy tube** A tube that goes through the hole created by a tracheostomy.

**Credits**

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