Module 22
TRACHEOSTOMY CARE AND SUCTIONING

Unit 1
Basic Information Related to Tracheostomy

OBJECTIVES

Upon completion of this unit, you should be able to:

- Define selected essential terms related to tracheostomy care and suctioning.
- Discuss the indications for tracheostomy and associated potential complications.
- Describe the parts of a tracheostomy set and their purposes.

COMMENTS

Indications for tracheostomy

A tracheostomy may be needed when an airway is partially or completely obstructed. If an airway is completely obstructed, breath sounds are absent and respiratory distress may progress to arrest. Artificial airways are used to reestablish or maintain a patent air passage of airflow to and from the lungs. Common types of artificial airways or intubations are endotracheal, nasopharyngeal, oropharyngeal and the tracheostomy. The focus of this module is the tracheostomy and related nursing care.

A tracheostomy is an artificial opening in the trachea. Tracheotomy is the surgical procedure that creates it. There are several indications for a tracheostomy, including:

- to relieve an obstruction by bypassing the obstructed airway caused by a tumor of the trachea or pharynx
- to facilitate suctioning of the lower airway due to inability to clear airway of secretions
- to provide an access for mechanical ventilation that will be required for more than 7-10 days
- to prevent aspiration of secretions, when normal swallowing is impossible due to a reduced state of consciousness or muscular paralysis
- to remove a foreign body

Surgical procedure

Local anesthetic is commonly used to perform a tracheostomy. Either a transverse or vertical incision is made by the surgeon and the deep tissues are divided in the midline to expose the trachea. To more completely expose the area, it is sometimes necessary for the surgeon to retract the thyroid isthmus. A vertical incision is made through the second
and third or the third and fourth tracheal rings to the trachea and a tracheostomy tube is carefully inserted to avoid rupturing the inflated cuff of the tube on any calcified tracheal cartilage. (See Figure 1.) Stay sutures are sometimes placed on both sides of the opening to stabilize and facilitate changing the tube during the early postoperative period. In an emergency situation, a tracheostomy is not recommended, but rather a cricothyroidotomy should be performed. (A cricothyroidotomy is a puncture of the cricothyroid membrane with a large polyethylene needle or scalpel to maintain an airway until more definitive treatment is possible.)

Figure 1

Complications that may occur from a tracheostomy include:

- fistula formation from the innominate artery to the trachea, which may result in erosion of the innominate artery and subsequent hemorrhage.
- Stenosis of the trachea (narrowing of the tracheostomy resulting from scar tissue at the site of the tracheostomy tube)
• Tracheoesophageal fistula (abnormal connection between trachea and esophagus as a result of pressure from an inflated cuff on a tracheostomy tube).

**The tracheostomy set**

A tracheostomy tube is a curved tube made of plastic, or metal that is inserted into a tracheostomy. Plastic tubes are commonly used because they are lightweight, they have interchangeable parts and are usually free of crust formation from the tissues. The tracheostomy tube, which comes in several different sizes, extends through the tracheostomy stoma into the trachea. The double-cannula tracheostomy set includes the following parts: the outer tube (**outer cannula**), the inner tube (**inner cannula**), and the **obturator**. (See Figure 2.) The obturator is used only during the insertion of the outer tube. Immediately following insertion and when the outer tube is in place, the obturator is removed since it occludes the tube’s lumen and prevents air exchange between the lungs and the atmosphere. The parts fit together as a unit and should not be interchanged with other tracheostomy sets. The outer cannula has a **neck plate** that fits flush with the neck and is secured with cloth tapes that are attached to holes in each side of the neck plate. It is essential that the tracheostomy tube be secured to prevent accidental extubation. The inner cannula is locked in place and acts as a removable liner for the more permanent outer cannula. The inner tube is taken out of place only during the period when it is cleaned. If it is left out longer, secretions will form into crusts and other debris will collect inside the lumen of the outer tube. A complete tracheostomy tube set of the correct type and size should always be kept at the bedside for emergency replacement. The type and size of tube should be documented on the nursing care plan in a conspicuous place.

**Cuffed tracheostomy tubes**

Plastic tracheostomy tubes, which are commonly used may be cuffed or uncuffed. Cuffed tubes are most often inserted in patients requiring mechanical ventilation. The inflated cuff seals the area between the outer cannula and tracheal wall. This prevents aspiration of pharyngeal or gastric contents into the lungs. The cuff also minimizes movement of the tube within the trachea, thus helping to prevent tracheal irritation which can lead to stenosis, erosion of the innominate artery, and tracheoesophageal fistula.
There are two methods of inflating a cuff. One method is to inflate the cuff to **minimal occluding volume** (MOV). During the inspiratory phase, air is injected into the cuff until there is just enough air to seal the trachea. This is determined by a prescribed tidal volume if the patient is on a ventilator or by auscultating the trachea with a stethoscope until a leak (harsh sound) cannot be heard. Another method for inflating the cuff is the **minimal-leak technique** (MLT). The nurse should follow the same steps as the MOV method, but the final step should include the withdrawal of the 50 to 100ml tidal volume decrease of air to allow a small leak.

Pressure exerted on the mucosa of the trachea is determined by the volume of air in the cuff. Since low cuff pressure is necessary to prevent tracheal mucosa damage, routine assessment of the tracheostomy tube cuff should be done using a cuff-monitoring device at end-inspiration. Cuff pressure should not be greater than 20 mm Hg or 25 cm H₂O since normal tracheal capillary perfusion pressure is 30 mm Hg. Too much air causes excessive pressure on the trachea and circulation to the tracheal mucosa is occluded.
Types of tracheostomy tubes and proper fitting

Tracheostomy tubes vary in composition and parts as well as in shapes and sizes. The size and type of tracheostomy tube should be determined before starting the procedure of tracheostomy care. The diameter of the tracheostomy tube should be sufficiently smaller than the trachea and should lie comfortable within the lumen of the trachea. Air should be able to pass between the wall of the trachea and the outer wall of the tube. Selecting the appropriate length and curve of the tracheostomy tube is important for proper fit. Tracheostomy tubes may be short or long and may be angulated from 50 – 80 degrees. The most commonly used tracheostomy tubes are short tubes with a 60-degree angle.

Some tracheostomy tubes have an outer cannula with a fenestration (opening) on one side. Air is allowed to move in and out of the airway with the fenestration and the cuff deflated. This is similar to normal respirations and allows the patient to speak. The purpose of this type of tracheostomy tube is to allow the patient to learn spontaneous breathing and to expel secretions prior to extubation (removal of tracheostomy tube).

A properly fitting tracheostomy tube should lie within the patient’s trachea so that the tube’s length prevents its dislodging into the areas around the trachea as the patient turns his head or coughs; the lower end should remain above the carina. The curve of the tracheostomy should be positioned in such a way that the inner opening of the tube is directly in line with the trachea and does not press against the walls of the trachea. Injury or obstruction may be the result of a tube tilting against the posterior wall. Erosion of the innominate artery may occur if it tilts against the anterior wall.

Tracheostomy suctioning

The trachea and tissues around the trachea are irritated following a tracheostomy resulting in excessive production of secretions. Removing the secretions to maintain a patient airway is necessary and is accomplished by suctioning. The frequency of suctioning is dependent on the condition of the patient and how recently the tracheostomy was done. Suctioning should be done only when necessary. Indications for suctioning include:

- visible secretions in the trach tube
- coarse or gurgling breath sounds
- sudden dyspnea
- crackles on auscultation (adventitious breath sounds)
- rise in peak-inspiratory pressure, if the patient is on a ventilator

Prior to suctioning, a baseline assessment should be established to evaluate any changes in mental, respiratory and cardiac parameters during and after suctioning. The chest should be auscultated and an assessment should be made of the patient’s mental and respiratory status including the rate and pattern of respirations and the cardiac rate and rhythm.
Selecting the appropriate suction catheter should be determined by a diameter of no more than half the diameter of the tracheostomy tube. (For example, if the patient has a #5 trach tube, a #10 suction catheter would be appropriate.) When large suction catheters are used, airflow around the catheter is decreased and there is not enough replacement of air during aspiration.

For the hospitalized patient, tracheostomy suctioning is a sterile procedure to avoid introduction of organisms directly into the lower airways. Since the patient’s WBC function and inflammatory response (normal patient defenses) may be depressed by disease, drugs, or malnutrition, it is essential to maintain sterile technique. Patients are usually taught to use clean technique for tracheostomy suctioning at home.

Since tracheal secretions may be tenacious, they are more easily suctioned if they are liquified by sterile normal saline lavage. The solution is injected directly into the trachea during inspiration, followed by suctioning. Agency policy on tracheal lavage should be consulted since this procedure may vary among agencies.

The suction catheter should be inserted into the tracheostomy about 4-5 inches but should not be forced further into the airway if the patient coughs or resistance is met before the catheter is fully inserted. The catheter should be withdrawn while rotating and intermittently occluding the side port (thumb port). The negative pressure created when the thumb port is occluded should not be applied continuously when no secretions are present. The tracheal mucosa could be pulled into the holes of the catheter, thus stripping the mucosa from the tracheal walls.

Suctioning periods should be limited to no more than 10-12 seconds and should be stopped if the patient exhibits pallor, cyanosis, dyspnea, restlessness, increase in heart rate of 40 beats/minute or decrease in heart rate of 20 beats/minute. These are signs of hypoxia, diminished oxygen supply to tissues. Hypoxia can result in life-threatening arrhythmias and even cardiac arrest. Vagal stimulation produced by suctioning could result in myocardial irritability, a slowing heart rate or blocking of impulses in the A-V node.

The suction catheter should be rinsed in normal saline after each insertion into the tracheostomy tube. However, if the oropharynx has been suctioned, the same catheter should not re-enter the trachea.
A. Match the terms on the left with the definition or description on the right:

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Artificial airway</td>
<td>A. insertion of a tube</td>
</tr>
<tr>
<td>2. cricothyroidotomy</td>
<td>B. surgical incision to create opening in trachea</td>
</tr>
<tr>
<td>3. extubation</td>
<td>C. artificial opening in trachea</td>
</tr>
<tr>
<td>4. fenestrated tube</td>
<td>D. emergency relief for airway obstruction</td>
</tr>
<tr>
<td>5. inner cannula</td>
<td>E. one of its parts is a neck plate</td>
</tr>
<tr>
<td>6. MOV</td>
<td>F. used only during insertion of outer tube</td>
</tr>
<tr>
<td>7. MLT</td>
<td>G. has holes for securing twill tape</td>
</tr>
<tr>
<td>8. neck plate</td>
<td>H. an outer cannula with an opening</td>
</tr>
<tr>
<td>9. obturator</td>
<td>I. removal of a tube</td>
</tr>
<tr>
<td>10. outer cannula</td>
<td>J. acts as a removable liner</td>
</tr>
<tr>
<td>11. tracheostomy</td>
<td>K. air injected into tracheostomy tube cuff; amount (L.</td>
</tr>
<tr>
<td>12. tracheotomy</td>
<td>determined when leak cannot be heard with a stethoscope</td>
</tr>
<tr>
<td></td>
<td>over trachea; final step is withdrawing 0.1 ml of air</td>
</tr>
<tr>
<td></td>
<td>to create a small leak)</td>
</tr>
</tbody>
</table>

B. Check your understanding of suctioning. Fill in the blanks with a word or a phrase.

1. The removal of secretions using negative pressure is called suctioning. Another term used for this procedure is ________________________________.

2. ________________________________ are abnormal breath sounds and are an indication for ________________________.

3. To create suction, the ________________________________ of the catheter is occluded which creates a __________________ ______________________.

4. Prior to suctioning, a ________________________________ should be established to evaluate any changes in mental, respiratory and cardiac status.

5. The appropriate size of suction catheter is determined by ____________________________________________________________________________.

6. Suctioning a tracheostomy is a sterile procedure because ____________________________________________________________________________.
7. Suction periods should be limited to no more than _____________________
____________________________.

8. During suctioning, patients may rapidly develop a diminished availability of oxygen to the tissues, known as ________________________________.

9. ________________________________ may be injected into the trachea to liquify secretions prior to suctioning.

10. Three signs of hypoxia are:
_______________________________________________________
_______________________________________________________
_______________________________________________________
NURSING DIAGNOSIS

Three responses that are commonly manifested by patients with tracheostomy tubes are:

- ineffective airway clearance
- potential for infection
- impaired verbal communication

This unit will include a discussion of common patient responses to a tracheostomy tube and inferences derived from the information. The inference will be stated as a nursing diagnosis and will include an appropriate plan of care. Remember that identification of nursing diagnoses and development of a nursing care plan is the responsibility of the RN.

Ineffective airway clearance

A person with a tracheostomy has limited ability to cough and deep breath, thus, he/she has a compromised ability to maintain a clear airway. Auscultation of lungs indicates a need for airway clearance.

Goal: To promote patient airway and mobilize airway secretions.

Expected outcome: The patient will maintain clear, open airways as evidenced by:

a. breath sounds are bilaterally equal and clear to auscultation.
b. rate and depth of respirations are WNL.
c. absence of dyspnea.
d. absence of cyanosis.

Intervention:

a. Assess and document respiratory status frequently.
b. Change the patient’s position frequently.
c. Provide humidification and hydration to liquify secretions.
d. Suction as necessary.

Potential for the infection

The protective mechanisms of the upper airway in trachea have been bypassed and the surgical incision creates potential conditions for infection.

Goal: To promote a satisfactory means of communication.
Expected outcome: The patient will utilize an alternative means of communication.

Intervention:
   a. Have emergency signal within reach at all times.
   b. Provide a paper and pencil or magic slate for communication.
   c. Talk to the patient often to explain procedures and to maintain interaction with him/her.

TECHNIQUES OF TRACHEOSTOMY CARE

This section will include the use of the nursing process to identify the steps for performing two aspects of tracheostomy care: 1) suctioning and 2) cannula and site care.

Suctioning a tracheostomy tube

Assessment: Prior to performing tracheal suctioning, the nurse should assess the patient for signs and symptoms of lower airway obstruction and/or hypoxia.
   • secretions in airway (may be audible with or without stethoscope).
   • wheezes or crackles on inspiration and/or expiration.
   • diminished breath sounds.
   • increased respiratory rate (tachypnea).
   • shallow respirations.
   • labored respirations.
   • increased or decreased heart rate (tachycardia or bradycardia).
   • increased or decreased blood pressure (hypertension or hypotension).
   • cyanosis or pallor.
   • restlessness or anxiety.
   • decreased level of consciousness.

Planning: The nurse should wash his/her hands then gather the following equipment:

1. Suction equipment (bedside wall suction or portable unit) including a collection receptacle and tubing. Suction should not exceed 120 mm Hg.

2. Sterile suction catheter (diameter should be half of the inside diameter of the tracheostomy tube). Some catheters have a thumb port for suction control.

3. A Y-connector to join the catheter to the suction tubing if catheter does not have a thumb port. If catheter has a thumb port, a straight connector is used.

4. A container with sterile normal saline to lubricate and flush the catheter.

5. A sterile 2-10 ml syringe and sterile normal saline for tracheal lavage (if this is an agency policy).

7. A moisture-resistant bag for discarding the disposable catheter and gloves.

8. An oxygen source and flow meter.


10. Goggles (or glasses) and mask.

11. Gown (if necessary).

Intervention: Suctioning a tracheostomy tube creates the risk of such complications as hypoxia and dysrhythmias. It also poses some risk for the nurse due to the possible contact with secretions. By following these steps in suctioning, the risks to both patient and nurse can be reduced.

1. Explain the procedure to the patient. Inform him/her that suctioning usually causes coughing which assists in removing the secretions.

2. Position the patient in semi-Fowler’s position, if not contraindicated. An unconscious patient should be placed in a supine position.

   Rationale: Semi-Fowler’s position promotes deep breathing, maximum lung expansion and productive coughing. Increased oxygenation counteracts the hypoxic effects of suctioning and may cause coughing to loosen and move more secretions.

3. Attach the ambu bag to the oxygen source.

4. Open the sterile supplies.

5. Pour sterile saline into cup or basin.

6. Put on goggles (or glasses) and mask and gown if necessary.

7. Turn on suction and check the suction pressure. Adjust pressure according to agency policy.

8. Put on the sterile gloves; keep the dominant hand sterile and the non-dominant hand clean.

9. Attach catheter to Y-connector or straight connector, using catheter in dominant hand and connector in clean hand.

10. With the sterile hand, place catheter tip in sterile saline solution, occlude thumb control using thumb of clean hand and suction a small amount of sterile solution through catheter.
Rationale: Ensures proper function of suction equipment. Lubrication on the outside and lumen of catheter facilitates ease of insertion, thus reducing tissue trauma.

11. If patient secretions are scant, hyperventilate lungs with an ambu bag before suctioning:
   
   a. Turn on oxygen source to 12-15 L/min. (100% oxygen), using non-dominant hand.
   b. Attach tracheostomy adapter of resuscitator to tracheostomy.
   c. Compress ambu bag while patient inhales for five breaths. It is advantageous to have an assistant for this step.
   d. Assess the adequacy of ventilation by observing the rise and fall of patient’s chest.

12. Remove oxygen device.

13. Quickly but gently insert catheter into trachea through tracheostomy tube with non-dominant thumb off suction port. Insert catheter about 6-8 inches or until resistance is felt. This usually means the catheter tip has reached the bifurcation of the trach. To avoid damage to this area, withdraw the catheter 1-2 cm before applying suction.

   Rationale: Suction is not applied during insertion of catheter to prevent tissue trauma.

14. Rotate catheter between thumb and forefinger while slowly withdrawing it in one smooth, continuous motion. With non-dominant thumb over suction port, apply suction intermittently to avoid damage to the tracheal mucosa. However, if the patient has copious secretions, continuous suction may be appropriate. The catheter should be in the trachea no more than 10-12 seconds.

15. Withdraw catheter completely and release suction. (Allow 2-3 minutes between suctions when possible).

16. If secretions are thick, flush catheter in sterile solution. Insert 3-5 ml of sterile saline solution into trachea. Suction again.

17. Reapply patient’s source of supplementary oxygen, if necessary. Observe patient’s respirations and skin color, then encourage him/her to rest for a few minutes.

18. Encourage the patient to deep breathe and cough. Repeat steps 10-14 until air passage is clear and patient’s breathing is effortless.
Rationale: The patient’s oxygen supply can decrease with prolonged suctioning.

19. Hyperoxygenate the patient’s lungs for a few minutes after each suction attempt and after completing the suctioning procedure.

   Rationale: Hyperoxygenation relieves hypoxia induced by suctioning and may reverse any airway collapse.

20. Flush suction tubing with saline or water to remove tenacious secretions from its inner lumen.

21. Turn off the suction supply and disconnect the catheter from the suction tubing.

22. With the catheter in your gloved hand, grasp the cuff of the glove turning the glove inside out over the catheter to contain secretions.

23. Discard glove and catheter in moisture resistant bag.

24. Provide oral care.

25. Assess the secretions suctioned for amount, color, odor, and thickness.

26. Maintain the patient in semi-Fowler’s position to facilitate breathing. If the patient is unconscious, position him/her in a Sim’s position to promote drainage of secretions from the mouth.

27. Replenish supplies and sterile fluid.

28. Document the technique on the patient’s chart, including amount and description of suction returns, amount of sterile saline instilled and patient’s response.

Evaluation: The expected outcome of tracheal suctioning includes:

   1. Absence of clinical signs of accumulated secretions.
   2. Patient’s normal respiratory status.
   3. Absence of adventitious breath sounds when auscultated.
   4. Normal pulse rate.

**Cleaning and dressing a tracheostomy**

*Cannula and Site Care:* Thorough cleansing of the stoma site using strict aseptic technique should be done at least every eight hours.
Assessment: The nurse should assess:

- the tracheostomy tube and stoma for the presence of secretions.
- Clinical signs of infection at the tracheostomy site. Also, the nurse should perform assessments as outlined in the technique for “Suctioning a Tracheostomy Tube.”

Planning: The nurse should wash his/her hands then assemble the necessary supplies. Prepackaged trach care kits are available which include:

1. Three sterile basins for cleaning solutions.
2. Sterile nylon brush or pipe cleaners to clean the lumen of the inner cannula.
3. Sterile gauze squares and sterile cotton-tipped applicator sticks to clean flange of outer cannula.
4. Sterile gloves.
6. Sterile 4x4 gauze tracheostomy dressing.
7. Cotton twill tapes for ties.

Hydrogen peroxide and sterile saline solution are also needed.

Intervention: Cleaning a double-cannula tracheostomy tube is outlined in the following procedure.

1. Explain the procedure to the patient.
2. Assist the patient to semi-Fowler’s position for his/her comfort and the nurse’s ease in working.
3. Open trach kit. Prepare basins with cleansing solutions. (Refer to agency policy about the proportions of solution used.) Usually, fill one basin with hydrogen peroxide, one with normal saline, one with ½ strength hydrogen peroxide.
4. Put on sterile gloves.
5. Suction inner cannula, as outlined in technique for “Suctioning a Tracheostomy Tube.”

Rationale: The removal of secretions ensures a patent airway.
6. With non-dominant hand wearing a clean glove, remove and discard the patient’s tracheostomy dressing.
7. Unlock inner cannula (turn lock 90 degrees counterclockwise) using non-dominant hand.

8. Using the non-dominant hand remove the inner cannula by gently pulling it outward in line with its curvature.

9. Place inner cannula in hydrogen peroxide solution to soak for several minutes.
   Rationale: Hydrogen peroxide moistens and removes dried secretions.

10. Remove the glove on the non-dominant hand and put on sterile gloves.
    Rationale: Both hands must be gloved to maintain sterile technique, since both hands are need to clean the tube.

11. Remove cannula from soaking solution. Using the brush or pipe cleaners, clean lumen and entire inner cannula thoroughly.

12. Place cannula in sterile saline and agitate for several seconds.
    Rationale: The agitation rinses the cannula thoroughly and lubricates it for insertion.

13. Inspect the cannula for cleanliness.

14. After rinsing cannula, tap against inside edge of sterile solution basin.
    Rationale: This removes excess liquid from cannula thus preventing possible aspiration.

15. Using two or three pipe cleaners twisted together, dry inside of cannula but do not dry outer surface.

    Rationale: Removal of secretions prevents adherence of two tubes when inner cannula is inserted.

17. Clean flange of outer cannula if necessary using cotton-tipped applicators or gauze square moistened with sterile saline.

18. Grasp inner cannula by outer flange and insert in the direction of its curvature.

19. Turn lock clockwise about 90 degrees to upright position to lock inner cannula in place.
20. Check security of positioning by gently pulling on inner cannula.

21. Using gauze squares or applicator sticks dampened with ½ strength hydrogen peroxide, clean around incision site.

22. Moisten sterile applicators in normal saline and rinse the cleansed areas.

23. Clean the flange of the tube using the same procedure as in step 21.

24. Using the dry gauze squares, dry the area completely.

25. If antibiotic ointment is ordered, apply ointment around incision site with an applicator.

26. Apply a dressing around the insertion site using a tracheostomy dressing (split dressing) of non-raveling material. If split dressing is not available, open and refold a 4x4 gauze as indication in Figure 3, A-D. If there is a copious amount of drainage, place the dressing as indicated in Figure 3, E. Insert the dressing from about if the drainage is not heavy. Do not cut 4x4 square or use cotton-filled gauze squares.

   Rationale: If the patient aspirates the cotton lint or frayed fibers, a tracheal abscess could be created.

27. Check that the tracheostomy tube is securely supported when dressing is applied.

28. Change the tie tapes. Two people are always needed to change the tracheostomy ties safely. One person can hold the tracheostomy tube in place while the other person changes the ties. Sometimes patients are able to assist with this part of the procedure. The traditional method of applying twill tapes is cutting two lengths of twill tape, securing the ends into the neck plate holes, and tying a knot at the side of the patient’s neck. The method outlined below eliminates the need to cut the twill tape.

   a. Cut a length of twill tape long enough to encircle the neck plus eight additional inches.
   
   b. Thread one end about four-six inches through the securing hole of the tracheostomy neck plate.
   
   c. Take the long end around the back of the neck and thread it through the other securing hole.
   
   d. Taking the long end, double it back around the back of the neck. See Figure 4, A.
Rationale: This method eliminates the need to cut the twill tape, thus avoiding the risk of fraying ends falling into the tracheostomy stoma.

e. Tie the two ends together in a square knot at the side of the patient’s neck. Avoid tying the knot over the carotid artery or spine. The ties should be secured so that one finger can comfortably slide between the neck and the ties.

Rationale: Square knots will not slip and loosen or allow the tube to dislodge. See Figure 4, B. Check the tracheostomy tie frequently for tautness, especially for patients who are restless or for patients who experience neck swelling (e.g., radical neck surgery, neck trauma, or cardiac failure).

29. Record the removal, cleaning and reinsertion of the cannula and the dressing change.

Evaluation: Expected outcomes are:

- Absence of secretions on cannulas and tracheostomy tube.
- Absence of secretions from the tracheostomy site.
- Absence of clinical signs of infection.
Figure 3
Preparing a Tracheostomy Dressing
Figure 4
Changing Tracheostomy Ties
SUMMARY

Anxiety is a common problem for patients with a tracheostomy and is related to the threat of their airway being obstructed and their fear of not being able to breathe. Suctioning and tracheostomy cleansing temporarily occlude the patient’s airway, but are essential procedures in the prevention of complications. Therefore, it is vitally important that the nurse be aware of the threatened feelings the patient experiences about the need in life—air. A calm, efficient, and sensitive nurse may greatly alleviate the patient’s fears and promote a sense of well-being.

BIBLIOGRAPHY


Check your understanding of the nursing management of a patient with a tracheostomy. Fill in the blanks below.

1. A nursing intervention which involves any care of the tracheostomy and which is effective in preventing infection is ________________________________.

2. Five assessments that should be done before suctioning a tracheostomy tube include:
   a. ______________________________________________________________
   b. ______________________________________________________________
   c. ______________________________________________________________
   d. ______________________________________________________________
   e. ______________________________________________________________

3. To promote maximum lung expansion, deep breathing and coughing, the nurse should position the patient in ___________________________ before suctioning.

4. A patient with copious secretions should not be hyperventilated with an Ambu Bag because ___________________________.

5. Assessments a nurse should complete before cleaning a tracheostomy (in addition to the assessments discussed for suctioning), include:
   a. ______________________________________________________________
   b. ______________________________________________________________

6. Soaking the inner cannula in a hydrogen peroxide solution is for the purpose of ________________________________.

7. The purpose of rinsing the inner cannula in sterile saline is to ___________________________ and ___________________________.

8. If a commercial split tracheostomy dressing is not available, what should you know about using other types of dressings?
   ________________________________________________________________

9. How often should the tie tapes be changed?
Module 22
Answers to Self-Tests

Unit 1
A. 1. a
2. d
3. i
4. h
5. j
6. k
7. l
8. g
9. f
10. e
11. c
12. b

B. 1. aspiration
2. adventitious sounds, suctioning
3. side port, negative pressure
4. baseline assessment
5. a diameter no more than half the diameter of the trach tube
6. want to avoid introducing organisms directly into the lower airways.
7. 10 seconds
8. hypoxia
9. sterile normal saline
10. pallor, cyanosis, increased heart rate by 40 beats/minute, decrease in heart rate by 20 beats/minute, cardiac arrhythmia, or cardiac arrest.

Unit 2
1. using aseptic technique
2. a. clinical signs of secretion accumulation
   b. character of respirations
   c. breath sounds
   d. signs of hypoxia or anoxia
   e. pallor and cyanosis
3. semi-Fowler’s
4. the force of the ambu bag could force secretions deeper into the respiratory tract
5. a. secretions in trach tube and stoma
   b. signs of infection at trach site
6. moistening and removing dried secretions
7. remove hydrogen peroxide, lubricate the cannula
8. Do not cut 4x4 gauze or cotton-filled gauze squares since they may fray and the patient could aspirate the lint or fibers.
9. Whenever soiled or when the cannula is cleaned.