LEARNING MODULE
FOR
NEPHROSTOMY TUBE, INTERMITTENT IRRIGATION OF
SHARED COMPETENCY
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PURPOSE:
The RN will demonstrate competency in the skill required to perform an intermittent irrigation of a nephrostomy tube.

LEARNING OBJECTIVES

Following completion of the learning module, the Registered Nurse will be able to:

1. Identify the most common problems associated with nephrostomy tube drainage.
2. List three signs that may indicate a nephrostomy tube is obstructed.
3. Discuss three causes of nephrostomy tube obstruction.
4. Discuss nursing interventions which prevent or correct an obstructed nephrostomy tube.
5. Identify three principles to follow when performing intermittent nephrostomy tube irrigation.

METHOD

1. Independent study
2. Discussion
3. Observation
4. Demonstration-return documentation

The Registered Nurse will:

1. Review the learning module for intermittent irrigation of nephrostomy tube.
2. Review the nursing policy and procedure for intermittent irrigation of nephrostomy tube.
3. Complete the test
4. Observe a R.N. certified in intermittent irrigation of a nephrostomy tube perform the skill
5. Successfully demonstrate the skill of intermittent irrigation of a nephrostomy tube to the evaluator using the Proficiency Standard Skills Checklist.

THEORY:

A nephrostomy tube is a catheter inserted into the kidney. Insertion is usually done by a radiologist in Ultrasound under local anaesthetic, but may also be done in the Operating room by a Urologist under local or general anaesthetic.

A nephrostomy tube is usually inserted when there is a blockage in the ureter. The blockage is usually caused by tumor, stone(s) or edema. The blockage causes the backup of urine into the kidney causing hydronephrosis and possibly renal failure. Inserting the nephrostomy tube relieves the obstruction by allowing the drainage or urine directly from the kidney.
Nephrostomy tubes are usually a temporary measure and may be left in place for a few days to a couple of months. Occasionally, as in patients with end stage prostate cancer, nephrostomy tubes will remain indefinitely as the obstructing tumor cannot be treated. In these cases, the tubes are usually changed every two months.

Occasionally, nephrostomy tubes will become blocked. The blockage may be related to:

1. Blood clots (s) due to trauma of nephrostomy tube insertion.
2. Pieces of mucous, tissue, stones, or thick purulent urine blocking the tube.
3. A kink in the nephrostomy tube itself.
4. The tip of the nephrostomy tube lying against the wall of the kidney.
5. Blockage related to #1 and #2 would necessitate irrigation of the nephrostomy tube.

Nephrostomy Tube Obstruction

The most common problem associated with a nephrostomy tube is obstruction. Signs and symptoms of obstruction include:

1. Decreased urinary output from the tube.
2. Complaints of flank tenderness or pain.
3. Leakage around the nephrostomy tube insertion site.

Nephrostomy tube obstruction may be caused by:

1. Kinks in the nephrostomy tube or drainage tubing;
2. Accumulation of clots or sediment in the nephrostomy tube.

Nursing Interventions

Adhere to the following sequence of interventions when attempting to clear an obstructed nephrostomy tube.

1. Ensure the nephrostomy tube and drainage tubing is free from kinks. This may make it necessary for you to remove the dressing and observe.
2. If the drainage of urine does not improve, attempt to irrigate the nephrostomy tube to restore patency. Irrigation is a last resort.
3.

Principles of Nephrostomy Tube Irrigation

1. Adhere to strict aseptic technique as renal tissue is susceptible to injury and infection.
2. Attempt, **ONLY ONCE** to dislodge a clot or sediment via nephrostomy tube irrigation. If the nephrostomy tube remains obstructed, notify the Physician. Irrigate a blocked nephrostomy tube as follows:

3.1. Slowly instill 5 to 10 mL of normal saline gently into the nephrostomy tube to attempt to dislodge the clot/sediment. Use only a 10mL syringe. **Do not use pressure.** Gently instillation avoids injury to the kidney. Encourage the patient to relax by performing deep breathing exercises.

3.2. Remove syringe and allow return flow (irrigating solution) to drain via gravity. If drainage does not flow, assist the patient to change positions. Changing positions may change the position of the tip of the nephrostomy tube and result in urine drainage.

3.3. If urine does not drain, attempt to **gently** aspirate the fluid. Gently aspiration is necessary to avoid damaging the kidney tissue.

3.4. If aspiration is successful, repeat the steps until the return flow is clear and drains freely via gravity:

**OR**

3.5. If aspiration is not successful (i.e. catheter remains obstructed) notify the physician.

**PROFICIENCY STANDARDS:**

To be certified as competent to perform the procedure, the RN will successfully:

1. Complete the learning objectives.
2. Complete a written test.
3. Perform all aspects of the Proficiency Standards Skills Checklist.

**References:**


Multiple Choice Self Test

1. The most common problem encountered with nephrostomy tube drainage is:
   (1) Infection
   (2) Hemorrhage
   (3) Obstruction
   (4) Patient Discomfort

2. Indications of nephrostomy tube obstruction include:
   (a) Decreased urinary output
   (b) Cloudy, foul smelling urine
   (c) Feeling of flank tenderness or pain
   (d) Leakage of Urine around nephrostomy tube insertion site

   (1) a, b and c
   (2) b, c and d
   (3) a, b and d
   (4) ac c and d

3. Causes of nephrostomy tube obstruction include:
   a) Kinking of the nephrostomy tube or tubing
   b) Obstruction of a ureter by a tumor
   c) Obstruction of the nephrostomy tube by sediment
   d) Obstruction of the nephrostomy tube by blood clots

   (1) a, b and c
   (2) a, b and d
   (3) b, c and d
   (4) a, c and d

4. When irrigating a nephrostomy tube, the Registered Nurse should:
   a) Gently aspirate fluid after instillation
   b) Slowly/gently instill 5 to 10 mLs of Normal Saline
   c) Use strict aseptic technique when handling the nephrostomy tube
   d) Gently aspirate only if return flow does not drain via gravity

   (1) a, b and c
   (2) b, c and d
   (3) a, b and d
   (4) a, c and d

5. The renal pelvis of the kidney has the capacity to hold
   (1) 5 to 10 mL of fluid
   (2) 10 to 15 mL of fluid
   (3) 30 to 50 mL of fluid
### Nephrostomy Tube, Intermittent Irrigation Competency Skills Checklist

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<tr>
<th>SKILL</th>
<th>YES</th>
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<tr>
<td>1. Checks the Physician’s order.</td>
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<td>2. Assembles the equipment.</td>
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<td>3. Identifies the patient’s identification armband.</td>
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<td>4. Washes hands.</td>
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<td>5. Explains the purpose of the procedure and expected sensation to the patient.</td>
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<td>6. Gloves and disconnects the drainage tubing form the nephrostomy tube and places the end of the nephrostomy tube in the collection basin while maintaining a sterile system.</td>
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<td>7. Adheres to strict aseptic technique and attempts to irrigate the nephrostomy tube as follows:</td>
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<td>7.1 Fills 10 mL syringe with 5 to 10 mL of normal saline or uses a pre-filled syringe.</td>
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<td>7.2 Inserts the tip of the syringe into the nephrostomy tube and slowly injects the normal saline.</td>
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<td>7.3 Removes the syringe and positions the nephrostomy tube so the return flow drains via gravity.</td>
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<td>8. If the solution does not drain via gravity, proceed as follows:</td>
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<td>8.1 Changes the patient’s position and/or position of drainage tubing to facilitate return flow to drain via gravity.</td>
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<td>8.2 Attaches an empty syringe and attempts to slowly and gently aspirate (without forcing) the irrigation solution.</td>
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<tr>
<td>8.3 If aspiration <strong>is</strong> successful, repeat the steps until return flow is clear and drains freely via gravity.</td>
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<tr>
<td>8.4 If aspiration is not successful, notify the Physician.</td>
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<td>9. Re-establishes closed drainage system.</td>
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<td>10. Documents in the patient’s record.</td>
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Evaluator: ___________________________  Date: ____________