



<p>Team Name: Regional Palliative Care Team</p> <p>Team Lead: Regional Director – Seniors, Palliative Care & Cancer Care</p> <p>Approved by: Executive Director – East</p>	<p>Reference Number: CLI.5910.PL.009</p> <p>Program Area: Palliative Care</p> <p>Policy Section: General</p>
<p>Issue Date: September 27, 2019</p> <p>Review Date:</p> <p>Revision Date:</p>	<p>Subject: Thoracentesis Catheter: Intermittent Drainage of Pleural Fluid and Care Of (Long Term)</p>

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POLICY SUBJECT:

Thoracentesis Catheter: Intermittent Drainage of Pleural Fluid and Care Of (Long Term)

PURPOSE:

To provide a standard approach for the intermittent drainage and care of thoracentesis catheters for patients requiring symptom management from the continuous accumulation of pleuritic fluid.

A thoracentesis catheter is a clinical option for management of shortness of breath due to fluid accumulation in the pleural space. It is a clinically proven option for patients to palliate their symptoms from pleural effusions by intermittently draining fluid buildup which can relieve discomfort and pain without repeatedly visiting a physician.

BOARD POLICY REFERENCE:

Executive Limitation (EL-02) Treatment of Clients

POLICY:

- Aseptic no-touch technique must be used when accessing a thoracentesis catheter.
- The physician must order the amount of fluid to be removed and how often the fluid is to be drained from the pleural space. Generally limiting the maximum amount drained to 2000 millilitres per drainage is recommended.

- The first drainage (regardless of location i.e. hospital, personal care home or community) requires supervision and education about the procedure by a nurse.
- Equipment and supplies for the following emergencies must be readily available at all times (these must be provided in the home as well):
 - Accidental removal of the catheter:
 - Sterile paraffin gauze
 - 4 x 4 gauze
 - Tape
 - Non-sterile gloves
 - Damaged catheter (crack or leak):
 - Tubing clamp forceps
 - Non-sterile gloves

IMPORTANT POINTS TO CONSIDER

- In most cases the management of the intermittent drainage is completed by the caregiver/family support system in the home.

EQUIPMENT:

- 1 sterile valve cap
- 2 to 4 alcohol wipes
- 2 – 2% chlorhexidine swab sticks
- 3 pairs of non-sterile gloves
- 4 – 4x4 gauze sponges
- 2 drain sponges
- 1 to 2 15x20 cm transparent film dressings or fabric adhesive dressing
- 1 dressing tray (optional)
- Vacuum drainage bottle (same as manufacturer of the catheter)
- Personal protective equipment (eye protection, apron, non-sterile gloves)

PROCEDURE:

PART A: INITIATING DRAINAGE

PART B: DISCONTINUING DRAINAGE

PART C: DRESSING CHANGE

PART D: DAMAGED OR ACCIDENTAL REMOVAL OF A CATHETER

GENERAL PREPARATION:

1. A nurse monitors (in facility), or teaches family members/caregivers (at home) to monitor for:
 - Migration of the catheter;
 - A blocked or plugged catheter;
 - Accidental removal of the catheter; or

- Leakage from the catheter or catheter exit site.
2. Perform hand hygiene before direct patient contact and subsequently as clinically indicated.
 3. If a nurse is performing the procedure, until a stable drainage pattern has been established, obtain baseline vital signs, including heart rate, respiratory rate, oxygen saturation (if monitor is available) and blood pressure. Family members/caregivers are not expected to perform this step at home.
 4. Open the vacuum bottle packaging.
 5. Inspect the vacuum bottle to ensure that there is a vacuum seal. Follow manufacturer's guidelines for different vacuum bottle types.
 6. Completely close the roller clamp on the drainage line attached to the vacuum bottle.
 7. If there is a slide clamp on the tubing, make sure the slide clamp is pinched closed.
 8. Apply non-sterile gloves.
 9. Remove outer dressing to catheter exit site. Assess site for evidence of:
 - Pain and tenderness
 - Inflammation or redness
 - Edema
 - Induration
 - Leaking of fluid
 - Exudate
 10. Notify physician or delegate if any of the above signs are present before proceeding with drainage.
 11. Remove soiled gloves and apply a new pair of non-sterile gloves.

PART A: INITIATING DRAINAGE

1. Tear open 3 alcohol swabs, leave in package and set aside within reach.
2. Hold the base of the catheter valve and remove the cap by twisting it counterclockwise and gently pulling. Discard used cap.
 - Most catheters use a one-way valve which ensures that air does not enter the pleural space or fluid does not drain. If a hissing noise is heard or fluid drains after the cap is removed, replace the cap immediately as the one-way valve has been compromised. Notify the physician or delegate as the one-way valve will need to be changed.
3. Clean around the valve opening with an alcohol wipe for 30 seconds being careful not to touch the valve opening with your gloved hand. Discard the wipe.

Note: Do not attempt to clean the inside of the valve.
4. Remove the cover from the access tip of the drain line ensuring that the valve opening and the access tip remains sterile. Align the center of the catheter valve with the luer connection on the drain line set, push in and turn clockwise to securely tighten.
5. If there is a slide clamp, release the slide clamp on the top of the bottle by pushing it forward until it no longer pinches the tube closed.
6. Begin drainage by opening the roller clamp on the drainage line.
7. Stay with the patient during the removal of pleural fluid. This applies to nurses in facility or family members/caregivers at home.

8. If a nurse is performing the procedure, the nurse assesses vital signs every 15 – 30 minutes while draining and post drainage. The nurse assesses for:
 - Respiratory compromise (including sudden shortness of breath, anxiety, cough, tracheal midline shift, and decrease in oxygen saturation [if a monitor is available]);
 - Hemodynamic instability (including hypotension, tachycardia and hypoxemia); and
 - Pain during evacuation of fluid.
9. At home, family members/caregivers are taught to monitor for shortness of breath, discomfort and pain during evacuation of fluid.
10. If the patient coughs or experiences shortness of breath, discomfort or pain while the fluid is draining, close the roller clamp and wait a few minutes until the symptoms resolve. Begin draining the fluid more slowly by partially opening the roller clamp.
11. If the patient's symptoms persist or there is a significant change in vital signs, pain level and/or the patient is not able to tolerate the draining of fluid, close the roller clamp completely and notify the physician or the delegate.
12. Remove gloves and discard.

PART B: DISCONTINUING DRAINAGE

Drainage is discontinued when fluid ceases to drain, when the maximum amount of drainage has been reached or if the patient is unable to tolerate further draining of the pleural fluid.

1. Perform hand hygiene before direct patient contact and subsequently as clinically indicated.
2. Open the valve cap packaging while maintaining sterility of the cap and open package. You may maintain sterility by placing the valve cap on the opened packaging or open it onto a sterile dressing tray if preferred.
3. Pinch close the slide clamp on the top of the bottle if there is one.
4. Completely close the roller clamp, if not already done.
5. Disconnect the drain line from the drainage catheter by turning counter clockwise and pulling straight back. The drainage line does not have to be kept sterile.
6. Clean around the valve opening with alcohol wipe for 30 seconds being careful not to touch the valve opening with your gloved hand. Discard the wipe.
7. Replace the cap on the catheter valve by twisting it clockwise until the cap snaps into its locked position.
8. Don personal protective equipment to dispose of drained fluid. Cut the tubing and carefully invert the bottle over a toilet. Prevent splash back as much as possible. Gently drain the fluid into the toilet. Close the toilet lid and flush the toilet. Dispose of the empty bottle in regular garbage. If the patient is on any medications requiring precautions (e.g. chemotherapy), follow precautions.

PART C: DRESSING CHANGE

1. Perform hand hygiene before direct patient contact and subsequently as clinically indicated.
2. Open two (2) 2% chlorhexidine swab sticks, drain sponges, 4x4 gauze sponges and transparent film dressing(s) while maintain the supplies as sterile on the open packages.
3. Apply non-sterile gloves.

4. Clean around the catheter site with a 2% chlorhexidine swab stick starting at the exit site and moving in circles outward.
5. Repeat with a second swab stick.
6. To apply dressing:
 - Place two (2) 4x4 drain sponges under the catheter.
 - Wind the catheter into loops on top of the dressing.
 - Place two (2) 4x4 gauze sponges on top of the catheter.
 - Cover with one to two (1 to 2) 15cm x 20cm transparent film dressing(s) and ensure that the edges of the dressing are well secured to the skin. Ensure that the gauze covers the entire catheter to prevent the catheter from sticking to the transparent film dressing.

PART D: DAMAGED OR ACCIDENTAL REMOVAL OF A CATHETER

1. Damaged catheter:
 - Clamp the catheter using forceps proximal to the patient from the source of the leak.
 - Obtain vital signs.
 - Notify the physician or delegate.
2. Accidental removal of the catheter:
 - Apply sterile paraffin gauze over the exit site and cover with a 4x4 gauze dressing.
 - Secure with tape.
 - Obtain vital signs.
 - Notify the physician.

DOCUMENTATION:

Electronic Patient Record/Progress Notes/Flow Sheets/Out-patient Record.

- Patient's tolerance to removal of fluid.
- Volume, characteristics and consistency of fluid removed.
- Assessment of catheter exit site.
- Specimens sent, if any.
- Vital signs.

REFERENCES:

Adapted from Hôpital St. Boniface Hospital Nursing Procedure Manual (2013). *Thoracentesis Catheter (Pleurx®): Intermittent Drainage of Pleural Fluid and Care of (Long Term)*
MedQuest Medical Inc. Pleural & Peritoneal Catheter Drainage (2013). *Information for Nurses & Patients*