

Procedures in Interventional Radiology

Caring for Your Pleurx® Drainage Catheter

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Introduction

Your doctor has asked that a PleurX drainage catheter be placed in your chest. The catheter will allow you to drain fluid from around your lungs. This booklet tells you how to use and care for the catheter. Please read the booklet so that you can discuss anything that is not clear with your doctor or nurse.

Your Pleural Space

The pleura are sac-like membranes that cover your lungs. Between the inner and outer walls of the pleura is a thin film of fluid that makes it easy for the lungs to expand and contract. However, if too much fluid accumulates in this space, it can limit the ability of your lungs to expand. This can make you feel short of breath. Fluid may accumulate around one or both lungs. (See Figure 1.)

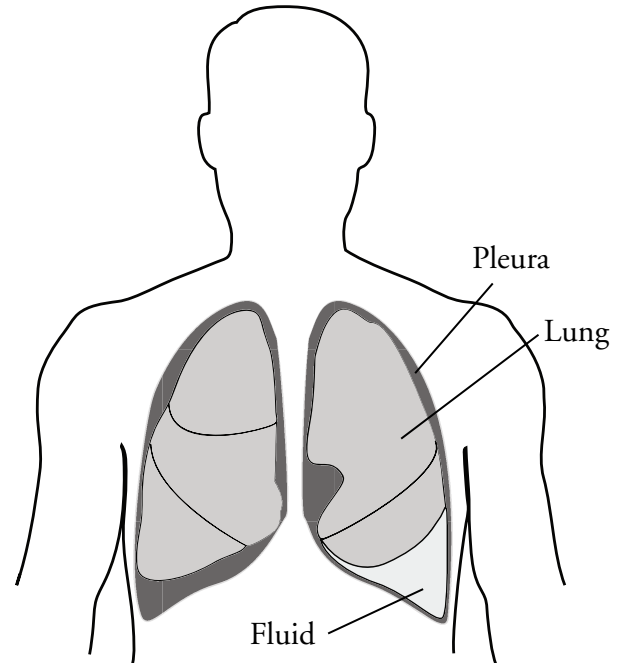


Figure 1

Preparing for Your Procedure

Please follow these instructions to prepare for the placement of the PleurX:

- Review the card Common Medicines Containing Aspirin and Nonsteroidal Anti-Inflammatory Products.
- Ask your doctor what to do if you take:
 - Blood thinners such as Coumadin® (warfarin), Plavix® (clopidogrel), Pletal® (cilostazol), or injectable heparin.
 - Medicine for diabetes.
- Call your doctor if you develop any illness within two days of your procedure. This includes a fever, cold, flu, or a sore throat.
- Do not eat solid food after midnight the night before your procedure.
- You may eat or drink clear liquids up to one hour before your procedure. These include:
 - Water
 - Apple or cranberry juice
 - Coffee or tea without milk
 - Jell-O®

If you are coming in from home for your procedure, you will receive two telephone calls one or two business days before your procedure. If your procedure is on a Monday, you will be called on Thursday or Friday. It is important that we have a phone number where we can reach you. It could be your home, office, hotel, or cell phone. If you give us your cell phone number, make sure the phone is charged and turned on.

A nurse will call you between 8:00 am and 7:00 pm to:

- Review your instructions.
- Confirm information about your procedure.
- Complete a brief assessment.
- Answer your questions.
- Tell you where you should go.

If you do not receive a call by 7:00 p.m., please call (212) 639-6689.

Someone from the Admissions Center will call you between 3:00 p.m. and 7:00 p.m. to:

- Tell you when to arrive.

If you do not receive this call by 7:00 p.m., please call (212) 639-7881. On the day of the procedure, please be aware that many things can impact the start time of your procedure. You might want to bring a book or magazine.

The Day of Your Procedure

- You may shower, but do not apply any cream or lotion.
- Take all medicines you normally take (except blood thinners, those on the aspirin card, and any that your doctor told you not to take) with water or another clear liquid.
- If you use contact lenses, wear glasses instead. If you do not have glasses, bring a container for your contact lenses.
- If you are coming in from home for the procedure:
 - Bring your medicines with you on the day of the procedure.
 - Leave valuables and jewelry at home.
 - Bring only the money you need (e.g., for a newspaper or parking costs).
 - Bring your Memorial outpatient ID card.

You are scheduled to have your PleurX catheter placed by a doctor in Interventional Radiology. It takes about 45 to 90 minutes.

The Procedure

An intravenous (IV) line will be inserted into a vein in your arm. During the procedure, you will receive medicine through your IV line. The medicine may make you feel drowsy and will control pain. You will not be asleep.

If you have fluid around only one lung, the catheter will be placed on that side of your chest. If you have fluid around both lungs, your doctor will choose the best side for the catheter. The doctor will cleanse the area with an antiseptic solution and place sterile drapes. The area will then be numbed at the selected site with an injection of a local anesthetic. The PleurX catheter will be inserted through a small incision in your skin into the pleural space. (See Figure 2.) The catheter has many holes to allow the fluid to drain. It also has a one-way valve that allows the fluid to come out, but does not allow air to go in.

When the insertion procedure is complete, the catheter will either be capped or attached to a collection unit. The unit is called an Atrium®. It allows the fluid to drain continuously. The catheter is usually detached from the Atrium a day or so after it is placed.

Caring for Your PleurX Drainage Catheter

A family member or friend may need to help you care for your PleurX catheter. Your nurse will teach you and your helper how to do it. You or your helper will practice while the nurse watches. Most people need to practice several times to become comfortable with the steps. We will arrange for a visiting nurse to go to your home. The visiting nurse will help you until you feel confident enough to do it alone.

Draining Your Pleural Space

You will need to drain the fluid from your chest every other day or as directed by your doctor. To drain the fluid, you will attach the catheter to a vacuum bottle. The vacuum pulls the fluid from your chest into the bottle. It is possible to drain up to 1 liter (1000 ml) a day. Your doctor will tell you what the drainage should look like and the amount you can expect. If you have pain during drainage, take your pain medicine as directed by your doctor 30 minutes before draining.

Gather the supplies to drain the pleural fluid.

- 1 Drainage Kit which includes:
 - A vacuum bottle (500 mL or 1,000 mL)
 - The PleurX Procedure Pack, which has gauze, foam pad, valve replacement cap, and gloves. (You will not need to use the gloves.)
 - If you will not change your dressing after draining fluid from your catheter, use the kit with only the bottle and valve replacement cap.
 - 4 alcohol wipes
1. Wash your hands thoroughly.
 2. Open the outer bag.
 3. Open the PleurX Procedure Pack. Remove the package with the valve replacement cap. Be careful not to touch anything else in the pack. Open the package with the valve replacement cap, but do not touch the inside of the packaging and do not remove the cap. Place it beside the pack.
 4. Open the package with the vacuum bottle and place the bottle on a table. (See Figure 3.)

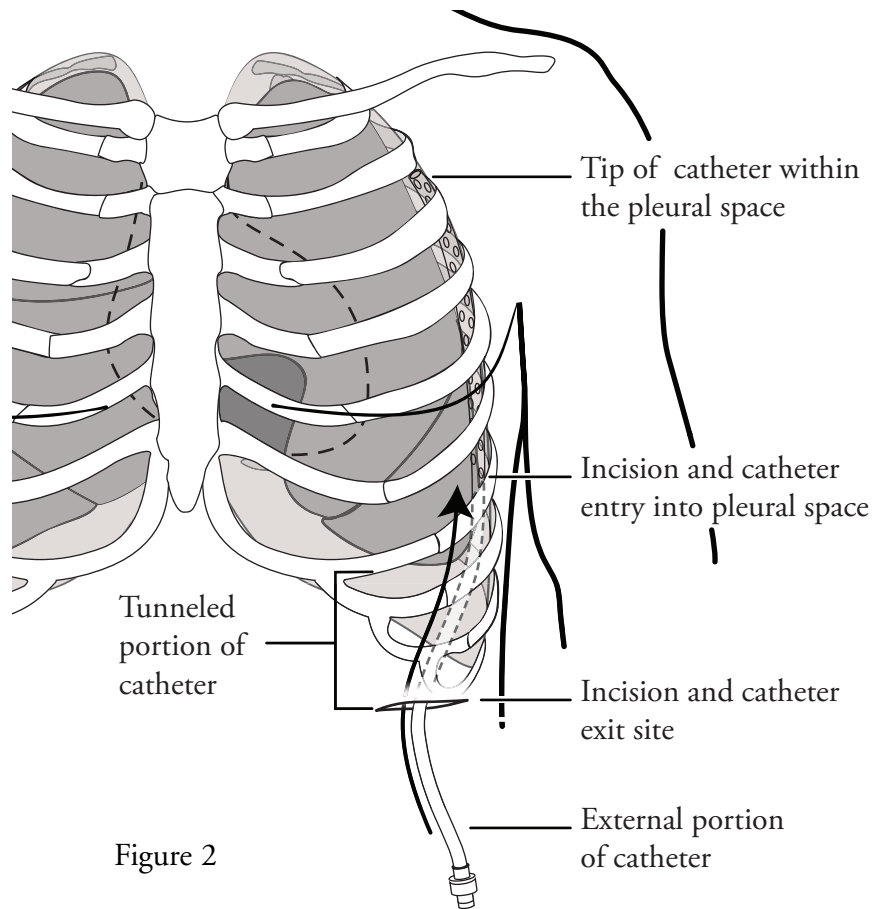


Figure 2

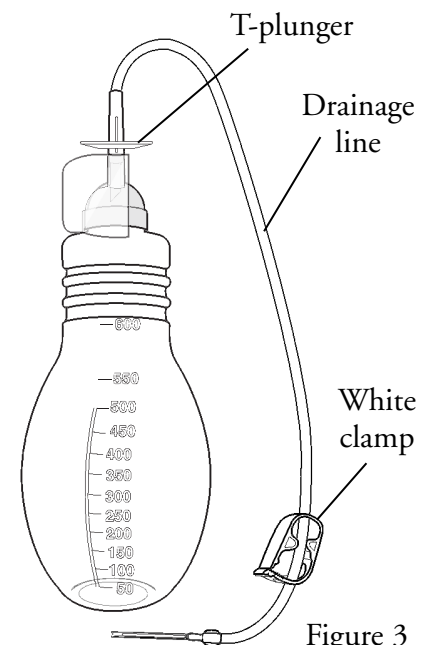


Figure 3

5. Check to see that the tip of the drainage tube has a plastic sleeve. (See Figure 4.) If the sleeve has fallen off, begin again with a new drainage kit.
6. Remove and discard the paper holding the drainage line in a coil.
7. Tear the tops off on two of the alcohol wipes and leave them in their wraps.
8. Pinch the clamp on the drainage line completely closed. (See Figure 5.)
9. Remove the support clip on the bottle by grasping the flange and pulling outward. (See Figure 6.)

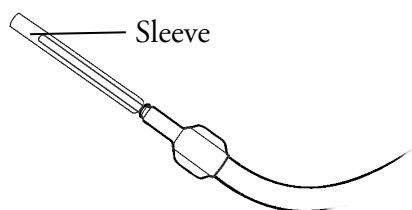


Figure 4

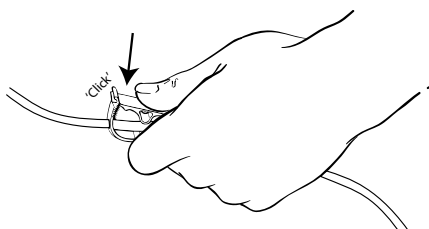


Figure 5

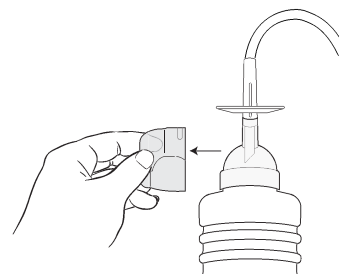


Figure 6

10. Wash your hands again thoroughly.

11. Twist the cap to remove it from the valve on your PleurX catheter. While still holding the catheter, discard the cap. (See Figure 7.)

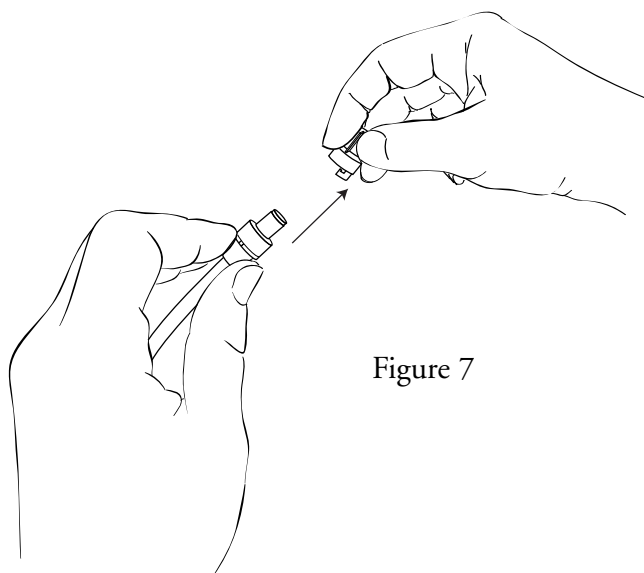


Figure 7

12. Continue to hold the catheter in one hand. With your other hand, take one alcohol wipe and clean the valve thoroughly. Be careful not to let anything touch the end of the catheter after it has been cleaned. Discard the alcohol wipe.

13. Pick up the drainage line and remove the plastic sleeve on the tip. You may be able to do this with two fingers from the hand holding the catheter, but it will be easier if you have a helper do it. Do not allow anything to touch either the catheter valve or the tip of the drainage line. Insert the tip of the drainage line into the cleaned catheter valve. Push the tip of the drainage line completely into the valve at the end of the catheter. (See Figure 8.) You may hear and feel a snap when the tip and valve are locked together, though it is common for people not to notice it.

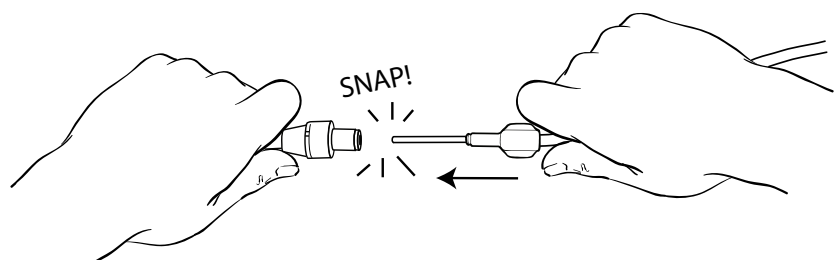


Figure 8

14. Activate the vacuum in the bottle. Hold the bottle with one hand while you push down on the white T-plunger to puncture the seal. (See Figure 9.) Release the clamp on the drainage line. (See Figure 10.) You will see fluid flow into the drainage bottle. You can control the flow rate by squeezing this clamp partially closed. If you feel pain, slow down or stop the flow of the drainage. If you still have pain, contact your doctor or nurse after you have completed the procedure.

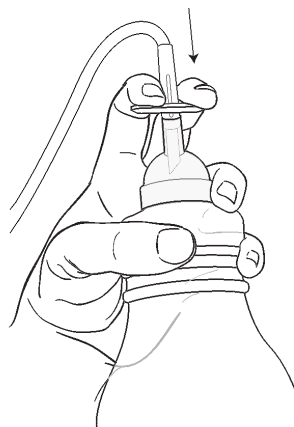


Figure 9

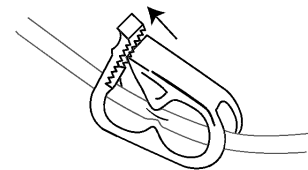


Figure 10

15. The flow into the bottle will slow down when the fluid is almost completely drained from your chest. When the flow stops or the bottle is filled, squeeze the clamp on the drainage line completely closed.

16. **If you are using a 500 ml bottle and have been instructed to drain more than 500 ml** and the bottle is full, have your helper open another drainage kit. Have your helper:

- a. Remove the bottle from the packaging.
- b. Pinch the white clamp closed.
- c. Tear the top off of an alcohol pad.
- d. From this point forward, you can resume care.
- e. Hold the catheter with one hand. Pull the tip of the drainage line from the filled bottle out of the valve in a firm smooth motion with the other hand. Set the drainage line down, but keep holding the catheter with one hand.
- f. Use an alcohol wipe to clean the catheter valve thoroughly. While continuing to hold the catheter, throw away the alcohol pad.
- g. Proceed with draining into the new bottle starting with step 12.

17. **When you are finished draining**, hold the catheter with one hand. Pull the tip of the drainage line out of the valve in a firm, smooth motion with the other hand. (See Figure 11.) Set the drainage line down, but keep holding the catheter in one hand.

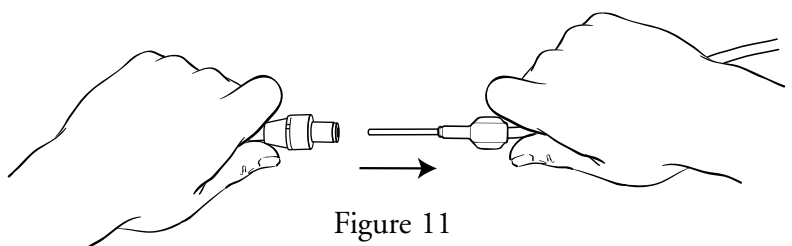


Figure 11

18. Use an alcohol wipe to clean the catheter valve thoroughly.

19. Pick up the replacement valve cap but do not touch the inside. Place the new cap over the catheter valve and twist it clockwise until it snaps into its locked position. (See Figure 12.) If you touch the inside of the valve cap, you must open another pack and use a new one.

20. Make sure the clamp on the drainage bottle(s) is tightly closed. Tie a knot in the tubing. Remove the top part of the bottle by pushing up on the soft plastic piece. Empty the drainage into the toilet. Place the drainage bottle and tubing in a plastic bag. Secure the opening with a twist-it or Zip lock. Discard it with your household waste.

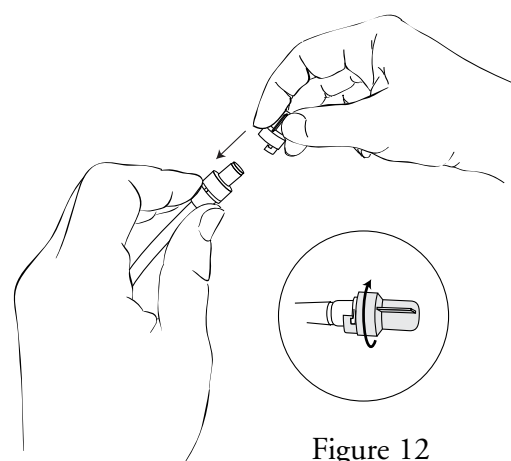


Figure 12

Changing the Dressing

The dressing must be changed once a week or whenever it becomes wet or soiled or pulls away from the skin. You or your helper should inspect the dressing every day. Look for any signs of wetness and check to see if the dressing has pulled away from the skin. If you see wetness or if it is peeling, you must change the dressing. Otherwise, it only has to be changed once a week. Change the dressing just after you have drained your pleural space. That way, you only have to open one drainage kit.

Gather the supplies to change the dressing:

- Foam catheter pad, contained in the catheter pack
- Adhesive dressing, contained in the catheter pack
- 4" x 4" gauze pads, contained in the catheter pack
- Soap and small bowl with water
- Extra gauze or clean washcloth

1. Wash your hands thoroughly unless you have just drained your pleural space and have already washed them.
2. Remove the dressing from your catheter and discard it.
3. Wash your hands again thoroughly.
4. Use a gauze pad or clean washcloth to clean around the catheter with soap. (See Figure 13.) Rinse with water using a new clean gauze or washcloth. Pat dry if necessary.
5. Place the foam catheter pad under the catheter. (See Figure 14.)
6. Take the self-adhesive dressing and peel away the paper backing from one side. (See Figure 15.) Place the gauze pad over the catheter and foam pad. Center the dressing over the gauze pad. Press it down allowing the end of the catheter to extend out from under the dressing. (See Figure 16.) Peel the other half of the paper backing away from the dressing and press it down.
7. You will notice the dressing appears shiny and stiff. There is a top cover that needs to be removed. Start at a corner. Pull the shiny cover back and peel it off the dressing. (See Figure 17.) Smooth and press the dressing down to make sure it is completely secure.
8. The part of the catheter that is not covered by the dressing can safely hang loose.

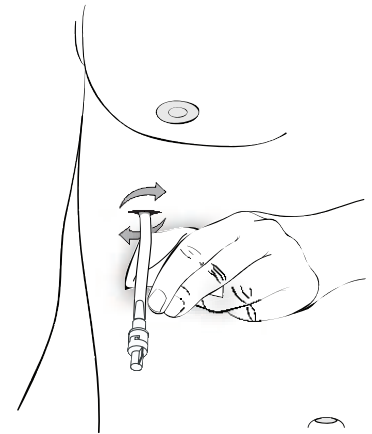


Figure 13

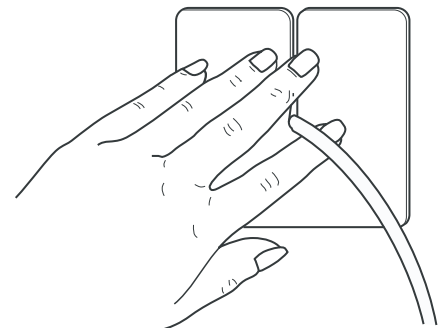


Figure 14

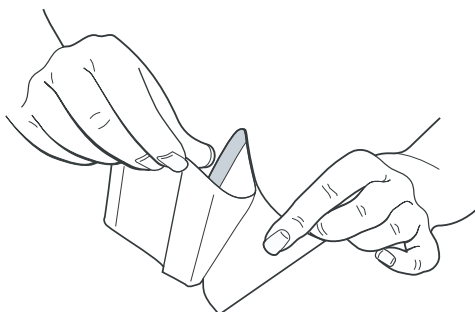


Figure 15

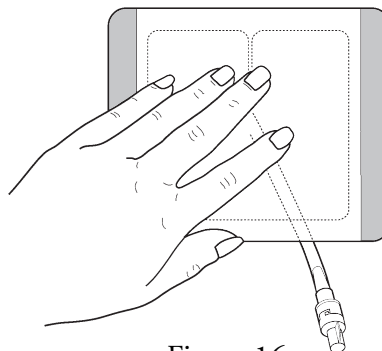


Figure 16

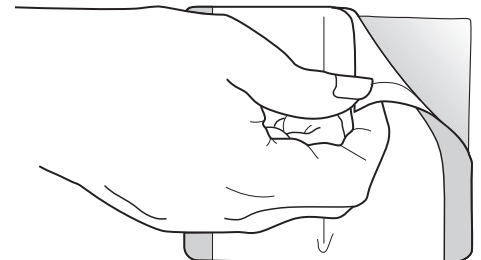


Figure 17

Special Points

- You may shower and bathe with the catheter in place. AquaGuard® is a one time use waterproof cover. Each time you shower, cover the catheter dressing with a new AquaGuard to protect it from getting wet. The edges of the AquaGuard have peelable tape. Fold over a corner of each side of the tape. (See Figure 18.) Hold the AquaGuard with the arrows pointing towards your head. Peel off the top strip and place the top edge of the AquaGuard above the dressing. Smooth it down. Then grab a folded corner and peel down one side, smoothing as you go. Do the bottom and remaining side the same way. The edges will stick to each other if it does not fit smoothly around the dressing. Do not let the tape on the AquaGuard touch the catheter dressing. It can lift your catheter dressing when you remove the AquaGuard after showering.

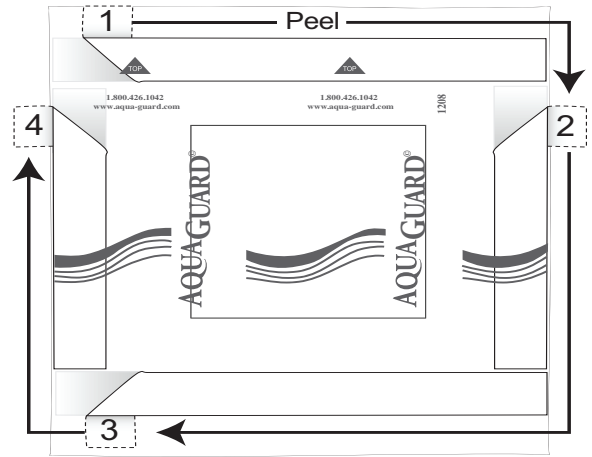


Figure 18

- If you do not have an AquaGuard®, you can use any heavy piece of plastic, such as gallon size Ziplock® bag. Tape it over the dressing. Use paper tape as that will not loosen if water hits it.
- You must change the dressing if it gets wet.
- Do not drain more than 1,000 ml (1 liter) at a time from your pleural space unless instructed by your doctor.
- Do not use sharp objects around your catheter.
- Only insert the drainage line into the catheter. Other items are likely to damage the valve.
- If your catheter becomes damaged, cut, or broken, take these steps:
 1. Pinch the catheter closed between your fingers.
 2. If you have a slide clamp, slip it over the catheter and tighten the clamp. If you do not have a slide clamp, bend the catheter and tape it in this position.
 3. Call your doctor immediately.

Commonly Asked Questions

How often should I drain fluid from my chest?

Fluid will accumulate at different rates. At first, you will be told to drain 500 ml to 1000 ml from your chest every other day. Keep a record of:

- How much you drain.
- When you drain.

That will help your doctor develop a schedule that is right for you. Talk to your doctor if you want to drain more or less fluid.

Generally, these guidelines are recommended:

- Most patients can drain every other day. You can drain more often if you have symptoms such as shortness of breath.
- As the amount gets less:
 - When it is less than 100 ml in one session, drain every three days.

- When it is less than 50 ml for three sessions, (over nine days), call your doctor. You will have an x-ray to see if the catheter can be taken out.

What should I do if no fluid drains out of my chest into the bottle?

There are several reasons this can happen. There may be no fluid in your chest to drain. There may be a problem with the catheter, bottle, or drainage line. The bottle may have lost its suction.

Check for problems.

- If the T-plunger on the top of the drainage bottle is not compressed, the bottle no longer has vacuum pull.
- Make sure that:
 - There are no kinks.
 - The clamp on the drainage line is open.
 - The drainage line and catheter valve are securely connected.

The catheter can sometimes get clogged. Roll the catheter in between your fingers. That may dislodge any material that is blocking the flow of the drainage.

If these steps fail or if the bottle has lost its vacuum, repeat the drainage procedure with a new drainage kit and bottle.

If you still have no fluid draining, it is possible that you do not have not enough fluid in your chest. You will likely be able to feel when fluid is in your chest. It is possible that over time, the amount of fluid will decrease. If it does, you will not need to drain as often as you did when the catheter was first inserted. Regardless of the reason, call your doctor.

Is my catheter permanent?

The length of time you have the catheter will depend on how much fluid is produced. Over time, the fluid may stop accumulating. If this occurs, the catheter may be removed.

Conclusion

In time, caring for your PleurX catheter will become part of your daily routine. We hope it will make you more comfortable and allow you to do things you enjoy. Please share any questions or concerns with your doctor or nurse.

Call Your Primary Doctor or Nurse If:

- You have a fever of 100.4° F (38° C) or higher.
- The drainage changes color or consistency.
- The drainage is cloudy or has a foul odor.
- The amount of fluid draining from your chest changes.
- You have pain when draining or pain that continues after draining.

Call the Nurse in Interventional Radiology if:

- You have redness, swelling, drainage, or pain at the catheter insertion site or in the region of the catheter.
- You damage, break, or cut the catheter or it becomes dislodged.
- You see leaking from the valve or catheter.

Ordering Equipment

The company only sells bottles alone (product numbers 50-7205B and 50-7210) or bottles with procedure dressing packs (product numbers 50-7500B and 50-7510). You will most likely need more bottles than procedure packs. Having replacement valve caps available might be helpful. You can order your equipment by calling Edgepark Medical at 1-800-321-0591. Ask to speak with the PleurX specialist.

Item	Denver® Catalog Number
PleurX Drainage Kit with 500ml bottle	50-7500B
PleurX Drainage Kit with 1000ml bottle	50-7510
Vacuum Bottle (500 ml)	50-7205B
Vacuum Bottle (1,000 ml)	50-7210
Replacement Valve Cap	50-7235

AquaGuard can be ordered from the MSKCC General Stores using order number 3294.

Interventional Radiology Contact Information

For any issue related to your procedure, please contact Interventional Radiology. Monday through Friday, 9AM to 5PM, call 212-639-2236 and ask for the nurse. After hours and on the weekends, call the paging operator, 212-639-2000 and ask for the Interventional Radiology Fellow on call.

You can also contact your primary doctor.

