Patient Information Publications
Warren Grant Magnuson Clinical Center
National Institutes of Health

Managing Your Groshong Catheter

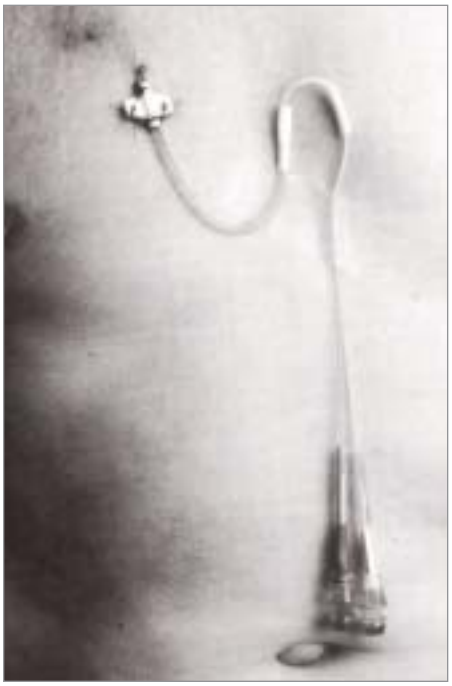
This information was compiled by your nursing staff to tell you about your new Groshong catheter. By providing this information, we hope to reduce your anxiety and help you learn how to take care of your catheter. Soon, you, perhaps with a family member, will be caring for your catheter with confidence.

While your doctor and nurse have discussed the need for a Groshong catheter with you, you may still have questions and concerns. To help you understand what will be expected of you, your nurse will review this booklet with you or with someone who will be caring for you. You will learn how the catheter is inserted, how to change the dressing and catheter cap, and how to flush the catheter. Your nurse will also discuss safety and hygienic precautions you may need to take, and what to do when problems arise.

Many people have had Groshong catheters, and most have managed well with these devices. We encourage you to learn and master the care of your Groshong catheter. Once you are confident with your catheter, daily care will be simple.

What is a Groshong catheter?

The Groshong catheter is a long, thin tube made of flexible silicone rubber. It is surgically inserted into one of the main blood vessels leading to your heart.



The Groshong Catheter

Depending on your therapy needs, the catheter may have either a single or a double lumen (opening) at the tip.

Single- and double-lumen catheters can be used for drawing blood samples and for giving intravenous fluids, blood, medication, or nutrition. With a Groshong catheter, you will not need to have as many needlesticks during your care.

The Groshong catheter is unique in that it has a closed, rounded tip. This allows a three-position valve to be placed in the side of the catheter, near the tip. The valve allows liquids to flow in or out, but it remains closed when it is not in use.

How will the catheter be inserted and anchored?

The doctor will talk to you before the procedure. If you have questions or concerns, be sure to voice them at that time.

The catheter will be inserted under local anesthesia. You may feel pressure, but no pain. You may receive medications that make you sleepy during the procedure. However, during catheter placement, you will be able to talk to the team.

First, a small incision will be made near your collarbone or shoulder. This area will be numbed by a medicine like novocaine. This incision will be the "insertion site." A second incision called the "exit site" will be made between your nipple and midchest. A tunnel will then be made under your skin between these two incisions. The Groshong catheter will be pulled through this tunnel from the exit site to the insertion site, and threaded into a large vein leading to your heart.

Because this procedure may be uncomfortable, you will receive medication to help you relax. This medication will most likely make you drowsy, and you should not drive for 24 hours after receiving it. If you are having this procedure as an outpatient, you must have someone take you home and stay with you for 24 hours.

How will the catheter feel when it is in place?

There will be a small Dacron cuff on the catheter between the insertion and exit sites. You may feel it or see it under your skin. The cuff serves two purposes:

- to help hold the catheter in place as your skin heals around it
- to help prevent infections by stopping bacteria from entering the tunnel and traveling up to the vein.

After the procedure

The procedure usually takes about 1 hour. After the procedure, you may feel some discomfort. Please let your nurse know when you are uncomfortable. You should be able to receive medication to make you feel better.

You will notice a dressing over the catheter exit site. This dressing should be changed in 24 hours. If you see a lot of bleeding on the dressing during this time, call your nurse (if you are in the hospital) or call the Clinical Center (if you are at home).

There will also be a dressing over the insertion site near your collarbone or on your neck. Usually, this dressing can be removed after 24 hours. Sutures (stitches) may be present, so ask your doctor or nurse about dressing change and suture removal. You should also watch this site for bleeding.

Dressing change

While you are in the hospital, your nurse will use sterile technique to change your dressing two times a week. Sterile technique means that the nurse will follow special procedures to reduce your risk of infection. When you are at home, you or the person caring for you will change the dressing using clean technique. (Clean technique will be explained on the following pages.) Clean technique is adequate because there are fewer bacteria in your home than in the hospital.

Dressing change and site care at home

Site care means cleaning and inspecting the place where the catheter leaves your body. By keeping this area clean, you will help prevent infections at the exit site and along the tunnel. *Look carefully at this site each time you change the dressing.* Check for redness, tenderness, swelling, and drainage from the site. Notify your doctor or nurse if any of these signs are present. The following section describes how to do the dressing change and site care at home.

Schedule

Change your dressing and perform site care according to the following guidelines:

- clear dressing: once per week (e.g., every Friday)
- gauze dressing: twice per week (e.g., every Tuesday and Friday)

Your line and site should not get wet when showering. Cover both before getting into the shower.

If the dressing becomes soiled, loose, or moist, it should be changed immediately.

Supplies

- three alcohol swab sticks
- three Betadine swab sticks
- two alcohol prep pads
- one skin prep swab stick (optional)
- one Coverlet dressing or other dressing given to you by your nurse

Procedure

l. Prepare a clean work area. Gather the supplies listed above.

2. Wash your hands thoroughly with soap and water.

3. At the notches, open the packages of Betadine, alcohol swab sticks, alcohol prep pads, and the skin prep swab stick. Place the opened packages on the clean work area.

4. Remove the old dressing. Be careful not to tug on the catheter or touch the exit site.

5. Check the site and tunnel carefully for redness, tenderness, swelling, or drainage.

6. Rewash your hands.

7. Remove one alcohol swab stick from the package. Hold only the end of the swab stick and cleanse the exit site. Begin at the catheter exit site and swab outward in a circular motion.

8. Repeat step 7 *twice* using a new swab stick each time. *Never return to the exit site with the same swab.*

9. Remove one Betadine swab stick from the package. Hold only the end of the swab stick and cleanse the exit site. Begin at the catheter exit site and swab outward in a circular motion.

Step 9: Cleansing the exit site.

10. Repeat step 9 *twice* using a new swab stick each time. *Never return to the exit site with the same swab.*
11. With your nondominant hand, grip the catheter at the exit site with the inside of an alcohol prep pad. Then, with your dominant hand, gently clean the outside of the catheter with the inside surface of another alcohol prep pad. Start from the exit site and move to the cap. If you have a double-lumen catheter, return to where the catheter splits and clean the other lumen down to the cap.
12. (Optional) Apply skin prep to your skin where the tape part of the dressing will be placed.
13. Apply the dressing. Do not touch the piece that will cover your exit site.

Step 13: Applying dressing.

14. Loop a piece of the catheter over or under the dressing and secure it with tape.
15. You may also tape the ends of the catheter in a comfortable position.

Catheter care

Flushing the catheter with saline

Flushing the catheter lumens is required to keep the inside of the catheter clean and prevent it from becoming blocked. This must be done on a periodic basis as outlined below.

The Groshong catheter is flushed with 0.9 percent normal saline solution. Be sure to treat each lumen as a separate catheter and flush it by following these directions.

Schedule

Flush the catheter after each use or every 7 days when the catheter is not in use.

Supplies

- alcohol swabs
- 10 mL 0.9 percent normal saline prefilled syringes
- blunt plastic cannula

Procedure

l. Prepare a clean work area. Gather the supplies listed previously.

2. Wash your hands thoroughly with soap and water.

3. Remove the prefilled normal saline syringe and blunt plastic cannula from the plastic bag. Peel open the blunt plastic cannula wrapper and set the cannula aside. Remove the cap from the syringe. Screw the blunt plastic cannula onto the syringe. Be careful not to touch the tip of the syringe or the end of the cannula that connects to the syringe.

Step 3: Placing the prefilled 0.9 percent normal saline syringe into the holder.

4. Remove the cap on the cannula tip. Be careful not to touch the tip.

Step 4: Removing the tip cover.

5. Check for air bubbles in the syringe. Note: If there are air bubbles, flick the syringe with your finger to make the bubbles rise to the top. Then, gently push the plunger forward to force the air out. Stop at the 10 mL mark on the syringe.

6. Carefully replace the cover loosely over the syringe tip.

7. Hold the catheter in your nondominant hand and scrub the catheter cap with an alcohol swab. Allow the cap to dry.

8. Continue to hold the catheter in your nondominant hand. Remove the tip cover and insert the interlink tip of the syringe into the center of the catheter cap.

9. Inject the 10 mL of saline into your catheter.

10. Continue pressing in the syringe plunger as you withdraw the syringe tip from the catheter.

11. Remove the syringe from the catheter. Place the syringe in a proper container such as a coffee can with lid or a needle box. Never reuse a syringe. (Refer to "Handling Sharp Objects Safely at Home" for details.)

12. Repeat for each lumen.

Changing the catheter cap

When you are home, change the cap to prevent infection and overuse.

Schedule

Change the cap once a week or as needed.

Supplies

- one alcohol swab
- one new sterile luer-lock interlink intermittent infusion cap

Procedure

1. Prepare a clean work area. Gather the supplies listed above.
2. Wash your hands thoroughly with soap and water.
3. Open the supplies and place them on the work area. DO NOT remove the protective tip covering the luer-lock cap. This tip keeps the luer-lock sterile until you place it on your catheter.
4. Hold the catheter in your nondominant hand and scrub the cap-catheter connection with an alcohol swab. Let the cap-catheter connection dry.
5. While continuing to hold the catheter in your nondominant hand, remove the old cap from the catheter.
6. Remove the protective tip from the new cap and screw the new cap on the catheter. After the protective tip has been removed, do not touch the sterile tip with your fingers.
7. Repeat with each lumen.

Precautions to observe with your catheter

After your catheter is in place, there are a few key things you will need to remember.

- **Never use scissors near your catheter**.
- Always carry the smooth-edged clamp your nurse gave you in case the catheter breaks.
- After your catheter is implanted, we recommend that you use a gauze-and-tape dressing for the first week. After the first week, you may choose either a gauze or clear dressing for your site. The frequency of care can be reviewed on page 4 under "Schedule."
- You may shower or bathe with either dressing, but the dressing and catheter must be covered with plastic. If the dressing or catheter gets wet, change the dressing immediately. Never let the catheter dangle in the water.
- One month after catheter insertion, you may be able to swim in a chlorinated pool. Check with your health care team if swimming is allowed. If it is, check that the pool has a regularly monitored chlorine content. You must also protect the exit site with a water-tight dressing and change it after swimming if the dressing becomes wet. Do not swim in lakes, rivers, oceans, or use hot tubs.
- You may continue your normal activities including work, school, exercise, and sexual activity. Contact sports are not recommended.

What to do when problems occur

While most patients continue their daily activities unhindered by their catheters, problems may develop.

- *Air embolism.*
  This may occur if air enters your vein through the catheter. You may feel short of breath or develop a cough. If this occurs, call your doctor or nurse immediately.
- *Catheter breakage.*
  While it is rare, the catheter can break. This is why you must carry a clamp at all times. If the catheter breaks, immediately place your clamp above the break closest to your skin. Call your doctor or nurse. Groshong catheters can be repaired.
- *Clotting.*
  A clot may block the flow of fluid through the catheter if the catheter is not flushed promptly after blood drawing or if blood backing up in the catheter is not cleared. To prevent clotting, flushing the catheter with saline is a must. If you meet resistance when attempting to flush the catheter, stop. *Do not force the syringe*. Call your doctor or nurse.
- *Infection.*
  Infection may occur if the exit site is not kept clean and dry. Every time the infusion cap is removed, bacteria may enter the catheter and travel to your blood stream. *If you feel chills after flushing, call your doctor or nurse right away.* Closely monitor your catheter exit site for signs of infection: redness, tenderness, or drainage. If your white blood cell count is low, you will not see drainage or pus. You may also have fever and chills. *Call your doctor or nurse immediately if you notice these signs and symptoms of infection.*
- *Thrombosis.*
  Thrombosis may rarely occur if a blood clot forms and blocks the flow of blood through the vein in which your catheter is placed. Signs of thrombosis are swelling in your neck or face, or pain or swelling in your arm. If you notice these signs, call your doctor or nurse immediately.

Take-Home Supplies

When you are low on your take-home supplies, inform your nurse. You may pick up your supplies from central hospital supply. The supply kit will contain alcohol swab sticks, blunt plastic cannulas and prep pads, Betadine swab sticks, caps, and a type of dressing you and your nurse have chosen. Normal Saline syringes may be picked up from the pharmacy.

If you had the catheter placed when you were an outpatient, you may obtain your supplies upon discharge the day of the procedure. You may also receive supplies during your return visit to the clinic the next day.

More information about managing venous access devices can be found at the Internet site below:

http://www.cc.nih.gov/nursingnew/nursingresources/Procedure/vadcaremaintpro02_02.htm

Handy Telephone Numbers

Your Doctor_____

301-496-_____

Your Nurse_____

301-496- _____

NIH Information

Available 24 hours a day at 301-496-4000. Ask for the physician on call or the VAD (venous access device) nurse on call.

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This information is prepared specifically for patients participating in clinical research at the Warren Grant Magnuson Clinical Center at the National Institutes of Health and is not necessarily applicable to individuals who are patients elsewhere. If you have questions about the information presented here, talk to a member of your healthcare team.

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