Tunneled Catheter Insertion and Removal

Catheters are long thin soft plastic tubes. A tunneled catheter is one that is placed in a vein when there is a need to access the blood system many times for more than 30 days. This provides a painless method of drawing blood, giving blood products, providing a method of removing waste products from the blood (*hemodialysis*), and giving medicines or nutrients into the blood stream. They can be placed in different parts of the body depending upon how it will be used. These catheters are secure and easy to access. A part of the catheter is "tunneled" under the skin. This is done to decrease the risk of infection.

There are different types of tunneled catheters. The specific one used will depend on your exact needs.

BEFORE THE PROCEDURE

You may be advised:

- Not to eat or drink for 8-12 hours before the procedure. Talk to your caregiver about this.
- To stop taking aspirin.
- To stop non-steroidal anti-inflammatory drugs (medicines used to treat inflammation).
- To stop blood thinners several days before the procedure. Ask your caregiver.
- Blood tests to check liver, kidney, and blood clotting function.
- To wear a gown and remove jewelry and glasses just before the procedure is started.
- It is important to plan for someone else to take you home after the procedure. You should not drive immediately after the procedure is done.

LET YOUR CAREGIVER KNOW ABOUT:

- All the medications that you take including herbal medicines.
- Possibility of being pregnant, if this applies.
- Allergies that you may have, especially to anesthetic medicines (medicines that make the skin numb).
- Any past bleeding problems.
- If you have a pacemaker.

RISKS & COMPLICATIONS OF THE PROCEDURE

- Damage to the blood vessel.
- Bruising or bleeding at the site of puncture.
- Disturbance in the normal heart rhythm (usually temporary). This is rare and would only occur if the catheter is being placed in a vein near the chest and/or heart.
- Introduction of the catheter into an artery instead of a vein.
- A collapsed lung (*pneumothorax*). This is rare and could only occur if the catheter is being placed in a vein near the chest.
- Skin infection at the site of catheter insertion.
- Bloodstream infection, especially if your white blood cell count is low.
- Damage or kinking of the catheter so it does not work properly.
- Broken catheter.
- Blockage of the catheter.
- Air in the catheter.

THE PROCEDURE

INSERTION OF CATHETER

- This procedure is usually done on an outpatient basis, and you might not require admission to the hospital. X-ray and ultrasound equipment is used. The x-ray equipment allows your caregiver to watch the catheter on a live display so that it is inserted safely and placed for best catheter function. Ultrasound is used to closely

look at the vein that is being used and to help guide the catheter placement. Using ultrasound helps reduce possible complications.

- You will be asked to lie on your back. A typical IV might be put in if you need medicine for pain or sedation. A heart and blood pressure monitor is often used. The catheter site is usually shaved, sterilized, and covered with a sterile drape. Your caregiver uses anesthetic medicine to numb the area where the catheter goes in. Your caregiver may then make a small nick in the skin, usually in the lower neck. You might feel a sensation of a pinprick while the catheter is being inserted. Generally, a small guide wire is put into the vein first. X-ray can then be used to guide the movement of the wire into a larger vein closer to the heart. A tunnel is created under the skin. You might feel a little discomfort when the tunnel is created. The catheter is then moved through the tunnel into the larger vein. A cuff on the catheter is located in the tunnel part. The cuff helps to anchor the catheter in place over time. Stitches are used to keep the catheter in place when first put in. An x-ray may be done to make sure the catheter is in the right place. These catheters can be used right after they are placed.

REMOVAL OF THE CATHETER

When no longer needed, tunnel catheters can be easily removed. This is usually done by experienced personnel. Sometimes, if the catheters are blocked or if they are infected, they may have to be removed earlier. If the cuff has not anchored in the tissues, these catheters can be pulled out easily. Otherwise, a small procedure will be required to free the cuff and then to remove the catheter.

AFTER THE PROCEDURE

- You may experience pain and swelling in the neck or shoulder.
- You should ask somebody to drive you home.
- You are advised to rest at home that day.
- You can go about normal activities the following day.
- You should not lift heavy weights.

HOME CARE INSTRUCTIONS

- Keep the area of the catheter insertion clean and dry. Some caregivers recommend sponge bathing around the catheter site, then cleaning the area with peroxide, applying an anesthetic ointment that contains an antibiotic, and then bandaging the area.
- You may be asked to flush your catheter with a heparin or sterile saline solution to help keep blood clots from forming and blocking the catheter.
- Keep an emergency kit at home, in case you need to change the dressing (after dialysis).
- Never open the cap at the catheter tip.
- Never let air enter the catheter.
- You may be allowed to shower after one week, using a piece of plastic wrap over the site where the catheter was inserted. Do not wet your catheter site or the dressing.
  - If taking a bath, the catheter should never be allowed to get submerged in the water.

If the catheter was inserted through an arm vein:

- Avoid wearing tight clothes or jewelry on the arm that has the catheter.
- Do not sleep with your head on the arm that has the catheter.
- Do not allow use of a blood pressure cuff on the arm that has the catheter.
- Do not let anyone draw blood from the arm that has the catheter.
- If the catheter is used for hemodialysis, check whether your catheter is working properly by feeling for a vibration several times a day.

SEEK MEDICAL CARE IF:

- There is redness at the site of the catheter insertion.
- There is bleeding at the site of the catheter insertion.
- You develop fever of 100.0° F (37.8° C) oral or above.

- You feel weak or ill.
- You feel that your catheter is not working properly.
- You have pain, swelling, and warmth at the site of the catheter.
- Fluid drains from the catheter site.

SEEK IMMEDIATE MEDICAL CARE IF:

- There is a break or a hole in the catheter.
- The catheter is accidentally breaks loose or gets pulled completely out.
- You develop a high fever (102° F (38.9° C) oral or above) and/or chills.
- The catheter becomes totally blocked.
- There is swelling of the arm or shoulder.
- There is bleeding at the site of the catheter that you cannot stop.
- You develop chest pain or trouble breathing.
- You feel weak or have a fainting spell.

Document Released: 01/06/2009 Document Re-Released: 03/16/2010
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