

Problem Solving

There are common problems that can occur with any CVAD. The most common are:

- ▶ Blockage or occlusion of the CVAD
- ▶ Infection
- ▶ Catheter tip movement or accidental removal
- ▶ Catheter breaks
- ▶ Air in the line

Blockage of the CVAD

A blocked or occluded line means that you cannot give fluids or medication through the tubing. Sometimes you feel resistance when you try to flush or you can push fluids in but cannot withdraw blood.

BLOCKAGE CAN BE DUE TO:

- ▶ The line being kinked or clamped. Check your catheter to make sure all clamps are open.
- ▶ The catheter tip hitting against a vessel wall. Lifting your arm up can sometimes change the position of the CVAD tip slightly so fluid can be given. Even if this works, let your health care team know that you are having problems.
- ▶ Proteins and fibrin (fibrin is a sticky protein involved with blood clotting) in your blood can deposit near the tip of the catheter. This clot of proteins, also called a thrombus, can make it more difficult to flush your CVAD. Call your provider and they can give medication that can help dissolve the fibrous clot.
- ▶ Crystallization of total parenteral nutrition mixtures and drug incompatibilities.

Blockage of the CVAD (continued)

WHAT YOU CAN DO:

- ▶ **Do not panic.**
- ▶ Inform your health care team with any signs of blockage or low flow so that medication can be given to dissolve any clots.
- ▶ Flush the catheter properly before and after giving any medication.
- ▶ Clamp the tubing when the CVAD is not being used. You may have a cap placed over the needleless connector to apply pressure and prevent blood from backing up into the tubing.
- ▶ Inform your health care team immediately if you notice any signs of a blood clot.

Blood Clot

A blood clot (thrombus) can form in your vein around the catheter tip. In addition to blockage, a clot can be a site for bacteria to grow and lead to infection.

SIGNS OF A BLOOD CLOT INCLUDE:

- ▶ Swelling in the arm or leg where the CVAD is inserted
- ▶ Swelling of the neck or face
- ▶ Redness and tenderness in the arm, chest area, or neck
- ▶ Leaking of clear fluid from the insertion site
- ▶ Sudden chest pain, coughing, or difficulty breathing can mean the blood clot has traveled to the lungs—**call 911 for professional medical assistance, as this can be a life-threatening emergency.**

Infection

Infection is caused by bacteria around or introduced into the CVAD. The most common cause of infection is from bacteria from around the insertion site or catheter hub that travel along the CVAD to the catheter tip.

WHAT YOU CAN DO:

- ▶ Complete formal and detailed education.
- ▶ Wash your hands the right way any time the catheter is touched (see page 18).
- ▶ Use gloves and masks as directed.
- ▶ Scrub the hub (needleless connector) with chlorhexidine or alcohol each time you flush or insert fluids.
- ▶ Keep the site covered with a transparent dressing (PICC and some tunneled catheters only).
- ▶ Check your insertion site daily for any signs of infection.

Call your health care team right away if you have any kind of fever higher than 100.5°F.

Catheter Tip Movement or Accidental Removal

The CVAD can move or totally slip out. This can be due to severe coughing, arm movement, pulling on the tubing, or the CVAD not being secured properly.

WHAT YOU CAN DO:

- ▶ Secure the CVAD to your skin—this may decrease infections and other complications.
- ▶ Create an extra loop of tubing near the securement site.
- ▶ When fluids are attached, keep the tubing off the floor to prevent anyone from tripping and pulling on the tubing.
- ▶ Measure the length of the tubing with a measuring tape.
- ▶ **If you see that the line has moved or you can see the cuff of the tunneled catheter, notify your health care team. Do NOT use the CVAD until you hear from someone.**
- ▶ If the CVAD comes out, cover the site with gauze or a clean washcloth and apply pressure to stop any bleeding. **Call your health care team right away.**

Catheter Breaks

A tunneled or PICC CVAD tubing can become damaged and break. This can be due to clamping or bending in the same spot.

WHAT YOU CAN DO:

- ▶ Always clamp the tubing in the correct location and check the wear at the clamp site.
- ▶ Keep the tubing under clothing, which will prevent pulling on the CVAD. This is especially important with infants and toddlers, as it will also prevent them from chewing on the CVAD.
- ▶ If the tubing breaks, clamp the CVAD closest to the chest with the existing clamp or use your emergency clamp. Cover the end of the tubing with gauze. If 2 inches are extending out from the chest, the catheter can be repaired. **Call your health care team.**
- ▶ Keep your emergency clamp with you. If you need to, pinch the tubing to stop blood from coming out of the tubing until you can find your clamp.

Air in the Line

No air should be in the CVAD tubing.

WHAT YOU CAN DO:

- ▶ Remove any air in the flush solution before your flush.
- ▶ Remove all air when you prime the tubing. Check to make sure there is no air before attaching it to the CVAD.
- ▶ If you notice air in the tubing and you are not short of breath, remove the air by doing the following steps:
 - Clamp the tubing.
 - Gather your supplies to flush the CVAD, including 2 prefilled syringes.
 - Wash your hands, put on clean gloves, and clean the needleless connector for 15 seconds.
 - Push out 5 of the 10 cc of sodium chloride from a syringe and attach it to the needleless connector.
 - Unclamp the tubing and pull back on the syringe until blood appears. Reclamp and discard the blood.
 - Attach a sodium chloride flush, then unclamp and flush the tubing. If needed, flush with heparin.
 - Clamp the line when finished.
- ▶ If you notice air in the tubing and you suddenly become short of breath or confused, do the following steps:
 - Clamp the tubing.
 - Lie down on your left side with your heart lower than your hip.

Call 911 and inform them that you have air in your line.