

Risk in Access Surgery

Indications:

You have been referred to Michigan Vascular Access for the purpose of providing vascular access for the hemodialysis that you now, or are expected in the foreseeable future, to require.

Vascular Access for dialysis refers to the means for removing large volumes of blood from the body, extracting waste products and undesirable chemicals, and returning the processed blood to the body. The blood can be removed and returned via a plastic tube inserted into a vein (a "catheter"), or by two needles inserted into a specially expanded and toughened vein (a "fistula") or by two needles inserted into an artificial vein inserted under the skin (a "graft").

Generally speaking, it is agreed in the scientific and medical community that a well-functioning fistula is preferable to a well-functioning graft, which is in turn preferable to a well-functioning catheter.

Benefits:

The anticipated benefit of this operation is a safer, more effective, more long-lasting form of vascular access than you now have, or to provide the most effective form of an access that you will be able to use in the future.

Optimizing your vascular access for dialysis is important, as up to 20% of deaths in the dialysis population are attributed to insufficient access or complications of vascular access.

Delay in replacing a catheter with either a graft or fistula increases the risk of central stenosis (ruining the large veins near the heart), or catheter infection.

Risks and complications:

There is no perfect or problem-free operation in vascular access. It is important to know that problems can and will occur to a certain percentage of patients. Most of these problems can be managed and corrected safely. Others will require major efforts, and some can result in permanent injury. You should understand and accept these risks before proceeding with any operation.

Infection:

Every operation that requires an incision or puncture carries a certain risk of infection and bleeding. Antibiotics are generally given to reduce (but not eliminate) the risk of infection.

Cellulitis (inflammation of the skin) can occur at the incision or over a freshly placed graft. This is usually successfully treated with antibiotics. Infection of a new graft that ends up in the blood stream and makes the patient ill (sepsis) generally requires that the graft be removed.

Bleeding:

Bleeding can occur during the operation, or afterward. Bruising is common, and resolves within weeks of the operation. A hematoma (collection of blood under the skin) or seroma (collection of clear tissue fluid) may occur. These generally also resolve on their own in weeks. Occasionally, an operation may be recommended to drain the blood or tissue fluid. Rarely, such a collection may become infected and require drainage.

Nerve injury:

Injuries to small nerves in the arm are usually not noticed by the patient, but may result in limited areas of numbness in the forearm or back of the thumb. Injuries to the major nerves are rarer, but may result in numbness or loss of strength in the hand.

Thrombosis:

A freshly created fistula or graft may clot before it is ever used. Expected rates of thrombosis (clotted fistula or graft) range from 5 to 15%, depending on the type of graft or fistula created. Small arteries, scarred veins, and other individual factors may raise your risk of thrombosis. Clotted fistulas usually require another operation to revise or replace them. Clotted grafts are usually allowed to heal for a couple of weeks, and are then declotted and repaired using two small punctures in the graft (called "percutaneous thrombolysis"). This procedure is done in the operating room, but usually no new incisions are required.

Failure to develop:

Fistulas generally require that the vein attached to an artery during the operation expand and get tougher. This may take two to six months. Frequently, failure to develop adequately is due to narrowings in the vein or artery. A procedure to stretch these narrowings may be recommended. Sometimes a branch of the vein diverts too much blood away from the main channel, and the branch may be tied off through a small incision. Sometimes the vein becomes big and strong enough, but is located too deep for placement of needles. A secondary operation to re-route the vein closer to the skin may be recommended.

Digital ischemia:

Most grafts and fistula derive their blood supply from the arteries of the arm. Some of the blood intended for the hand is diverted into the graft or fistula. In most cases, the hand still gets enough blood, and no problem occurs. Often, a patient may notice "pins and needles" sensations in the hand, occasional mild numbness, or coolness of the hand in the arm where an access has been created (called "steal"). This is normal, and usually resolves over time. Keeping the hand warm with a glove usually helps. However, steal can be more serious, and can lead to long term or permanent disability. If the hand becomes severely numb, severely cold, painful or if there is any loss of grip strength or mobility that is not corrected by warming the hand, the surgeon should be notified immediately. A corrective

procedure may be recommended, or the blood flow in the access may be eliminated to return all the blood to the hand. Delay is unwise.

Risk of anesthesia:

Any type of sedation or anesthesia during procedures carries risk. The sedated patient may not breathe deeply enough. Although uncommon, respiratory insufficiency may cause a "blue alert" requiring temporary help from the ventilator (breathing machine), or even lead to a cardiac arrest. Anesthesia may reduce the blood pressure and affect the circulation. Although uncommon, cardiac arrest or stroke may occur in the operating room just as easily as they can occur while you are walking the dog or shoveling snow. The population requiring dialysis is generally a high-risk group with multiple medical problems pre-disposing them to heart disease. Up to 50 percent of deaths in dialysis patients are from cardiac arrest.

Other unforeseen events:

Rare and unforeseen complications can occur – after your surgery you should discuss any new symptoms with your doctor, whether you believe they are associated with the surgery or not.

Durability of the operation:

Although grafts and fistulas are usually spoken of as "permanent access", for most people there is no such thing. Everything wears out in time, and everything worth having requires some looking after. The dialysis center will look out for problems with your access and refer you for a corrective procedure when indicated. The patient and family can also be alert for problems and seek help before serious consequences occur. Please refer to Michigan Vascular Access's "Warning signs for grafts and fistulas". Well maintained grafts and fistulas will last longer and give fewer problems than neglected grafts and fistulas.

If you have any questions about these indications, benefits, risks or complications of your proposed procedure, please call the office to discuss your concerns or questions with our coordinators. You may and should also discuss any concerns and questions remaining with Dr. Webb prior to your procedure.

_____ Patient signature

Date _____