

## Vascular Malformations

*What they are and how they are treated*

### What are vascular malformations?

*Vascular malformations* are abnormal blood vessels. Veins, arteries, and lymph vessels may be affected.

### Why do they occur?

They occur when blood vessels do not form normally before birth. Even though they are present at birth, you may not know you have them until later in life. They may be diagnosed during puberty, pregnancy, menopause, or at other times when our bodies change.

### What are the symptoms?

- *Venous* malformations (abnormal veins) can cause pain, swelling, or changes in skin color. They can also bleed or leak fluid.
- *Arterial* malformations (abnormal arteries) can cause pain and bleeding. They can also keep blood from reaching your heart, other organs, or limbs. This can stress the heart or muscles in the part of the body that does not get good blood flow.



*A venous malformation*

### How are they diagnosed?

Your doctor may give you one or more of these tests:

- Physical exam
- *Doppler ultrasound* – a type of ultrasound that uses sound waves to see blood flow
- *Magnetic resonance imaging* (MRI) – a test that uses a strong magnet and radiowaves to show structures inside the body
- *Arteriogram* or *venogram* – tests that use a special dye to see inside arteries or veins

### How are they treated?

Vascular malformations can be removed in surgery, but most are treated without surgery. A team of care providers at University of Washington Medical Center (UWMC) will treat you. Your care team may include

specialists in interventional radiology, vascular surgery, plastic surgery, and general surgery.

## Treating Venous Malformations

Venous malformations are often treated without surgery. Most times, it is a day (outpatient) procedure. It is done in the Radiology Department. You will have only mild sedation (medicine to make you sleepy and relaxed). Some patients may need to stay overnight in the hospital.

During the procedure, a *catheter* (thin, flexible tube) is placed into the abnormal blood vessels. A solution called *sclerosant* is injected to collapse the veins and close them with scar tissue. This keeps blood from entering the abnormal veins. It should stop symptoms of pain, swelling, color changes in your skin, changes in the size of the blood vessel, and bleeding. Normal blood vessels are not affected by this procedure.

The procedure may need to be repeated. If it does, treatments will be at least 6 weeks apart. The main goal is to get rid of or lessen your symptoms. Once your symptoms go away, treatments will stop, even if abnormal vessels are still present.

### Recovery

Your discomfort after treatment depends on what area of your body is treated and how many injections you need. Venous malformations can become inflamed and swell after treatment. This discomfort can last up to 2 weeks. You will receive pain medicines during that time. Keeping compression over the treated area for the first 3 days can ease some of the discomfort. You can wear compression garments, bike shorts, or spandex for compression.

## Treating Arterial Malformations

Arterial malformations are also treated in the Radiology Department. You will receive mild *sedation* (medicine to make you relax) or *general anesthesia* (medicine to make you sleep).

A catheter will be placed into your abnormal artery. The artery is usually filled with medical glue or small beads until it is full. This keeps blood from flowing through it.

### Recovery

After your procedure, you may need to stay overnight in the hospital so that we can monitor your recovery.

### How effective is the treatment?

Vascular malformations can be hard to treat because blood vessels can grow back over time. Also, the treated blood vessels can grow *feeders*. Feeders are new blood vessels that grow to take the place of the vessels that are collapsed. We cannot predict how quickly feeders may grow. If your symptoms return, we can do the procedure again to collapse any new blood vessels.

### Questions?

Your questions are important. Call your doctor or health care provider if you have questions or concerns.

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