Vascular Malformation Clinic

What is a vascular malformation?

Vascular malformations are abnormal clusters of blood vessels that occur during fetal development. These benign (noncancerous) lesions are always present at birth, but may not be visible until weeks or years later. Some vascular malformations, called hemangiomas, grow over a short period of time and others grow in proportion to the growth of the child. Though many vascular malformations do not require aggressive interventions, those that interfere with important bodily functions, such as seeing, hearing, feeding and breathing, must be addressed quickly.

Are there different types of vascular malformations?

Yes. There are several subtypes of vascular malformations.

- **Venous malformations**
  These are made of either superficial or deep veins that are abnormally formed and dilated. They are the most common type of vascular malformation.

- **Arteriovenous malformations**
  These vascular anomalies occur in arteries connected directly to veins without any capillaries in between. They are more stressful on the heart because of the rapid shunting of blood from arteries to veins.

- **Combined vascular malformations**
  A combined vascular malformation involves two or more types of vessel abnormalities. Capillary, venous, lymphatic or arteriovenous lesions may be combined to create combined vascular malformations. These typically occur on the limbs but can involve any part of the body and are accompanied

by overgrowth of soft tissues and bones. There are many syndromes associated with complex combined vascular malformations.

- **Hemangiomas (capillary malformations)**
  These are commonly called strawberry hemangiomas, but are true vascular tumors. Hemangiomas undergo rapid growth in the months after discovery and then get progressively smaller. The majority of this type of hemangioma disappears completely by 10 years of age and most do not require treatment.

- **Capillary and venular malformations**
  These vascular malformations include portwine stains, which are flat, sharply defined purple stains of the skin, as well as capillary malformations without fast-growing potential. Portwine stains are most commonly seen in the head and neck region of the body, but can be anywhere and in more than one place on the body. Over time the vessels often grow and thicken, causing the color to darken and the skin to have a lumpy appearance. This growth varies greatly and may not be visible until age 60. Capillary malformations include birthmarks on the back of the neck, sometimes called stork bites, and birthmarks overlying the eyelids, sometimes called angel's kisses. These pale pink vascular lesions may appear anywhere on the body and often fade significantly early in life.

- **Lymphatic malformations**
  These sponge-like collections of abnormal growths that contain clear fluid. Fluid is normally transported through a series of vessels into the venous system, but with a lymphatic malformation this transfer is slowed. The excess fluid results in a swelling of the affected area. Lymphatic malformations are most

2-3147

commonly seen in the neck and armpit, but can involve any area of the body. A complex grouping of abnormal lymphatic vessels is called call a lymphangioma.

What are the symptoms of vascular malformations?

Symptoms of vascular malformations vary depending on the location in the body. Vascular malformations, with the exception of hemangiomas, may cause pain and a lump under the skin where they are located. There may be an overlying birthmark on the skin. Bleeding or other liquid leaking may occur from skin lesions. Fast-growing hemangiomas can cause obstruction to important functions such as seeing, hearing, feeding and even breathing.

How do I know if I have a vascular malformation?

A physician can often diagnose vascular malformations during a physical examination. Deeper vascular malformations can be identified using an MRI or ultrasound.

What are treatment options for vascular malformations?

Because vascular malformations will return if not removed completely and they eventually go away over time, they only require treatment under certain circumstances. Therapies are unique to the location and size of the malformation, and may include the following:

- Medical therapies, such as corticosteroids, Propranolol or a betablocker, which requires a 24-hour hospital stay.
- Chemotherapy for complicated and unresponsive lesions.
- Surgery/laser therapy for very specific complications of hemangiomas.

Other vascular malformations require interventions very specific to their vessel type. Most often, management involves supportive care such as compression garments, massage and/or hydrotherapy, and close monitoring for musculoskeletal complications over time. Sclerotherapy, injection of an agent to cause collapse and scarring of vessel channels, may be used in some cases for those vascular anomalies that cause significant discomfort and interfere with everyday activities. Surgery, though avoided when able, may also assist in debulking extremely large vascular anomalies. In addition, new therapies are being investigated that show potential in managing complex lesions.

Why is a multidisciplinary team important to treating vascular malformation?

Every patient is unique and requires individualized attention. At Kentucky Children's Hospital, a multidisciplinary team of pediatric specialists, including pediatric surgeons, ophthalmologists, otolaryngologists and plastic surgeons, work together to develop a comprehensive treatment plan to treat your child's vascular malformation.

How do I schedule an appointment?

The UK Vascular Malformation Clinic is available in the Pediatric Hematology and Oncology Clinic. Dr. Sherry Bayliff is available to offer evaluations and second opinions on complex and straightforward cases.

To refer a patient or schedule an appointment, call **859-323-7705**.

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