

Blood clots – small but can be dangerous

I have two friends in Rabun County who have recently lost family members to blood clots, specifically those that go to the lungs and are known as PE or pulmonary embolus. Blood clots, usually in the veins and called “thrombi,” can be very small. They form in specific situations, and normally are useful to help us stop bleeding if we have a laceration or even an internal injury. First, platelets in the blood form a plug, and then a cross-linking of fibrinous material consolidates the clot. Once the clot has done its job, the body dissolves it, and things return to normal.

There is a law called “Virchow’s Triad” that explains three conditions necessary for clots to form and grow. One is injury to the inside of a vein or other blood vessel. Another is interference or restriction of normal smooth blood flow. The third is that your blood is “thick,” or “hypercoagulable.” All of these conditions are not necessary for clots to form, but all three of them greatly increase the odds of a clot occurring somewhere in a vessel. Most of the time you may not realize or have any symptoms (such as leg pain and swelling), but it can cause big problems or even be fatal.

Occasionally, a clot or “thrombus” can occur in a normal vessel. They usually form in the deep veins of the calf, and usually after a period of inactivity - such as a long plane or car ride, or when you are immobile after surgery, a hospital stay, or illness. This is because you have not been using your calf muscles to “pump” the blood on to the heart. Sometimes, these clots will grow and extend up the vein, and a portion may break off, known as an “embolus,” and travel to the right heart which will then pump it to the lung where it can cause great damage and even death. This condition is known as a pulmonary embolus, and is serious at its least, and life threatening at its worst.

When we know about clots, we treat them by thinning the blood, which prevents further growth, until the body can dissolve them. But a pulmonary embolus, which can cause death in seconds, may not be treatable. Our best strategy is prevention. We do this by blood thinners, compression stockings which “pump” the calf muscles, and also by getting you up early and often to walk when in the hospital. This is also why you should take frequent walk breaks during a long car trip, or get up and walk on an airplane – or at least “pump” your feet to use your calf muscles.

A good takeaway lesson is if you ever have surgery or are in the hospital – you have every right to ask your care team an important question - “What are you doing to prevent blood clots?”