**Beware brain aneurysms**

But new treatment can improve chances of survival  Interviewed by Chelan David

The UCLA Medical Center lays claim to pioneering the way that brain aneurysms are treated. Developed by a former faculty member about 15 years ago, the Guglielmi Detachable Coil (GDC coil) is now a standard alternative or supplement to neurosurgery for treating brain aneurysms.

“Coils have dramatically altered the landscape for treating aneurysms,” says Dr. Gary Duckwiler, professor of interventional neuroradiology at UCLA Medical Center. “In the United States, we now have about 50 percent of the aneurysms being treated by coiling, whereas this treatment didn’t even exist before 1990.”

*Smart Business* spoke with Duckwiler about the risk factors associated with brain aneurysms, how they are treated and what some of the advantages of using GDC coils are.

What are some of the risk factors associated with brain aneurysms?

There are some hereditary associations with aneurysms, but for the vast majority there is no significant family history. If you do have a history in your family of two close relatives having an aneurysm, then we recommend screening for aneurysms, because you definitely have an increased risk. There is a possibility that the creation and rupture of an aneurysm may be associated with smoking and high blood pressure. If you can stop smoking and control blood pressure, it may reduce your risk.

When a brain aneurysm ruptures, what are some of the physical signs?

People typically describe the abrupt onset of a very severe headache. Typically, on a scale of 0 to 10, they describe it as a 15. It is often described as a thunderclap headache: fine one second and the next second it is blinding. Even if the headache is not as severe as that — in other words, a minor hemorrhage — people typically describe it as something that they’ve never felt before. Sometimes with a severe hemorrhage there may be an associated loss of consciousness.

What is the primary focus of treatment when an aneurysm occurs?

First, we need to stabilize the patient, so it’s a 911 call. Once the patient is stabilized from a medical standpoint, we address the treatment of the aneurysm. There is a very high likelihood that the aneurysm will rupture again shortly after the original rupture, so we consider it an emergency and treat the aneurysm as soon as possible using either surgery or the coil technique.

How have advances in coil technology changed the way that aneurysms are treated?

The first detachable coils for use in brain aneurysms were developed here at UCLA in the late ’80s and early ’90s by Dr. Guido Guglielmi. They are small, very thin, platinum coils, so they’re very soft and very dense on the X-rays. In many European countries, aneurysm coiling has replaced surgery with about 70 percent of the aneurysms being treated by coiling and only 30 percent by surgery.

What are some of the advantages of using GDC coils versus surgery?

The coil procedure itself is minimally invasive. We use a needle and do our treatment within the blood vessel system, so all that is left at the end of the procedure is a Band-Aid over the area of the entry, not too dissimilar from an intravenous line. The minimally-invasive nature of this procedure really shortens recovery time.

In addition, some aneurysms lie very deep within the brain and are very difficult to approach surgically. Because we’re navigating within the blood vessel system, we can access nearly any vessel that harbors an aneurysm. That being said, for many aneurysms, surgery is still the preferred method of treatment.

Here at UCLA, we’re lucky enough to have superb services both in neurosurgery and interventional, with the most appropriate option being offered to the patient.

In the future, what other innovations do you expect to see in the treatment of aneurysms?

Since the first detachable coils, many innovations have occurred, such as changes to the shape of the coil. When it’s placed into the catheter, it’s straight. As it comes out of the catheter, it takes its predefined shape. The different diameters and shapes of the coil are utilized to fill the aneurysm to the best degree.

Also, shunts and liquid agents can help in some of the larger, giant aneurysms that we now have difficulty treating.

Finally, we’re involved with research, looking at blood flow in the artery and aneurysm. An aneurysm develops because there is an underlying weakness in the wall and also because the blood flowing against that weak area causes the aneurysm to expand. We are doing research into altering that flow so that the impact on the wall of the aneurysm is diminished, and thus the risk of growth and rupture is reduced.

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