

The 103rd cardiac standstill

Surgeons stop Pennsylvania man's heart to save his life



Brett and Ann Kehrler

Who knows how long it had been there. Perhaps since Brett Kehrler was born 28 years ago.

It probably began as a weak spot on a blood vessel in Brett's brain. As blood pulsed against the weak spot, the vessel walls grew thinner and thinner. Over the years, the weak spot became a blood-filled, balloon-shaped bulge on the vessel wall.

Brett didn't know about the bulge deep in his brain. He didn't know that his frequent headaches were the calling card of a dangerous cerebral aneurysm.

"I've had headaches as long as I can remember," the Pennsylvania man says. "My mom gets them, so I just figured it was genetic."

In 2005, throbbing headaches became a daily occurrence, so in May, Brett consulted a physician. The doctor ordered an MRI. That's when Brett learned that he had a basilar tip aneurysm. The giant aneurysm was located on a major artery at the base of his skull. If it ruptured, odds were high that Brett would die.

A time bomb ticking inside his head

The size and location of the aneurysm made it very difficult to treat, Brett was told. Aneurysms in difficult-to-reach areas of the brain are often treated with an endovascular procedure. The neurosurgeon threads a catheter into an artery in the groin and up through the vascular system to the vessel where the aneurysm is located. The neurosurgeon then maneuvers tiny platinum coils—shaped much like miniature slinkies—through the catheter up into the aneurysm, blocking off the blood flow into the aneurysm.

But, the neck of this particular aneurysm was too big to be sealed off with coils. The only way to correct the aneurysm was to open up the skull and use a clip to seal off its neck. But reaching the aneurysm and operating on it without causing a rupture would be next to impossible, his neurosurgeon said.

Brett felt like a time bomb was ticking inside his head and he had no way to disarm it. He decided to get a second opinion.

A local neurosurgeon recommended three neurosurgeons. One was Robert Spetzler, MD, at Barrow. Brett sent copies of his MRI to the three neurosurgeons. The first to respond was Dr. Spetzler.

Funding from Barrow Neurological Foundation supports ongoing research into the cardiac standstill procedure.

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Robert Spetzler, MD



“I was amazed,” says Brett. “I thought, This guy is world famous and he’s calling me.”

On July 4, Brett flew to Phoenix for a consultation with Dr. Spetzler. “He told me he took one look at the films and knew what he needed to do,” Brett says. What he needed to do was a hypothermic circulatory arrest, often called a cardiac standstill.

What the doctor ordered—a cardiac standstill

A cardiac standstill is a complex surgery involving three teams of physicians—neurosurgery, cardiovascular and anesthesiology teams. The procedure enables neurosurgeons to operate on otherwise inoperable aneurysms by eliminating blood flow in the body.

This is accomplished by gradually cooling the blood—and thus the body—to 15 degrees centigrade or lower and then stopping the heart and draining the blood from the body. At such low temperatures, the brain and other organs can survive without harm for as long as 60 minutes—enough time to clip the aneurysm. The patient is in a kind of suspended animation—without heartbeat, breath or brain waves.

Once the blood is drained from the body, the aneurysm deflates like a pricked balloon, and the neurosurgeon can safely place a titanium clip across the neck of the aneurysm. The clip stops blood flow into the aneurysm while leaving the blood vessel intact.

Brett was scared, but Dr. Spetzler’s confidence and experience reassured him. “Dr. Spetzler helped to pioneer the cardiac standstill,” Brett says. “Nobody wants to go through that, but I knew I had to do it.”

Brett remembers the time leading up to surgery. He

remembers saying goodbye to his family, repeating a Bible verse and “getting real tired.”

A contingent of neurosurgeons from around the world watched the nine-hour surgery. The aneurysm’s size and complexity made it a challenging case.

“His youth and general good health contributed to the excellent result,” says Dr. Spetzler. “Having operated on thousands of aneurysms, I am still awed by the living brain and what it contains—the life, the values, the loves, the being of an individual.

“It remains wondrous to me that we can actually turn off the blood flow, pulse and respiration in order to perform an incredibly complex neurosurgical procedure, reverse the process and have a viable patient. Brett is fortunate that the technology has matured to such a level, giving him a new lease on life.”

Brett was Dr. Spetzler’s 103rd cardiac standstill patient. Dr. Spetzler has performed more cardiac standstills than any other neurosurgeon in the world. Barrow scientists and surgeons began conducting research to refine the operation in the 1980s and continue to improve the procedure today.

Brett’s new lease on life

Brett has returned home to Montoursville, Pennsylvania. A month after the operation, he was still experiencing some double vision and headaches but feeling better every day. He and his fiancée, Ann Gaida, were planning an October 1 wedding.

“I’m looking forward to getting married, maybe having some children, going back to work,” he says. “The simple things in life—that’s what’s important.” ■



A film crew from the Discovery Health Channel covered Brett Kehr’s odyssey, including his surgery at Barrow and his wedding in early October. The network is producing a show about hypothermia that is scheduled to air in the United Kingdom this spring and possibly in the US this summer. The show will include interviews with Robert Spetzler, MD. Stay tuned for more information in a future *Barrow*.