

Minimally invasive minimize surgery can potentially reduce stroke risk

Treating Abnormal Heart Rhythm

A revolutionary type of surgery can correct atrial fibrillation (AF), a common form of heart rhythm abnormality and a major cause of stroke. Doug Baldwin, MD, of Upper Michigan Cardiovascular Associates, PC, now performs the procedure, called the minimize, at Marquette General Hospital, offering new hope to AF patients for whom no other reasonable cure exists.

Under the direction of Dr. Baldwin, a surgical team can electrically isolate the parts of the heart responsible for causing AF, restore normal sinus rhythm, and remove the left atrial appendage via a minimally invasive approach. “We are excited about offering the minimize procedure to residents of the Upper Peninsula, as this is a minimally invasive procedure that can permanently eliminate AF,” says Dr. Baldwin. “Given how many patients suffer from atrial fibrillation, this treatment has the potential to help a large number of people, returning them to a normal rhythm and significantly reducing their risk of stroke.”

Serious Consequences

According to the American Heart Association, approximately 2.2 million people in the United States experience AF and more than 300,000 new cases are diagnosed each year. The condition carries serious consequences. AF increases the risk of stroke fivefold and is a major contributor to the development of congestive heart failure, as well as more serious, life-threatening arrhythmias.

AF is an irregular heart rhythm that interferes with the heart’s ability to pump blood. Abnormal electrical signals begin at the top of the heart and travel down the muscle, causing the atria, or upper chambers, to contract erratically. As a result, blood pools in the atria and forms clots that can travel to the brain and cause stroke. AF is the most common form of arrhythmia, an irregularity in the normal rhythm of the heartbeat.

AF is now most often treated with anticoagulant drugs, which do not change the basic problem of the abnormal heartbeat, but are instead used to prevent the formation of blood clots. These clots, which form when blood stagnates and pools in the poorly functioning atria, account for the high risk of stroke in patients with AF. Lifelong anticoagulant therapy is necessary, but these drugs increase the risk of bleeding and require frequent blood tests to ensure that the level of medication is in the right range. In addition, medications used to treat AF and regulate both heart rate and control rhythm have significant side effects, as well as toxicities, which are sometimes poorly tolerated.

Using Radiofrequency Technology

The minimize procedure involves the use of thoracoscopy, whereby a small fiber optic camera is inserted into the chest and instruments specially designed for the procedure are inserted via small ports or keyhole incisions. The surgeon uses radiofrequency technology to destroy a small amount of tissue in the area where the irregular impulse starts. The damaged tissue can no longer conduct electrical impulses, interrupting the transmission of the abnormal signal and allowing the rest of the chamber to resume beating normally.

In addition, the left atrial appendage, a finger-like structure where clots form, is removed. This step significantly reduces the stroke risk faced by patients on a daily basis. Experience to date indicates that minimize surgery eliminates AF in more than 85% of patients who undergo the procedure, and they have remained AF-free over several years.

Other treatments, including catheter-based procedures and other more invasive forms of surgery, are available to correct the abnormal rhythm of AF. But with the minimally invasive minimize procedure, patients can return to normal activity more quickly and note less pain than with the traditional approach. Hospital stays are usually two to three days compared to seven or more with conventional surgery.

Upper Michigan Cardiovascular Associates and Marquette General Hospital's Upper Michigan Heart Institute continuously strive to bring the latest technology, procedures, and services to the people of the Upper Peninsula.

For further information about the minimize procedure, call Dr. Baldwin at Upper Michigan Cardiovascular Associates at (906) 225-3870 or Marquette General Hospital's Upper Michigan Heart Institute at (906) 225-4942 or (888) 644-4787.