



New Atrial Fibrillation Treatment Device



As the first hospital in Illinois, the Loyola University Medical Center offers a new high-tech catheter device able to improve outcomes of patients treated for atrial fibrillation, the most common irregular heartbeat.

The treatment, entitled catheter ablation, involves burning selected spots of tissue inside the heart with the tip of a catheter, which eliminates the sources of errant electrical signals that are triggering the atrial fibrillation.

Having just received US Food and Drug Administration approval, the ThermoCool® SmartTouch® catheter device indicates the precise direction of the catheter and how intense it is pushing against the heart wall via a graphically displayed a 3-D mapping and navigation system.

Loyola participated in a pivotal, multicenter clinical trial of the pressure-sensing catheter under the principal guidance of one of the nation's leading researchers in treating atrial fibrillation, David Wilber, MD, director of Loyola's Division of Cardiology and Section of Clinical Electrophysiology.

In atrial fibrillation, also known as a-fib, electrical signals that regulate the heartbeat become erratic, causing the upper chambers of the heart quiver instead of beating regularly. Not all the blood gets pumped out, so clots can form, potentially leading to strokes and heart failure.

More than 2 million Americans suffer from this condition, with about 160,000 new cases diagnosed each year and the number rising as a consequence of the aging population and the obesity epidemic.

Heart palpitations, chest pain, fatigue, dizziness, shortness of breath, lightheadedness and fainting make up most of the A-fib symptoms. Wilber described these patients as disabled, lacking energy, being unable to work and generally having a very poor quality of life.

Though able to sustain a regular heart rhythm, medications can cause unacceptable side effects and even prove to be inefficient. Alternative treatments include surgery or catheter ablation, a relatively new treatment in which an electrophysiologist inserts a catheter (thin flexible tube) in a groin artery and guides it through blood vessels to the heart. The tip of the catheter delivers radiofrequency energy, which heats and destroys the tissue that is sending out erratic electrical signals.

The challenge is to press the catheter firmly enough against the wall of the heart so that sufficient tissue is destroyed, without pushing so hard that the catheter punches a hole in the heart. This requires a very fine balance that is difficult to achieve, even for an experienced physician.

The revolutionary new device boasts a sensor in the tip of the catheter, which enables direct measurement of both the amount of contact force and the angle in which the force is being applied to the heart wall.

Wilber confirmed the pressure-sensing catheter's ability to improve patient outcomes and the ablation treatments' durability.

Loyola serves as a major regional and national referral center for the treatment of complex heart rhythm disorders, offering treatment options often unavailable elsewhere.

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