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Bridgeport Hospital is national training site for innovative a-fib treatment

The Joel E. Smilow Heart Institute at Bridgeport Hospital has become a national training site for convergent hybrid ablation to treat atrial fibrillation (a-fib). A-fib is the most common type of heart rhythm disorder, affecting more than two million people in the United States.

Chief of Cardiothoracic Surgery M. Clive Robinson, MD and cardiac electrophysiologist Murali Chiravuri, MD, PhD, performed New England's first hybrid ablation at the hospital in June 2011. The innovative treatment combines the best approaches of minimally invasive surgery and catheter ablation, resulting in a more comprehensive procedure and a better outcome for the patient.

During hybrid ablation, a cardiac surgeon and electrophysiologist (cardiologist who specializes in heart rhythm care) work side-by-side—the surgeon from the outside the heart inward and the electrophysiologist from inside of the heart outward. Each physician uses a device that emits radiofrequency energy to create a pattern of scar tissue (ablation bands) on the heart. This scar tissue interrupts the faulty electrical signals in the heart that cause a-fib.

During two dozen subsequent hybrid ablations since the first one at the hospital, Dr. Robinson has enhanced the surgical portion of the procedure, making it even more effective. In earlier versions of the surgery, either a single scar line was created on the exterior of the heart (specifically the posterior wall of the left atrium) or in a box-shaped pattern. In many instances, however, the faulty electrical signals were able to find their way back through the heart.

"In the modified approach, multiple overlapping and contiguous ablation bands—as many as 30—are created between the right and left pulmonary veins and across the vertical height of the atrium," Dr. Robinson explains. "These bands comprehensively target and disrupt the a-fib mechanisms in that area of the heart."

Interestingly, Dr. Robinson notes that the pattern of ablation bands used in his modified procedure is based on later versions of the open surgical approach to treating a-fib known as Cox-Maze III and IV, which date back to the late 1990s and worked effectively on the posterior wall of the atrium.

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Because of the thoroughness of Dr. Robinson's approach, fewer ablation bands need to be created from the inside of the heart. This results in less damage to healthy tissue, including the nearby esophagus. In addition, with less char residue left behind, there is also less risk of stroke from blood clots.

"Convergent hybrid ablation underscores the benefits of cardiac surgeons and cardiologists working collaboratively to provide the best results for patients," Dr. Robinson says. "Hopefully, it will inspire more multidisciplinary approaches to care."

Bridgeport Hospital has been a leader in advanced cardiac care for more than 50 years. The hospital performed the first diagnostic cardiac catheterization in Fairfield County in 1961, the county's first open-heart surgery in 1963 and the county's first balloon angioplasty in 1981.

Last November, the Heart Institute was renamed for Joel E. Smilow following receipt of a $2 million gift from the well-known Southport philanthropist.

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