Vet College offers cure for dogs' racing hearts

Cornell University

Taking advantage of a feat that synthesized human and veterinary medical procedures and united cardiologists from two continents and four medical institutions, a 2-year-old Brittany spaniel has a new outlook on life, renewed energy and an insatiable appetite.

Jay, the spaniel, arrived at Cornell's Hospital for Animals (CUHA) as an emergency patient with a heart rate of 380 beats per minute. His medical history revealed an ongoing battle with cardiac arrhythmias (abnormal heart beats) and symptoms that suggested congestive heart failure. Freddy Brewer, a cardiology veterinary resident, slowed Jay's heart rate to a normal sinus rhythm with medication and released him the following morning with a note of caution: Jay's type of arrhythmia could be difficult to control. A week later, Jay returned to Cornell.

"The medical treatment was going to have limited success in treating this arrhythmia, known as a bypass-tract tachycardia," said N. Sydney Moise, chief of cardiology at CUHA. "We suggested to the owners a procedure that could potentially cure the life-threatening arrhythmia."

In the proposed procedure, called an ablation, which had never been done at CUHA, the cardiologist would use a special catheter to deliver energy that creates controlled lesions on the heart and ultimately focal scar tissue. This eliminates the abnormal pathway of electrical conduction and permits only the normal conduction. The specific abnormal pathway that caused Jay's heart to beat too fast had never been successfully ablated before.

Jay's only chance, according to Moise, was a team approach -- an all-hands-on-deck spirit -- and equipment that was pieced together and borrowed from a Katrina-flooded hospital, Weill Cornell Medical College and corporate partners.

"We divided the labor, with each of us having a designated role," said Moise, indicating that this is now a jointly offered service at Cornell and Louisiana State University (LSU) , the only university veterinary hospitals to provide the service. "None of us could have done it alone."

The team included:

- Dr. Pramod Deshmukh, a cardiologist who practices in Sayre, Pa., and has spent his career using insights from the study of dogs to heal humans. Deshmukh assisted during the electrophysiologic testing and ablation;
- Roberto Santilli, a veterinary cardiologist in Samarate, Varese, Italy, with experience performing this procedure in dogs in Europe, who mapped Jay's heart with a catheter, millimeter by millimeter, to find the area that needed

to be ablated;
- Romain Pariaut of LSU's School of Veterinary Medicine and a former veterinary resident in cardiology at Cornell, who provided LSU equipment and operated the stimulator to test the heart during the procedure;
- Moise, who orchestrated the team effort and guided Brewer in the catheter placement during the procedure;
- Bruce Kornreich, a Cornell veterinary cardiologist and electrophysiologist, who worked with Jason Cole from BioPac to ensure that the diagnostic intracardiac recordings were pristine during the procedure;
- Robin Gleed and Monique Pare, veterinary anesthesiologists, who kept Jay safely anesthetized and monitored vital signs during the procedure;
- Cornell veterinary cardiology technicians Shari Hemsley and Sarah Miller, who ensured that the details of catheters and supplies were ready at a moment's notice.

Now active and alert, Jay has gained three pounds and his beating heart is no longer racing.

"It takes a lot of energy for a heart to beat as fast as Jay's was," said Moise. "Every morsel of food he ate was going toward that end. Now, when he eats, he's nourishing his body. This is one of the very special procedures we do in that it's novel and curative. Jay came to us as a very young dog. I fully expect that he'll live a long and healthy life."

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