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Penn Hypertensive Dogs
If variety is indeed the spice of life, then the Edwin A. Churchills can properly be described as having a well-garnished life style! While many of us are content to develop one or two major facets of work in our lifetime, the Churchills have played a variety of interests into an amazingly full and productive life, including veterinary medicine, judging of show dogs, breeding a number of different animals, and flying. Dr. Churchill’s professional contributions over the course of his long and productive career include teaching, helping to found a major specialty group for the development of an equine hospital and a large practice, while Mrs. Churchill has combined an avid interest in flying with many other activities including Ed’s practice.

Dr. Churchill’s hospital is located in a clearing on a 135 acre property which is mostly wooded and borders on the beautiful Bohemia River just outside of Chesapeake City, Maryland. The estate is known as Spenrock, which derives from two farms previously owned by Mrs. Churchill (Rock Maple Farm in Massachusetts and Spencers Landing Farm in Centreville, Maryland). Ed located at Spenrock in 1967 and built the hospital in 1969. The one story building contains twelve stalls for hospitalized horses, a surgical suite, and an office. Dr. Churchill is assisted in the practice by Dr. Dan Hawkins, a Texas graduate.

While Dr. Churchill sees all types of equine problems in his practice, a majority of the cases involve diabetes mellitus or problems related to the peripheral vascular system. Since his days at the School of Veterinary Medicine, Ed states that one of his primary interests is in “determining the why of lameness in the horse.” He believes that he can deliver a complete service merely by diagnosing the nature of the lameness but that he must delve into determining the cause. This approach was instilled in Dr. Churchill by Dr. William Lee, who was Professor of Surgery at the Veterinary School during the 1940s.

Hypertension, or high blood pressure as it is commonly called, is a medical problem frequently seen in humans. “In people, high blood pressure causes disruption of blood vessels, peripheral vascular disease, and damage to kidneys, heart, and brain,” said Dr. Lee. Dr. Lee is a Professor of the University of Pennsylvania School of Veterinary Medicine. “In animals we have not seen the extensive damage to organs or the peripheral vascular disease. But hypertension can cause blindness in dogs due to bleeding of the eyes and to retinal detachment.”

VHUP is to take direct pressure measurements. A fine needle, connected to monitoring equipment, is inserted into the femoral artery. This gives us the blood pressure.” In order to do this, the dog has to be trained to lie still. “Usually, when the puppies are about six months old, they are trained enough for us to take pressure readings. It is a quick procedure and it is painless.”

The dog had no other disease and it was concluded that his hypertension was primary. “We studied him and found that the pressure could be reduced through medication. Unfortunately, the disease had progressed too far, and his vision could not be saved.” The dog was donated, and he was the beginning of the Penn Hypertensive Dogs, a colony of animals with spontaneously occurring primary hypertension. A female with a similar condition was located at Michigan State University, and the mating between the pair resulted in seven puppies. A number of these had hypertension. They were bred back to their parents and offspring with hypertension resulted. “The disorder is hereditary, and this may lead to better diagnostic and treatment.”

Dr. Bovee explained that a dog is regarded hypertensive when the systolic pressure is at least 160 mm. Hg and the diastolic pressure at least 120 mm Hg when dogs are untrained. “In the dog, clinical signs will not manifest themselves until the animal is at least six months old,” he said. “Then one begins to see the retinal changes.” He pointed out that if hypertension is diagnosed early enough, the dog can be treated with drugs to avoid excessive damage to the retina and vascular disease.

Hypertension in dogs is poorly understood. Blood pressure is controlled by 20 to 30 different factors. “When people take medication, only a few factors are affected, and some adversely. That’s why many blood pressure medications have undesirable side effects.”

Dr. Bovee’s study, which is supported by funding from NIH, should shed more light on primary hypertension. He feels that the Penn Hypertensive Dogs can contribute much to the knowledge about the disease and that this may lead to better diagnostic and treatment methods for man and dogs.

Dr. Kenneth C. Bovee is the Corinne R. and Henry Bower Professor of Medicine (Nephrology) and Chief, Section of Small Animal Medicine, at the University of Pennsylvania School of Veterinary Medicine.

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