

Three-dimensional echocardiographic morphologic analysis of the mitral valve in Cavalier King Charles Spaniel puppies

Purpose

To monitor the mitral valve structure of Cavalier King Charles Spaniel (CKCS) puppies and to compare the structure of CKCS puppies' mitral valves to puppies of other breeds

Background

Myxomatous mitral valve disease (MMVD), a condition that occurs when the heart's left valve does not close properly, is extremely common in both people and dogs. It affects mostly older dogs, and many will never develop symptoms. For some dogs, though, especially certain breeds like Cavalier King Charles Spaniels, the disease can develop earlier, with the most serious cases leading to congestive heart failure and untimely death.

The disease has a genetic basis, and the age of onset is considered inheritable. Currently, there are no early predictors of the disease. The lack of predictors is a problem for breeding programs that aim to decrease disease prevalence. Understanding the changes of the mitral valve (MV) structure in growing dogs could provide non-invasive early predictors of MMVD, which could change the approach to the screening for the disease.

We hypothesize that the MV structure of CKCSs is determined at birth and does not change significantly during development. We also hypothesize that CKCS puppies have a MV that is structurally different compared to puppies of other breeds.

This study is funded by the Veterinary Memorial Fund.

Eligibility

- Healthy Cavalier King Charles Spaniels
- The study will begin when puppies reach 14 weeks of age (approx. 3-4 months) and will continue until the puppy reaches 62 weeks of age (approx. 15-16 months).
- Owner willingness to comply with study requirements

Exclusion Criteria

- Puppies with cardiac abnormalities or serious health problems
- Puppies whose temperament would require sedation during echo

Study Design

All visits must take place at the Veterinary Teaching Hospital in Blacksburg, VA.

Enrolled puppies will begin the study at 14 weeks of age, and return for recheck exams every 2 months until they reach adulthood (defined as 16 months of age). At each exam, a cardiologist will listen to your dog's heart and three-dimensional echocardiography will be used to acquire cardiac images. Three-dimensional echocardiography uses an ultrasound probe that passes painless over the body. No invasive procedures are performed, and no drugs or sedation is administered. Visits typically take about 1 hour.

Compensation

All study-related exams and echocardiograms are performed at no charge. By mutual agreement, full echo reports and/or heart certifications may be obtained at owner cost, but are not covered as part of the study. Upon completion of all study rechecks, owners will receive a gift card in the amount of \$150 for each dog.

Contact

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