



## Seizures in Cats

Prevalence of idiopathic feline epilepsy has probably been overestimated because of inconsistent use of MRI or postmortem examination (PME) to definitively rule out structural brain disease. Feline hippocampal necrosis (FHN) has been proposed as a possible structural cause of seizures in cats. This retrospective study evaluated the prevalence and clinical course of feline epilepsy of unknown cause (EUC) using MRI and/or PME to rule out structural disease. Records of 81 client-owned cats were examined. All had undergone MRI or PME. Structural brain lesions were detected in 38 cats; significant metabolic or toxic abnormalities were found in 25 cats. FHN was confirmed in 1 cat. Seizure cause remained undefined in 18 cats, suggesting EUC. Of these 18 cats, focal or focal onset seizures were identified in 9 and generalized seizures were reported in the remaining 9. Cats with EUC were more likely to present with focal seizures

than cats with structural, metabolic, or toxic causes of seizures. One-year survival rate of cats with EUC was 73%, compared with 35% for cats with structural epilepsy or toxic/metabolic diseases. Eight cats with EUC achieved seizure remission, which was maintained with ( $n = 5$ ) or without ( $n = 3$ ) antiepileptic drugs. Prevalence of true idiopathic epilepsy in study cats is much lower than previously reported, but long-term prognosis is better than in dogs and humans. A full diagnostic workup with advanced imaging should be performed on all cats with recurring seizures.

### ■ Global Commentary

The use of *idiopathic* when referring to epileptic conditions has been associated with an underlying genetic cause. In dogs, over 40 breeds have a documented genetic cause of epilepsy. In cats, where domestic short-haired crossbreeds are the most common, idiopathic would seem

redundant and/or confusing. This study correctly proposes a shift in the terminology of epileptic cats to adopt the phrase EUC. Based on this study, only 2 of 10 cats with seizures would fulfill the criteria necessary to be labeled in this way, with 8 of 10 cats having an identifiable cause for their seizures. While EUC is less common than in dogs, it seems these cats can have a much better prognosis in terms of lifespan and quality of life; more than 40% go into seizure remission. One subtle message that may get lost in the documentation of the prevalence of EUC is that early and aggressive treatment is essential for successful long-term seizure control.—*Simon Platt, BVMS&S, MRCVS, DACVIM (Neurology), DECVN*

### ■ ■ Source

Clinical characterization of epilepsy of unknown cause in cats. Wahle AM, Brühshchwein A, Matiasek K, et al. *JVIM* 28:182-188, 2014.

## Heat Treatment for Improving Heartworm Testing in Cats

Detection of *Dirofilaria immitis* antigen has traditionally been the most sensitive and specific way to diagnose heartworm disease in dogs. Heartworm disease in cats is harder to diagnose for several reasons: low circulating antigenemia resulting from lower worm numbers, higher likelihood of male-only infections, and stunted development of *D immitis* adults in an aberrant host. Pretreatment of samples with heat and/or EDTA before testing has been performed in early antigen-based assays for dogs to destroy immune complexes. Antigen-antibody complex formation has been recognized as a cause for poor antigen detection in some canine samples, but elimination of complexes to improve detection of *D immitis* has not been evaluated in cats.

In this study, 6 cats were experimentally infected with third-stage heartworm larvae via SC injection. Infection was confirmed by recovery of adult worms at necropsy or confirmation of histologic lesions (in 1 cat that did not have adult worms). Heat treatment of feline serum before antigen testing resulted in dramatic increase in detection of *D immitis* antigen. Only 1 of 6 samples from cats was antigen positive before heat treatment; 5 of 6 became positive after heat treatment. Antigen blocking resulted in false-negative results from most cats harboring both *D immitis* and circulating antigen in the present study and heat treatment seemed prudent for more accurate testing.

### ■ Commentary

Although the sample size in this study was

small, the data indicate that improved sensitivity of feline heartworm antigen assays by preheating the samples would support more accurate diagnosis of this infection. This must translate into a point-of-care test or otherwise easy application for the general practitioner but can greatly improve feline health management in areas where heartworm disease is overrepresented. It is currently common for practitioners to avoid heartworm testing in cats, as tests are almost always negative and do not justify the expense for the owner.—*Heather Troyer, DVM, DABVP, CVA*

### ■ ■ Source

Heat treatment prior to testing allows detection of antigen of *Dirofilaria immitis* in feline serum. Little SE, Raymond MR, Thomas JE, et al. *PARASITE VECTOR* 7:1, 2014.