

## FOCUS New Findings on Osteoarthritis in Cats

Osteoarthritis (OA), the most common debilitating condition in companion animals, is often underappreciated in cats despite comparatively significant disease. Problems can include decreased daily activity, difficulty jumping, difficulty finding a comfortable resting position, decreased grooming, and decreased playing.

In this pilot study, physical examination findings, computed radiographic findings, and MRI differences between normal cats ( $n = 2$ ) and cats with coxofemoral joint OA ( $n = 4$ ) were compared. Motor activity was assessed using a collar-attached accelerometer-based activity sensor, and gait analysis was quantified using a pressure-sensitive mattress. For OA cats, both osteophytosis and sclerosis were similar on both imaging methods. In one cat, radiography failed to identify OA-associated

lesions found on MRI. Two OA cats also had bone marrow edema-like lesions in the femoral head. Night-time activity and pelvic limb ground reaction forces were both greater in normal cats than in OA cats. Ground reaction forces were positively correlated with mean motor activity and negatively correlated with age. Peak vertical ground reaction force had mild negative correlation with MRI structural scores but not with computed radiographs.

### ■ Commentary

This pilot investigation provided novel data using objective outcome measures not previously described in cats affected by OA. The bone marrow edema-like lesions noted were important findings because, in humans, bone marrow edema lesions are found in disorders such as OA and avascular necrosis and are related to involvement



of subchondral bone in the pathogenesis of OA. In addition, gait analysis and accelerometry offer objective ways to assess treatment trials. Because the technologies described in this work are currently limited to referral and research institutions, future work is warranted.

—Jason Bleedorn DVM, DACVS

### ■ ■ Source

Evaluation of osteoarthritis in cats: Novel information from a pilot study. Guillot M, Moreau M, d'Anjou M-A, et al. *VET SURG* 41:328-335, 2012.

## Feline Cardiomyopathy

Feline cardiomyopathy is any disease of the myocardium associated with cardiac dysfunction. Hypertrophic cardiomyopathy (HCM) is the most common feline cardiac disease, characterized by enlargement of the left ventricular free wall, interventricular septum, or both. Restrictive cardiomyopathy (RCM) is characterized by myocardial stiffness and diastolic dysfunction and comprises about 20% of referred cardiac feline patients. Dilated cardiomyopathy (DCM) involves a severely dilated left ventricular chamber and hypocontractile myocardium and has been historically associated with taurine deficiency. Cats are diagnosed with unclassified cardiomyopathy if echocardiographic findings are not typical of commonly recognized cardiomyopathies.

Heart murmurs are thought to be present in 60% of all cats with cardiomyopathy. Other signs may include gallop sounds,

muffled heart sounds, tachypnea, limb paresis, arrhythmias, arterial hypotension, and ascites. Diagnosis is made through imaging, electrocardiography, and blood pressure measurement. Biomarkers and genetic testing are a consideration for cats at risk for HCM.

Other than treatment for taurine deficiency, no therapies show consistent promise in the prevention or treatment of asymptomatic cardiomyopathy. Prognosis depends on the form of myocardial damage, severity, and rate of progression. Further controlled and blinded studies are needed to ascertain treatment efficacy in cats with cardiomyopathy.

### ■ Commentary

This review described the phenotypic variations of feline cardiomyopathies, their diagnostic features, and the difficulty that can arise in defining a particular car-

diomyopathy in a feline patient as well as how echocardiographic features of different cardiomyopathies can overlap at various stages of the disease process. In addition, current therapeutic strategies are aimed at combating the underlying pathophysiology and clinical presentation instead of focusing on treatment based solely on the type of cardiomyopathy diagnosed. This is an important concept to keep in mind for treating cats with cardiomyopathy, as the disease process will invariably evolve and change through the disease course and treatment needs to be modified and tailored accordingly.

—Amara Estrada, DVM, DACVIM (Cardiology)

### ■ ■ Source

Feline cardiomyopathy. Ferasin L. *IN PRACT* 34:204-213, 2012.

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