

FOCUS ON FELINES

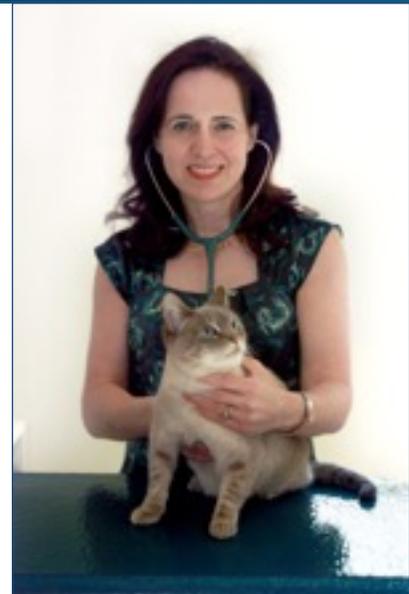
Owners and veterinarians are often faced with a cat that has developed a heart murmur as an unexpected discovery on an apparently healthy pet. Or a senior cat presents that needs an anesthetic procedure. Or a cat has problems breathing and heart disease is suspected. What diagnostics should be recommended in these cases? Dr. Atkinson will share her personal thoughts below as well as summarize key points made from a group of board certified cardiologists who published a reference article that is available online, "Management of incidentally detected heart murmurs in dogs and cats".¹

There are numerous diagnostic tests available to the primary care veterinarian that give valuable information. The first consideration is the animal's species, breed, physical examination findings and age group. Heart murmurs can be classified as pathologic (resulting from a cardiac problem) or nonpathological (associated with a structurally normal heart). A nonpathological murmur may be termed functional if there is a physiologic cause such as anemia, or innocent/flow if no physiologic cause can be identified.

Radiographs are helpful in cats with clinical signs of heart failure to assess if pulmonary edema or pleural fluid is present. They can give some indication of relative cardiac size, but cats can have cardiomyopathy resulting in concentric ventricular hypertrophy and a normal cardiac silhouette on radiographs. Hence the role of echocardiography and biomarkers. Echocardiography is the only modality that can definitively distinguish a pathological from a nonpathological cause in the cat. Also, cats with heart disease do not consistently display a heart murmur or abnormalities on auscultation.

Dr. Atkinson recommends that adult/senior cats presenting with respiratory distress or that have developed a new murmur could have an NT-proBNP performed during the initial diagnostics with the primary care veterinarian or the patient could be referred for an echocardiogram immediately without this information. If an echocardiogram is initially declined, measurement of the NT-proBNP may be useful to strengthen the recommendation for an echocardiogram if the NT-proBNP is elevated. Normal NT-proBNP is more suggestive of mild cardiac disease or a nonpathologic cause. False positives and negatives are possible.

1. Cote E, Edwards NJ, Ettinger SJ et al. Management of incidentally detected heart murmurs in dogs and cats. *J Am Vet Med Assoc* 2015;246:1076-1088.



Facts about Cardiac Disease in cats:

- Cats can have severe heart disease without any murmur, gallop or arrhythmia auscultated
- Cats can have murmurs without heart disease
- Any adult cat with pleural effusion has heart disease until proven otherwise
- Thoracic radiographs are useful for checking for pleural fluid or pulmonary edema in cats with clinical signs. They are lousy at detecting left atrial size and predicting occult disease severity compared the utility of radiographs in small breed dogs

Dr. Atkinson's Diagnostic Recommendations

Asymptomatic kittens with a heart murmur

- Functional murmurs are common in young cats but these murmurs are often indistinguishable from pathologic murmurs
- Any systolic murmurs louder than grade II/VI or any continuous murmurs warrant an echocardiogram by a board certified cardiologist

The asymptomatic mature/senior cat: ideal pre-anesthetic screening

- Thoracic radiographs to rule-out active heart failure and to serve as baseline in case of respiratory issues following anesthesia
- Senior blood panel (with thyroid level if > 7 years) and NT-proBNP (potential for false positives when testing in a low prevalence population)

Mature/senior cat with a heart murmur or gallop, or presenting in respiratory distress

- Thoracic radiographs to detect active heart failure or cause of respiratory disease
- Blood pressure to rule-out systemic hypertension
- Senior panel (with thyroid level if > 7 years)
- Echocardiogram (if initially declined, consider NT-proBNP to guide diagnostic route)

If an arrhythmia is auscultated, add a 6 lead ECG to the above recommendations

We see patients at the following locations:

Animal Dental Clinic
15800 SW Upper Boones Ferry Rd, Suite 300
Lake Oswego, OR 97035



**Tanasbourne Veterinary
Emergency**
2338 NW Amberbrook Dr
Beaverton, OR 97006