"Pearls" of Veterinary Medicine

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## AT A GLANCE



## CARDIOLOGY – FELINE MEDICINE

### Heart Murmurs in Cats

Several studies aimed to determine the prevalence of heart murmurs in cats to identify the causes and echocardiographic origin of these murmurs.

**Prevalence and Causes**

In a study involving 780 rehomed cats, heart murmurs were detected in 41% of all cats with about 15% having HCM (Hypertrophic cardiomyopathy), 0.5% had congenital disorders and 0.1% had other cardiomyopathies; the remaining 25.5% of murmurs were considered functional/benign.

**The primary cause of murmurs was found to be Systolic Anterior Motion of the Mitral Valve (SAM), occurring in 39% of the cases.**

SAM is found in 80% of cats with HCM and a heart murmur, but SAM is also found in other forms of cardiomyopathy and mitral valve dysplasia. On the other hand, 56% of SAM cases do not have structural abnormalities.

The second most common cause of murmurs was Dynamic right ventricular outflow tract obstruction (DRVOTO) causing 32% of murmurs but **DRVOTO is likely an incidental finding**. **Pressing a stethoscope (or ultrasound probe) against the right chest wall can compress the mid right ventricular lumen and iatrogenically cause DRVOTO.** These iatrogenic murmurs are soft, so loud murmurs should be considered pathologic unless echo proves otherwise.

The third cause of murmurs were flow or innocent murmurs, found in 7%.

In one study, over half (57%) of cats with murmurs had no structural cardiac abnormalities, a finding consistent with another study where approximately **half of feline heart murmurs were benign**.

**Describing Murmurs**

Described by timing (systolic, diastolic, continuous).

Loudness [using Levine grading scale1-6/6 or Rishniw scale of soft (1-2/6), moderate (3/6), loud (4/6) or palpable (5-6/6)].

Point of maximal intensity (PMI) (left or right parasternal, sternal, left base, left apex).

Variability [intermittent or dynamic (varying intensity)].

SCAN ME

**Frequency of Findings**

Soft murmur (1-2/6) 57%, moderate (3/6), 29%,

loud (4/6), 13%, and palpable (5-6/6) 2%

PMI: left parasternal 37%, right parasternal 22%, left base 2%, left apex 0.8%

**Significance of Murmurs**

Severe congenital conditions: All palpable, continuous, diastolic, and to-and-fro murmurs were linked to significant congenital cardiac disease. **A palpable thrill is rarely found in cats with HCM**.

**Gallop sounds are more likely to occur in cats with HCM and are rare in healthy cats. Moderate to loud murmurs are more common in cats with HCM than in normal cats.**

Soft/moderate systolic murmurs and intermittent murmurs were less likely to indicate cardiac abnormalities, but do not rule out serious cardiac disease.

**Increasing murmur intensity does not necessarily correlate with worsening disease**.

Intermittent murmurs may be due to increased sympathetic tone due to stress/excitement or may be an inducible/iatrogenic murmur.



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