

FOCUS

The Heart of the Matter



In cats, valentine-shaped hearts—those with focal enlargement of the heart base—are commonly attributed to biatrial enlargement and/or hypertrophic cardiomyopathy (HCM). This study sought

to establish an association between a valentine heart shape observed in a ventrodorsal thoracic radiograph with the presence of singular or combined cardiac chamber enlargement as well as presence and type of cardiomyopathy in cats. The records of 41 cats with either a valentine-shaped heart or biatrial enlargement described on radiographs were reviewed, with the confirmation of chamber enlargement or specific cardiac disease determined by echocardiogram within 7 days of thoracic radiography. A valentine-shaped heart was strongly associated with cardiac disease (38/41). Of cats

with a valentine-shaped heart, 83% (34/41) had some type of cardiomyopathy. However, there was a low association with a specific cardiomyopathy such as hypertrophic (13/34), restrictive (7/34), or unclassified (14/34). The valentine heart shape was commonly seen in diseases causing left atrial enlargement or a combination of left atrial and left ventricular enlargement (20/41). The frequency of biatrial enlargement alone in cats with a valentine heart shape was low (2/41); however, the combination of biatrial enlargement with left and/or right ventricular enlargement occurred

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Brief Summary: Before using please consult the product insert, a summary of which follows.

CAUTION: Federal law restricts this drug to use by or on the order of a licensed veterinarian.

INDICATIONS: For the relief of pain and inflammation associated with osteoarthritis and for the control of postoperative pain associated with soft tissue and orthopedic surgeries in dogs.

CONTRAINDICATIONS: Carprofen should not be used in dogs exhibiting previous hypersensitivity to carprofen.

PRECAUTIONS: As a class, cyclooxygenase inhibitory NSAIDs may be associated with gastrointestinal, renal and hepatic toxicity.

The most frequently reported effects have been gastrointestinal signs. Events involving suspected renal, hematologic, neurologic, dermatologic, and hepatic effects have also been reported. Patients at greatest risk for renal toxicity are those that are dehydrated, on concomitant diuretic therapy, or those with renal, cardiovascular, and/or hepatic dysfunction.

Carprieve® Caplets is not recommended for use in dogs with bleeding disorders (e.g. Von Willebrand's disease), as safety has not been established in dogs with these disorders. The safe use of Carprive® Caplets in animals less than 6 weeks of age, pregnant dogs, dogs used for breeding purposes, or in lactating bitches has not been established.

WARNINGS:

Keep out of reach of children. Not for human use. Consult a physician in cases of accidental ingestion by humans. For use in dogs only. Do not use in cats. All dogs should undergo a thorough history and physical examination before initiation of NSAID therapy. Appropriate laboratory tests to establish hematological and serum biochemical baseline data prior to, and periodically during, administration

of any NSAID should be considered. **Owners should be advised to observe for signs of potential drug toxicity (see Information for Dog Owners, Adverse Reactions, Animal Safety and Post-Approval Experience).**

ADVERSE REACTIONS:

During investigational studies of osteoarthritis with twice daily administration of 1 mg/lb, no clinically significant adverse reactions were reported.

Post-Approval Experience:

The categories of adverse reactions are listed in decreasing order of frequency by body system.

Gastrointestinal: Vomiting, diarrhea, constipation, inappetence, melena, hematemesis, gastrointestinal ulceration, gastrointestinal bleeding, pancreatitis.

Hepatic: Inappetence, vomiting, jaundice, acute hepatic toxicity, hepatic enzyme elevation, abnormal liver function test(s), hyperbilirubinemia, bilirubinuria, hypoalbuminemia. Approximately one-fourth of hepatic reports were in Labrador Retrievers.

Neurologic: Ataxia, paresis, paralysis, seizures, vestibular signs, disorientation.

Urinary: Hematuria, polyuria, polydipsia, urinary incontinence, urinary tract infection, azotemia, acute renal failure, tubular abnormalities including acute tubular necrosis, renal tubular acidosis, glucosuria.

Behavioral: Sedation, lethargy, hyperactivity, restlessness, aggressiveness.

Hematologic: Immune-mediated hemolytic anemia, immune-mediated thrombocytopenia, blood loss anemia, epistaxis.

Dermatologic: Pruritus, increased shedding, alopecia, pyotraumatic moist dermatitis (hot spots), necrotizing panniculitis/vasculitis, ventral ecchymosis.

Immunologic or hypersensitivity: Facial swelling, hives, erythema.

In rare situations, death has been associated with some of the adverse reactions listed above. To report a suspected adverse reaction call 1-866-591-5777.

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in 34% of cats. A valentine heart shape may not be specific for HCM or biatrial enlargement but is a strong predictor for feline cardiomyopathy in general.

Global Commentary

Diagnosing heart disease in cats can be difficult without echocardiography, but perhaps a more important priority is to identify cats at increased risk for congestive heart failure or aortic thromboembolism. Both this study and an additional study¹ report a strong association between a valentine heart shape and a key predictor of

cardiac death—left atrial enlargement suggesting that radiography could be used to identify high-risk cats.² A valentine-shaped heart was not specific for cardiomyopathy with left atrial enlargement, so additional tests (eg, measuring plasma biomarker NT-proBNP) should be considered in suspected high-risk cats.³ Echocardiographic assessment of left atrial size remains the gold standard test for evaluating prognosis in cats with heart disease.—*Virginia Luis Fuentes, MA, VetMB, PhD, CertVR, DVC, MRCVS, DACVIM (Cardiology), DECVIM-CA (Cardiology)*

References

1. Oura TJ, Young AN, Keene BW, Robertson ID, Jennings DE, Thrall DE. A valentine-shaped cardiac silhouette in feline thoracic radiographs is primarily due to left atrial enlargement. *Vet Radiol Ultrasound*. 2015;56(3):245-250.
2. Payne JR, Borgeat K, Connolly DJ, et al. Prognostic indicators in cats with hypertrophic cardiomyopathy. *JVIM*. 2013;27(6):1427-1436.
3. Borgeat K, Sherwood K, Payne JR, Luis Fuentes V, Connolly DJ. Plasma cardiac troponin concentration and cardiac death in cats with hypertrophic cardiomyopathy. *JVIM*. 2014;28(6):1731-1737.

Source

Winter MD, Giglio RF, Berry CR, Reese DJ, Maisenbacher HW, Hernandez JA. Associations between 'valentine' heart shape, atrial enlargement and cardiomyopathy in cats. *J Feline Med Surg*. 2015;17(6):447-452.

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