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Canine Heart Failure - Early Diagnosis, Prompt Treatment

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CLINICAL NOTES:
Canine heart failure—early diagnosis, prompt treatment

Early detection of clinical signs by the pet owner and selection of proper diagnostics and accurate interpretation of results by the veterinarian are important prerequisites for the treatment of heart failure in dogs. A commonly cited clinical definition of heart failure is exertional clinical signs caused by underlying heart disease.¹ Many cases of early congestive heart failure can be identified by owners if they have been trained by the veterinary staff to routinely monitor their pet’s respiratory rate and effort. Early detection leads to prompt treatment, which in turn optimizes the time during which the pet can enjoy a healthier life.

In dogs, mitral valve disease (MVD) and dilated cardiomyopathy (DCM) are the most common causes of heart failure, with prevalence being very high in certain breeds (90% for MVD in older Cavalier King Charles spaniels,² 33%-50% for DCM in Doberman pinschers³). Heart failure typically manifests in signs of either congestion (“backward heart failure”) or low cardiac output (“forward heart failure”).

DIAGNOSIS OF HEART FAILURE
Diagnosis of heart failure involves careful history taking, physical examination, and in cases of left-sided failure, thoracic radiography (see Radiographic Signs of Left-Sided Heart Failure). Echocardiography, electrocardiography, and blood pressure measurement add to the diagnostic database but often are not required to achieve a working diagnosis and to formulate an initial treatment plan.

In dogs with underlying MVD, the history typically involves a chronic murmur, increased respiratory rate and effort, coughing, poor appetite, and/or activity intolerance. Sometimes the signs are very subtle, but in the typical case, they are both persistent and progressive. In contrast, in cases of primary airway or respiratory disease, signs are often intermittent and absent in the resting or sleeping pet. Dogs with DCM show these signs as well but have a higher incidence of low-output signs, such as exercise intolerance, weakness, or syncopal episodes.

PHYSICAL EXAMINATION AND DIAGNOSTICS
In dogs with MVD or DCM, physical examination typically reveals a systolic heart murmur over the left apex. Heart rate is usually elevated and arrhythmias may be detected. Ausculation of the lung fields reveals increased bronchovesicular sounds or in some cases crackles. Pulmonary crackles are not specific to congestive heart failure; they are often detected in cases of primary lower airway or parenchymal disease.

In dogs with MVD, femoral pulse quality is usually normal, while those with DCM may have weak or thready pulses. In cases of tricuspid valve disease, advanced mitral valve disease with pulmonary hypertension, atrial fibrillation, or DCM, jugular vein distention or pulses can be detected.

When left-sided heart failure is suspected (pulmonary edema or pleural effusion), thoracic radiography is the diagnostic test of choice.

In the absence of any of these findings, a diagnosis of congestive heart failure is in doubt and the veterinarian should consider extracardiac (respiratory) causes. When the dog exhibits some or all of these signs, however, ameliorative intervention should be instituted without delay.
For use as chronic therapy, each of these three agents is supported by either extensive clinical anecodal experience (furosemide) or clinical trial data (pimobendan and ACE inhibitor). In addition, 2010 data supported use of spironolactone in dogs with heart failure.

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