

## **TWO CARDIAC ABNORMALITIES WITH SIMILAR CLINICAL SIGNS: DIAGNOSIS AND TREATMENT OF DILATED CARDIOMYOPATHY AND THIRD DEGREE ATRIOVENTRICULAR BLOCK IN DOGS**

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Cardiac abnormalities are common among dogs and prognosis depends upon early identification, correct diagnosis and appropriate treatment protocols. Here, we use two case studies; namely, dilated cardiomyopathy (DCM) in a 4-year-old female Doberman Pinscher dog (C1), and third degree atrioventricular (AV) block in a 12-year-old female German Shepherd dog (C2), to demonstrate the diagnosis and management of cardiac conditions. Both dogs presented with dyspnoea, congested lungs, hypothermia, exercise intolerance and pale oral mucosae. Other abnormalities were detected by radiography, electrocardiograms and echocardiography. The dog with DCM (C1) showed tachycardia with level four cardiac murmurs while the case with AV block (C2) had bradycardia. Pulmonary congestion was observed with radiography in both cases while pulmonary oedema, increased pulmonary vasculature and a VHS of 12.5 were seen in C1. An electrocardiogram of the same dog showed a wide QRS interval of 0.1 s, wide Q-T interval of 0.027 s and sagging of S-T segment with a slope of 0.35 mV. Further, left ventricular enlargement and dilatation were indicated in C1 by the R wave height of 4-5mV in lead-2. An electrocardiogram of C2 showed continuous P waves which were not followed by QRS complexes, abrupt conduction of QRS complexes and totally independent P waves. Echocardiography findings in C1 were fractional shortening (FS) of 7%, globular-shaped left ventricular distension towards the right ventricle, severe mitral regurgitation, mild tricuspid regurgitation and pericardial effusion, while C2 showed mitral, tricuspid and pulmonary regurgitation.

Treatment protocols had to be deviated due to the severe dyspnoea at the time of presentation in these animals. Furosemide was administered at an adjusted dose of 10 mg/kg q8h for C1 and 8 mg/kg q6h for C2. In addition to furosemide, an adjusted dose of digoxin was administered to C1 at a dose of 0.0025 mg/kg q12h along with enalapril at the standard dose (0.5 mg/kg q12h). We treated C2 with terbutaline sulphate (0.02 mg/kg q12h) to counteract bradycardia. The furosemide dose was adjusted to 4 mg/kg q12h after the dyspnoea resolved and subsequently spironolactone (2 mg/kg q12h) was prescribed for both cases. One month post-treatment in C1, we observed that the VHS reduced to 10.5 (radiography), FS increased to 12% (echocardiography) and the R wave amplitude reduced to 3.2mV (electrocardiography). With C2, electrocardiography showed a first degree AV block where the duration between P and QRS complexes was longer whereas echocardiography showed only very mild mitral valve regurgitation. After follow-up for one month, both conditions were successfully controlled, with a fair prognosis for C1. The prognosis was guarded for C2 unless the dog was placed on a cardiac pacemaker.