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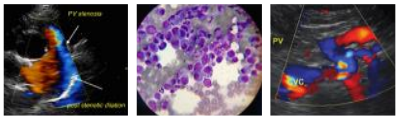

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PATIENT
Marco Sunstrom

SPECIES
Canine

BREED
Great Dane

SEX
Male Neutered

AGE
6.2.14

WEIGHT
155.3lbs

INTERPRETED BY
Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY
Stephanie Pearce, RDCS, RVT

HOSPITAL NAME
Bayside Animal Medical Center

REFERRING VET
NP

INVOICE
22410

DATE
2.7.22

PRESENTING CLINICAL SIGNS

History: Recent onset of respiratory signs.
-Pertinent abnormal PE/Chem/CBC/UA Results: 4DX neg, T4 1.83 (1.2-4.3)
-Current medications: Levothyroxine 0.8mg.
-Sedation used: Not required to complete full diagnostic ultrasound.
-STAT: Not requested.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Significant left ventricular dilation with severely depressed myocardial function. Decreased LV wall thickness. Moderate left atrial enlargement. The mitral valve appears normal in form and function, with no obvious prolapse into the left atrial lumen. Moderate mitral regurgitation secondary to annular stretch. The tricuspid valve appears normal in form and function with mild TR. Normal velocity. Mild right atrial and ventricular dilation. The aortic valve is normal in morphology and mobility. No subvalvular ridge present; normal LVOT velocity. No aortic insufficiency. Normal pulmonic valve with no pulmonic insufficiency seen. No pericardial or pleural effusion noted. No obvious cardiac tumors.

CARDIAC CHART

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	4.5	2.3	NM	1.67	7.0	13	NM
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**LA** 2D short axis Base view (cm)	**LVIDd** Avg; 2D and m-mode short axis (cm)	**LVIDs** Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
PATIENT	130	0.75	0.6	70.4	5.0	6.5	6.0
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
BODY WEIGHT DEPENDENT PARAMETERS				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
**Note: All measurements based upon multi-modal images and methods. An average value is reported.*				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
				15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
				40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
				50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

Adapted from June Boon, Veterinary Echocardiography, 1998
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435
Hansson et al, Vet Rad and Ultrasound 2002
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Unfortunately, this patient has end-stage cardiomyopathy and systolic dysfunction. This is causing dilation and overload of the left heart resulting in insufficiency of the mitral and tricuspid valves. While the LV dimensions and dysfunction are severe, there is only moderate left atrial enlargement; however, there is great risk for decompensation in this case.

Systolic failure can be primary in nature (DCM) or secondary to taurine deficiency, myocarditis, tachycardia-induced cardiomyopathy, or infiltrative disease such as lymphoma. In a predisposed breed such as a Great Dane, this is considered genetic primary DCM until proven otherwise. While never inappropriate to investigate other causes (i.e., submit a taurine level and/or supplement taurine, submit cTnI, etc.) these are considered unlikely. Taurine-deficient cardiomyopathy is typically the only treatable cause and will usually improve significantly once supplemented. Prognosis is guarded to poor at this stage in the disease process, with an average survival time of <6 months. Most DCM patients in CHF will succumb to either refractory CHF or sudden arrhythmic death at any time, and this risk should be relayed regardless of therapy.

Even with only moderate LA dilation, given the high risk for decompensation and reported respiratory signs initiation of full cardiac supportive medications is recommended as below. Cases of systolic failure are at high risk for malignant tachyarrhythmias (such as VT) and sudden death, and a baseline ECG and/or 24-hour holter monitor is recommended.

Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, worsening labored breathing, exercise intolerance or collapse episodes in the future. Monitoring of sleeping breathing rates at home is recommended to assess response to medications and recurrence of CHF in the future.

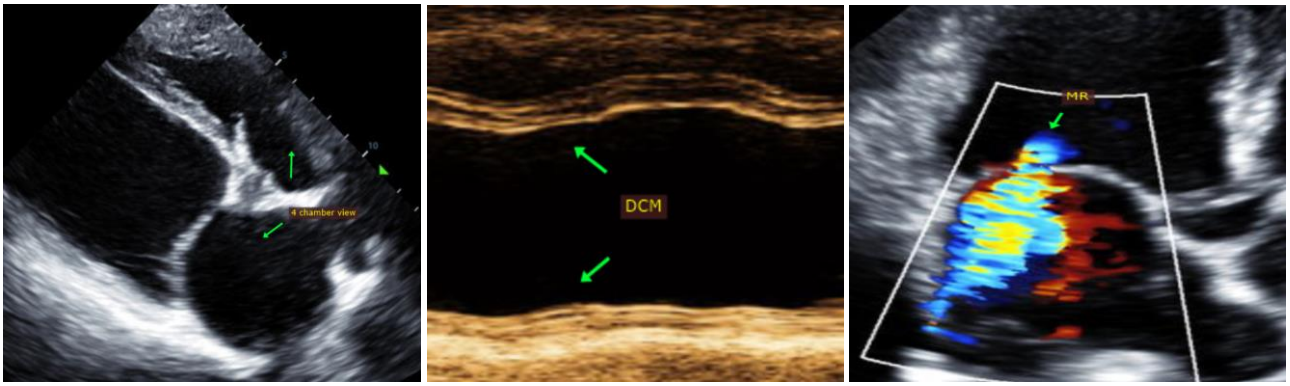
PLAN

Recommend baseline ECG and blood pressure. Consider taurine level and/or supplement taurine 1000-2000mg q12h. Recommend the following oral medications: Furosemide 1-2mg/kg PO q12h. Pimobendan 0.3mg/kg PO q12h. Spironolactone 1-2mg/kg PO q12h. Assuming BP >130mmHg, recommend ACE-I Enalapril or Benazepril 0.5mg/kg PO BID (if hypotensive, postpone initiation until recheck/normotensive).

Recheck renal panel, BP and clinical response in 1-2 weeks.

Recheck echocardiogram in 4-6 months to assess for progression, sooner if clinical issues arise.

IMAGES



The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. This report was generated using transcription software, and minor dictation errors may be present. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

Maggie Machen Lamy, DVM
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)

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