



PATIENT

Zuko Berg

SPECIES

Canine

BREED

Doberman Pinscher

SEX

Male Intact

AGE

9.3 years

WEIGHT

95lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Kim Liedberg

HOSPITAL NAME

SVS Imaging WI

REFERRING VET

Dr. Kamps

INVOICE

29665

DATE

3/16/23

PRESENTING CLINICAL SIGNS

History: Presented 10 days ago for coughing, decreased appetite, and mild lethargy. Had a history of "occasional dropped beats" during auscultation. Grade III/VI systolic L sided murmur with occasional dropped beats. Slightly harsh caudal lung sounds bilaterally, rest WNL. Chest x-rays showed cardiac silhouette enlargement and a mild perihilar alveolar pattern. Abdominal x-rays NSF. Did AFAST/TFAST and found no free fluid but subjectively noted L atrial/ventricular enlargement and poor contractility. Suspect DCM d/t breed and US findings. Would like confirmation of ddx as well as cardiologist input on treatment going forward. Started pimobendan 10mg BID and furosemide 100mg BID.

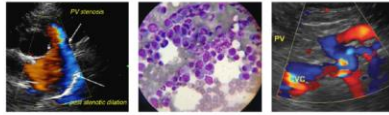
ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Severe left ventricular dilation with diminished systolic function. Severe left atrial enlargement. The mitral valve appears normal in form and function, with no obvious prolapse into the left atrial lumen. Mild central mitral regurgitation secondary to annular stretch. Normal MR velocity. Decreased LV wall thickness with increased sphericity. The tricuspid valve appears normal in form and function. Mild right atrial and ventricular dilation. Mild tricuspid regurgitation. Normal velocity. 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. Normal RVOT velocity. No pericardial or pleural effusion noted. No obvious cardiac tumors. Premature beats noted throughout the study.

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	5.8	2.0	1.7	2.0	12	20	1.2
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	70	1.6	1.3	43.1	4.5	5.9	5.2
*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)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				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

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Unfortunately, this patient has severe cardiomyopathy and systolic dysfunction. This is causing dilation and overload of the left heart resulting in insufficiency of the mitral valve. The right heart is also affected to a lesser extent. The degree of dilation and pump failure puts the patient at high risk for decompensation and CHF.

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 Doberman, this is considered genetic primary DCM until proven otherwise. Prognosis is guarded to poor at this stage in the disease process, with an average survival time of <6 months. Most Dobermans will succumb to either refractory CHF or sudden arrhythmic death at any time, and this risk should be relayed regardless of therapy.

Initiation of full cardiac supportive medications is recommended as below. Even without clear radiographic CHF, the risk is high enough that diuretics are reasonable. 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 particularly in light of ausculted arrhythmia.**

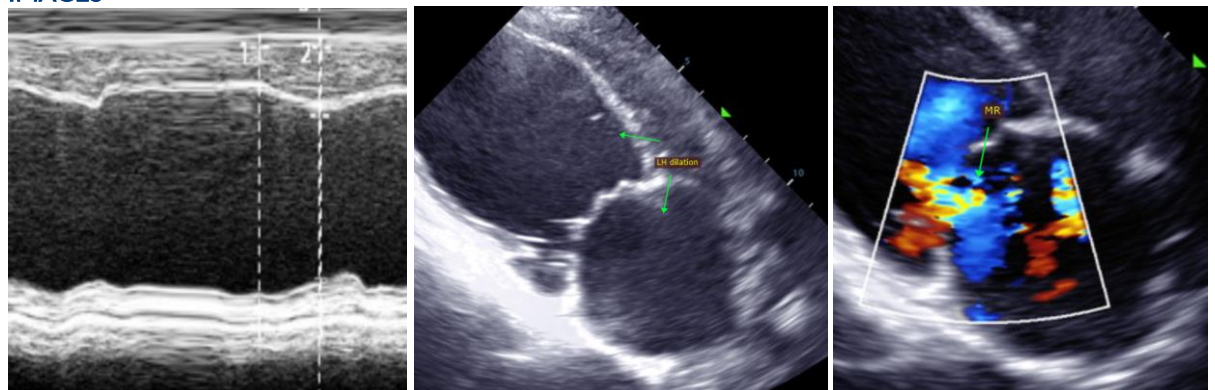
Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, worsening labored breathing, exercise intolerance or collapse episodes in the future. Monitoring of sleeping breathing rates at home is recommended to assess response to medications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

PLAN

Recommend baseline ECG and blood pressure. Continue Pimobendan 0.3mg/kg PO q12h. Continue Lasix 1-2mg/kg PO q12h. Institute Spironolactone 1-2mg/kg PO q12h.

Recheck renal panel, BP and clinical response in 1-2 weeks. Monitor renal values every 3-4 months lifelong. If BP is >130mmHg and patient is doing well at home, institute ACE-I 0.5mg/kg PO q12h.

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

IMAGES

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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.

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Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

BREED

Doberman Pinscher

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Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com

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