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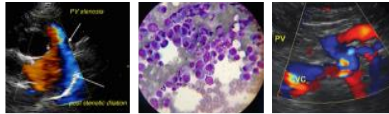

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PATIENT
Thea Beard

SPECIES
Canine

BREED
Poodle Mix

SEX
Female Spayed

AGE
5 years

WEIGHT
63lbs

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

HOSPITAL NAME
Harborside Mobile Veterinary Clinic

REFERRING VET
Dr. Hawkins

INVOICE
21446

DATE
10/11/21

PRESENTING CLINICAL SIGNS

History: Cough. PE on Friday 10/8 revealed tachycardia. Strong femoral pulses. Cough elicited on tracheal palpation near inlet.
-Radiograph: Dorsal elevation of trachea, edema present in caudodorsal lung fields. Enlarged cardiac silhouette.
-Pertinent abnormal PE/Chem/CBC/UA Results: Chem/CBC: Normal WBC. ProBNP: 9,000 (n<900).
-Current medications: Once proBNP was back on 10/9, started 20mg Furosemide BID. Patient eats OTC pet food – 1st 3 ingredients include: chicken, peas, and lentil.
-Sedation used: Sedation not required for scan.
-STAT: **STAT Report requested by veterinarian.**

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve appears mildly thickened, with no obvious prolapse into the left atrial lumen. Moderate central MR. Decreased velocity. Marked left atrial dilation. Severe LV dilation with increased sphericity and decline in myocardial function. Decreased LV wall thickness. The tricuspid valve appears mildly thickened in form and function. Mild RA/RV dilation. No overt evidence of pulmonary arterial hypertension. Mild TR, normal velocity. The aortic valve is normal in morphology and mobility. No subvalvular ridge present; normal LVOT velocity with laminar flow. No aortic insufficiency. Normal pulmonic valve with no pulmonic insufficiency seen. Scant pericardial effusion noted. No pleural effusions seen. 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	3.0	2.7	NM	2.95	10	22	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	NM	0.59	NM	28.6	4.8	7.7	6.9

*Normal chamber parameters expressed as a mean value (SD)

BODY WEIGHT DEPENDENT PARAMETERS

**Note: All measurements based upon multi-modal images and methods. An average value is reported.*

BODY WEIGHT (kg)	LA (cm)	LVIDd (cm)	LVIDs (cm)
3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
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

Four chamber dilation with a significant decline in systolic function is identified. Moderate MR and mild TR are present as well, likely secondary to dilation. The LA is markedly enlarged, indicating risk for progression to CHF in the near future. The right heart is also affected, with mild RA/RV dilation. No additional issues are identified in this study.

Dilation and dysfunction can be primary in nature (DCM) or develop to secondary to taurine deficiency, myocarditis, tachycardia-induced cardiomyopathy, hypothyroidism, or infiltrative disease such as lymphoma. Given the history, there is also concern for correlation with a grain free diet being fed in light of recent reports. **A diet change is certainly recommended**, as this is potentially the only treatable cause of these findings. A taurine level may be helpful as well, although supplementing taurine regardless of systemic levels is recommended as below (not all dogs with diet-related CM had abnormal taurine levels). Finally, further systemic evaluation for underlying infiltrative contribution such as neoplasia, thyroid panel, etc. is also reasonable (abdominal ultrasound, tick titers, etc.) although considered unlikely.

Based on today's findings including a clinic cough, reported edema and pericardial effusion, the diagnosis is early congestive heart failure and full cardiac support is recommended as below. If the patient appears unstable, hospitalization should be considered. Additionally, the patient is at high risk for atrial fibrillation and baseline ECG is recommended. Monitoring of sleeping breathing rates is recommended as the best way to screen for CHF in the future. Monitor for development of a murmur, cough, labored breathing, exercise intolerance or collapse episodes.

Prognosis is poor at this stage, given the onset of CHF with an average survival time of <6 months. There will always be a risk for development of recurrent congestive heart failure, malignant arrhythmias (AF, VT), collapse and/or sudden death in the future.

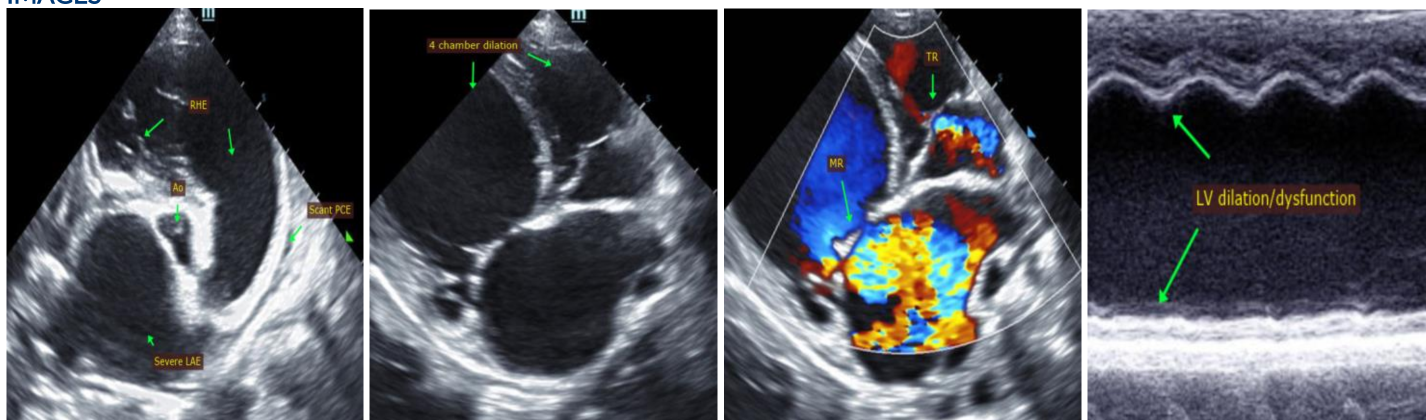
PLAN

Consider baseline ECG and BP as discussed. Consider hospitalization if indicated. Institute Pimobendan (0.25-0.3mg/kg PO q12h). Institute spironolactone 1-2mg/kg PO q12h. Institute Lasix 1-2mg/kg PO q12h. Change to traditional diet as discussed. Submit taurine level if desired. Supplement taurine, 1000mg PO q8-12h. If BP is >130mmHg, institute ACEI 0.5mg/kg PO q12h. Consider further evaluation through thyroid testing, etc. as discussed.

A renal panel and BP are recommended in 1-2 weeks, then every 3-4 months lifelong to ensure tolerance of medications.

A recheck echocardiogram is recommended in 6 months, sooner if a murmur develops or any signs of cardiac disease are noted.

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.

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