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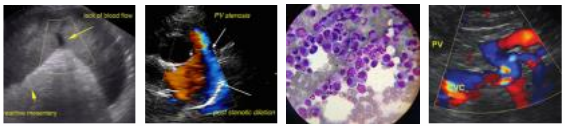

ANIMAL SOUNDS NW
MOBILE VETERINARY ULTRASOUND
IMAGING PERFORMED BY
AnimalSoundsNW.com 541-357-9423

PATIENT
Cooper Beck

SPECIES
Canine

BREED
Havanese

SEX
Male Neutered

AGE
10 years

WEIGHT
18.6lbs

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

IMAGING PERFORMED BY
Jenna Walsh, CVT

HOSPITAL NAME
VCA Mckenzie Animal Hospital

REFERRING VET
Dr.Fricke

INVOICE
25484

DATE
7/21/22

PRESENTING CLINICAL SIGNS

History: Recheck echo. Heart murmur, grade 4/6 pansystolic. Doing well.
-BP: 144/92/102, 113/74/89, 123/89/93, 122/87/90mmHg.
-Current medications: Vetmedin 3.75mg 1 tab BID, Enalapril 5mg 1 tab BID, Spironolactone 12.5mg 1/2-tab SID, SP Cardiac Support, SP Hepatic Support, Dasuquin Adv.
-Abnormal PE/Chem/CBC/UA Results: Chem: ALT 257 ALP 529 remaining normal. CBC normal T4 0.9 UA normal.
-Pertinent previous echo findings (3/2021 MML): Moderate MR, severe LAE, mild LVE, mild LVOTO, trace TR: 2.6m/s. LA: 3.0, LV; 3.7.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.

Mild cardiomegaly. No obvious evidence of CHF.

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

A single lead ECG is available; 50mm/s, 10mm/mV. The average heart rate is 130bpm (range 103-158bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive. No ectopic beats, pauses or dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with respiratory variation.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve is diffusely thickened with mild prolapse into the left atrial lumen. There is severe eccentric mitral regurgitation present. The MR velocity is normal. There is severe left atrial enlargement. There is mild left ventricular dilation. Left ventricular systolic function is hyperdynamic. There is normal systolic flow velocity across the aortic valve. The aortic valve appears trileaflet with normal mobility. Normal aortic outflow velocity; laminar flow. The main pulmonary artery is normal in diameter. The pulmonic valve is normal in appearance. Normal right atrium and ventricular dilation. Mild thickening of the tricuspid valve with trace TR. Normal velocity. No pericardial/pleural effusion or cardiac masses are seen.

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	4.7	2.5	2.3	2.3	48	80	0.5
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	114	1.7	1.1	8.4	2.9	4.0	2.1

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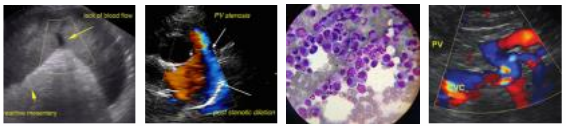

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*Normal chamber parameters expressed as a mean value (SD)	3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
BODY WEIGHT DEPENDENT PARAMETERS	5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
	10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
Adapted from June Boon, Veterinary Echocardiography, 1998	15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435	20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
Hansson et al, Vet Rad and Ultrasound 2002	25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995	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)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Persistently stable, yet severe chronic degenerative valve disease is identified in this study. Severe mitral and trace tricuspid regurgitation are unchanged and the left heart dimensions remain significantly increased. No additional issues, such as pulmonary hypertension have developed. The ECG is unremarkable with a normal sinus rhythm.

Given these findings and an asymptomatic patient, it is reasonable to continue 3 medications as prescribed. No obvious indication for Lasix prior to development of clinical signs and/or change in breathing rates at home. Close monitoring is advised, as this could happen at any time. Assessment of progression in the future will help predict long term outcome, however prognosis remains guarded at this stage (late B2). Unfortunately, the patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

Close monitoring for development of associated clinical signs (development of a cough, labored breathing, exercise intolerance or worsening collapse episodes) is recommended. Monitoring of sleeping breathing rates is recommended as the best way to screen for CHF at home.

Elective anesthesia is not advised.

Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit.

PLAN

Continue 3 medications as prescribed.

Monitor renal values and BP every 3-4 months lifelong.

A recheck echocardiogram is recommended in 6 months, sooner if issues arise in the interim.

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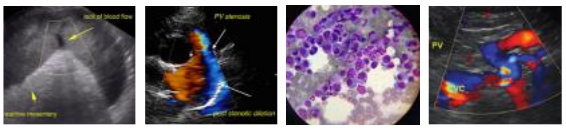

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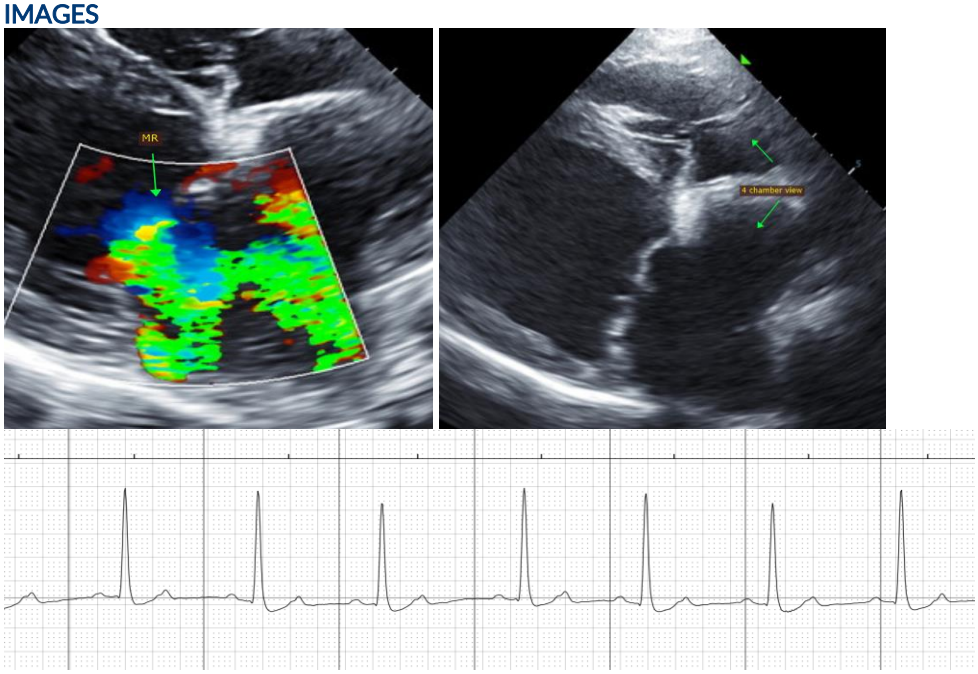

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
info@sonopath.com