

PATIENT

Cooper Beck

SPECIES

Canine

BREED

Havanese

SEX

Male Neutered

AGE

10 years

WEIGHT

18.8lbs

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

29641

DATE

3/16/23

PRESENTING CLINICAL SIGNS

History: Recheck echo. Sudden onset of increased heart rate, respiratory rate, coughing/gagging up white and yellow foam. Still on medications as last directed. On admit, pulse Ox 100%, varying 94-100% on room air. HR 180 RR 70-110 Administered Cerenia SQ 1mg/kg, Butorphanol IM 0.0mg/kg, Furosemide IV 1mg/kg. BP: 150/122 m 137 on presentation, December BP 128/94 m 101.
 -Current medications: Pimobendan 3.75mg q12h, Enalapril 5mg q12h, Spironolactone 12.5mg q12, Furosemide TID, 12.5/6.25/12.5mg, Standard Process Hepatic Support 1/4 tsp q12h, Standard Process Cardiac Support 1/2 tsp q12h.
 -Radiographs: Marked cardiomegaly with pulmonary edema.
 -Abnormal PE/Chem/CBC/UA Results: Elevated ALT, ALP.
 -Pertinent previous echo findings (1/2023 MML): Severe MR, severe LAE, moderate LVE, mild RHE, mild TR: 2.0m/s. LA: 3.2, LV: 4.6.

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

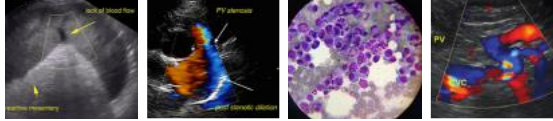
A single lead ECG is available; 50mm/s, 10mm/mV. The average heart rate is 160bpm with a largely regular rhythm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive. No ectopic beats, pauses or dysrhythmias observed.
 ECG diagnosis: Normal sinus tachycardia.

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 marked left atrial enlargement. There is moderate left ventricular dilation. Left ventricular systolic function is hyperdynamic. Moderate right atrial and ventricular dilation (subjective). Mild thickening of the tricuspid valve with mild to moderate TR. Velocity consistent with moderate to severe pulmonary hypertension. There is normal systolic flow velocity across the aortic valve. The aortic valve appears trileaflet with normal mobility. The main pulmonary artery is normal in diameter. The pulmonic valve is normal in appearance. 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	NM	4.5	>3.0	>3.0	39	69	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	150	1.3		8.5	3.8	4.6	2.8



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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 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	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)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease persists with evidence of progression. While severe mitral regurgitation is similar, the left atrium is now markedly dilated. There is also development of significant pulmonary hypertension, which was not previously noted. This is resulting in progressive right heart enlargement. The ECG is unremarkable with a normal sinus tachycardia and no evidence of atrial fibrillation or other arrhythmias at this time.

Given these findings, **recurrent refractory CHF is confirmed** and hospitalization for injectable Lasix is recommended. It is important to note this patient is now stage D, with a poor to grave prognosis. Our goal would be to stabilize for the short-term on increased medical management. If quality of life suffers, euthanasia should be elected. The predicted survival time is <3 months. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

Once stabilized, monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home. Cough suppression to improve QOL can also be considered (hydrocodone, 0.2-0.4mg/kg up to q4-6h PRN) for any residual mechanical cough in the face of normal sleeping respiratory rates.

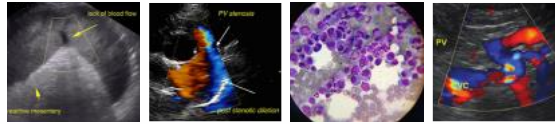
Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for acute progression of the cough, labored breathing, exercise intolerance or collapse episodes in the future.

PLAN

Hospitalization is recommended with injectable Lasix therapy. Once stabilized, discharge on Furosemide 12.5mg TID, Pimobendan 3.75mg TID. Continue Enalapril and Spironolactone as prescribed. If patients' respiratory symptoms do not resolve, consider addition of low-dose Hydrochlorothiazide 1mg/kg PO q24h.

Monitor renal values and BP in 1-2 weeks then every 3-4 months while on diuretics.

Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of associated clinical signs occurs in the interim.



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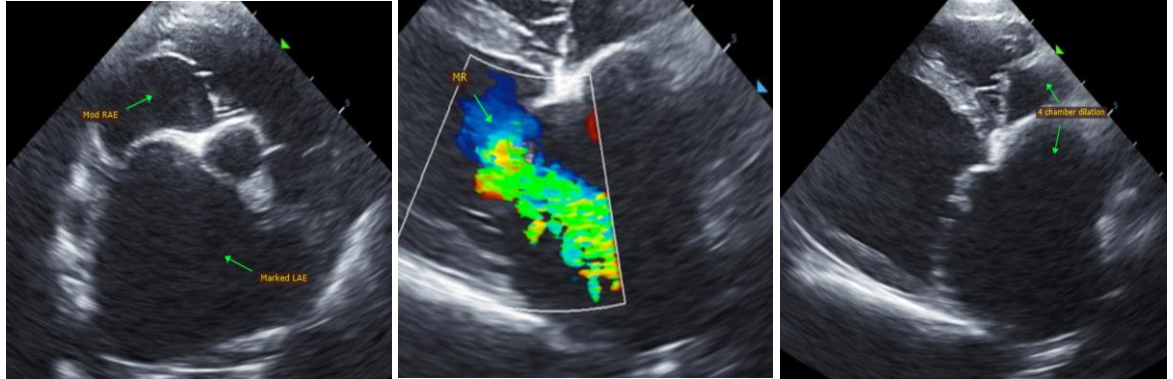
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IMAGES



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
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info@sonopath.com