



**PATIENT**

Kona Roylance

**SPECIES**

Canine

**BREED**

Silver Lab

**SEX**

Male Neutered

**AGE**

4 years

**WEIGHT**

61lbs

**INTERPRETED BY**

Maggie Machen  
Lamy, DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Jenna Walsh, CVT

**HOSPITAL NAME**

Ark Animal Hospital

**REFERRING VET**

Dr. Jackson

**INVOICE**

23531

**DATE**

4/7/22

**PRESENTING CLINICAL SIGNS**

History: 1/1/22 started coughing but only lasted a few days. The cough returned on 2/1/22 and was progressive. Lethargy was present at that time but improved. Has been on grain free diet for long term. Radiographs taken that day: borderline VHS; otherwise NSF. PE WNL. Started on clavamox and probnp testing done (1245pmol/L). Recommended taurine testing, O declined but started supplementation at 100mg/day. 8/18/21 HWT, negative. Seen again 3/22/22, murmur auscultated, no further concerns from O (coughing no longer present), HWT repeated and normal. Blood Pressure 206/110 (141)

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Mild diffuse thickening of mitral valve leaflets with no prolapse into the left atrial lumen. No mitral regurgitation with no left atrial dilation. Normal LV diastolic dimension; increased systolic dimension with mild systolic dysfunction (FS 17-24%). The tricuspid valve appears mildly thickened with trace tricuspid regurgitation. Normal velocity. Normal right atrial and ventricular diameter and morphology; no overt evidence of pulmonary arterial hypertension. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No AI/PI. No pericardial or pleural effusion noted. No obvious cardiac masses.

**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	NA	2.0	1.0	1.3			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	100	0.9	0.8	27.7	2.8	4.1	3.3
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
<b>BODY WEIGHT DEPENDENT PARAMETERS</b>				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
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				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)



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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Mild left heart changes are identified, including mild LV dilation in systole and mild to moderate systolic dysfunction. While a normal variant is possible, there is great concern for early cardiomyopathy in this young dog. Serial monitoring is advised for progression. The LA is normal indicating low risk for imminent complication. No concurrent issues such as pulmonary hypertension are noted in this study.

Given the echo findings and the recent evidence of grain free diets leading to DCM in some (but certainly not all) dogs, highly recommend **change to a more standard well formulated diet**. Additionally a taurine level can be submitted, however regardless of results recommend a taurine supplement in this case as below. Monitoring for progression is advised. No clear indication for Pimobendan at this juncture, however if any progression or clinical signs are noted this will be advised.

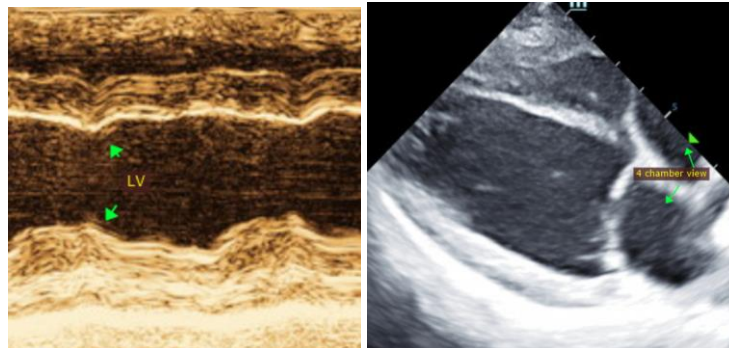
These findings are independent of the cough symptom, and no cardiac contribution is suspected.

Monitor for development of a heart murmur, cough, labored breathing, exercise intolerance or collapse episodes. Omega fatty acid supplementation and mild salt restriction may be of some long term benefit.

Anesthetic risk is considered mild. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

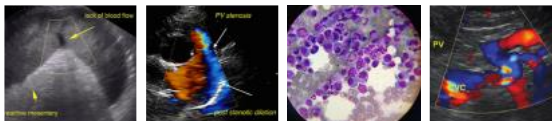
Plan: **Diet change ASAP**. Taurine supplement, 1000mg q8-12h. Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.

**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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**Maggie Machen Lamy, DVM**

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