


**PATIENT**

Apastis Bouzkova

**PRESENTING CLINICAL SIGNS**

History: New murmur noted March 30, grade 1-2. Working dog, must be heart cleared to compete and work.

**SPECIES**

Canine

**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, 20mm/mV. The average heart rate is 90bpm (range 58-111bpm). 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 other dysrhythmias observed.

**BREED**

Belgian Malinois

ECG diagnosis: Normal sinus rhythm with respiratory variation.

**SEX**

Male Intact

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Mild diffuse thickening of mitral valve leaflets with no obvious prolapse into the left atrial lumen. Mild mitral regurgitation with no left atrial dilation. Mild LV dilation in diastole (LVIDdN: 2.0) with an increased systolic dimension as well (LVIDsN: 1.4). Increased LV sphericity. Decline in myocardial function. The tricuspid valve appears normal with no tricuspid regurgitation. Normal right atrial and ventricular diameter and morphology indicating 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 or PI. No pericardial or pleural effusion noted. No obvious cardiac masses.

**AGE**

5 years

**WEIGHT**

83.8lbs

**CARDIAC CHART**
**INTERPRETED BY**

 Maggie Machen Lamy,  
 DVM DACVIM  
 (Cardiology)

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	NA	NM	1.1	22	40	0.82
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	2.0	1.5	38.0	2.5	5.9	4.5
*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)
<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

**IMAGING PERFORMED BY**

Kelly Reschny, RVT

**HOSPITAL NAME**

 Oxford County  
 Veterinary Clinic

**REFERRING VET**

Dr. Halfon

**INVOICE**

23506

**DATE**

4/7/22



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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Mild to moderate left heart changes are identified, with LV enlargement and moderate systolic dysfunction. A FS of nearly 20% is concerning and certainly should be monitored. Mild mitral regurgitation is appreciated as the cause of the murmur, which likely suggests early valve disease. No additional issues are identified, and the LA is normal, indicating a low risk for complication at this time. The ECG is unremarkable with a sinus arrhythmia.

Given the echo findings and the recent evidence of grain free/boutique diets leading to DCM in some (but certainly not all) dogs, highly recommend a thorough diet history in this patient. If grain free or boutique brand, recommend immediate change to a more standard well formulated diet. A taurine supplement is also recommended. Additionally, hypothyroidism can cause decreased myocardial function and should be screened for.

No medications are indicated prior to LA dilation. Close follow up is advised to screen for any progressive issues.

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. Mild activity restriction is advised, which may suggest a change in lifestyle is needed.

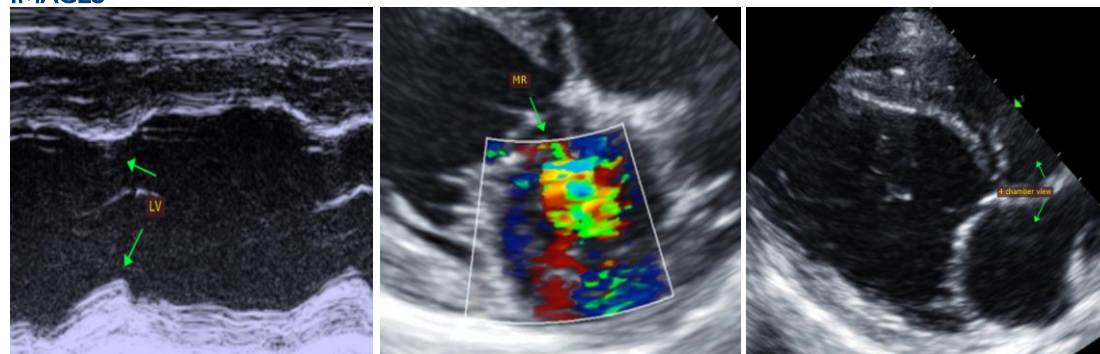
Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively 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.

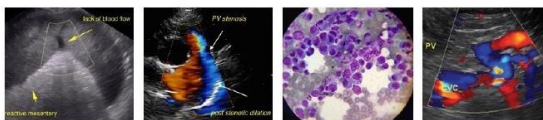
**PLAN**

Diet history recommended as discussed. Recommend taurine supplement, 1000mg PO q12h. Consider full thyroid panel.

Recommend conservative monitoring with a recheck echocardiogram in 6 months.

**IMAGES**





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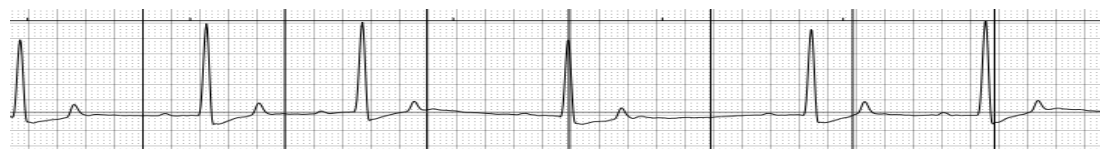
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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