


**PATIENT**

Linkin Carvalho

**PRESENTING CLINICAL SIGNS**

History: Grade 2/6 murmur first noted in May 2018. Doing well. Possible collapse episode in December 2021. No medications.

**SPECIES**

Canine

-Abnormal PE/Chem/CBC/UA Results: Normal Chemistry and T4. Elevated Hematocrit and Hemoglobin and Retics.

**BREED**

Boston Terrier

**RADIOGRAPHIC FINDINGS** \*NOTE: Images submitted for supplemental cardiac information only. Normal cardiac silhouette. No obvious evidence of CHF.

**SEX**

Male Neutered

**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. Trace mitral regurgitation is identified. Normal MR velocity. Normal left atrial dimension. Normal LV diameter with adequate myocardial function. The tricuspid valve appears subjectively normal, with no tricuspid regurgitation. The right heart is normal (subjective). No overt evidence of pulmonary arterial hypertension. The pulmonic and aortic valves are normal in morphology and mobility. Mildly elevated aortic and pulmonic outflow velocities. Trace aortic and no pulmonic insufficiency. No pericardial or pleural effusion noted. No cardiac tumors observed.

**AGE**

4 years

**CARDIAC CHART**
**WEIGHT**

25.8lbs

**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	5.0	NA	1.2	1.3	38	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	2.3	2.0	11.7	1.6	3.0	1.8
*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)

**INVOICE**

22374

**DATE**

2/4/22

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The only cause of a murmur identified is increased flow velocity through both great vessels. No obvious subaortic ridge or valvular abnormalities are visualized, and in the absence of structural abnormalities this is considered a benign flow murmur. Given an



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increased Hematocrit, this is likely related as volume changes will exacerbate this finding. It is reasonable to monitor periodically via recheck echocardiography in the future. No significant valvular insufficiencies were noted, and no structural issues identified.

**SPECIES**

Canine

No structural cause for syncope/collapse is identified in this study. If the episodes recur, consider further evaluation such as an ECG/holter monitor, systemic evaluation, etc. A baseline blood pressure is strongly recommended given an aortic leak and this historical event.

**BREED**

Boston Terrier

No cardiac medications are indicated. No cardiac contraindication for general anesthesia.

**SEX**

Male Neutered

Monitor for any development of cough, labored breathing or exercise intolerance.

Recommend recheck echocardiogram in 12-18 months to screen for progression or development of concurrent cardiac disease that the preexisting murmur may mask.

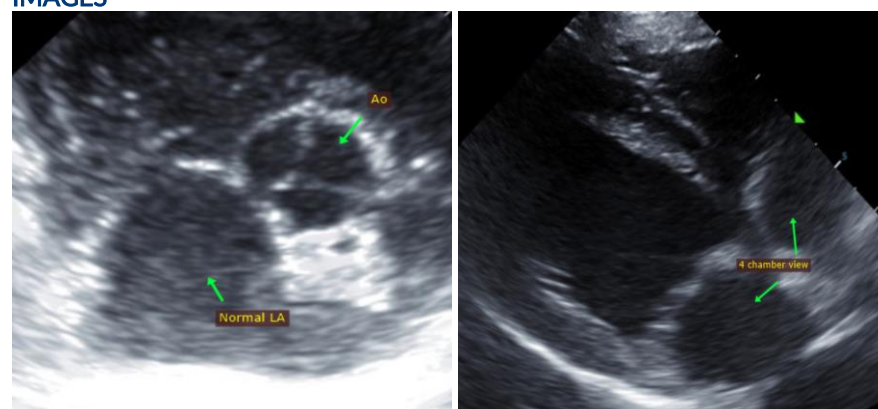
**AGE**

4 years

**IMAGES**

**WEIGHT**

25.8lbs



**INTERPRETED BY**

Maggie Machen Lamy,  
DVM DACVIM  
(Cardiology)

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.

**IMAGING PERFORMED BY**

Crystal Hill, RVT

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.

**HOSPITAL NAME**

Hawkins Animal  
Hospital

**Maggie Machen Lamy, DVM**  
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)  
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**REFERRING VET**

Dr. Hawkins

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