



**PATIENT**

Trixie Thomas

**SPECIES**

Canine

**BREED**

Boxer

**SEX**

Female Spayed

**AGE**

8 years

**WEIGHT**

53lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Jennifer Todd, DVM

**HOSPITAL NAME**

Lambs Gap Animal  
Hospital

**REFERRING VET**

Dr. Todd

**INVOICE**

32311

**DATE**

8/11/23

**PRESENTING CLINICAL SIGNS**

History: Recheck echo. Grade 1/6 heart murmur. Presented in May this year to evaluate SQ masses just caudal to her left 5th mammary gland. FNA cytology showed most likely inflamed benign mammary adenoma, but carcinoma could not be ruled out on FNA. Surgical excision was discussed, and pre-anesthetic lab work showed normal CBC, normal chemistry, normal T4. However, Cardiac ProBNP increased at 1097 (was 497 in December 2020). BP: 134, 138, 137mmHg.  
-Pertinent previous echo findings (1/2020 MML): Normal with an LVOT murmur. Trace MR.

**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; 25mm/s, 10mm/mV. The average heart rate is 110bpm (range is 90-125bpm). Significant motion artifact throughout impedes careful interpretation. The P and QRS morphologies are positive. No ventricular beats are appreciated. No obvious dysrhythmias are seen.

ECG diagnosis: Normal sinus rhythm with respiratory variation.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Minimal diffuse thickening of mitral valve leaflets with no obvious prolapse into the left atrial lumen. Trace mitral regurgitation is identified. Normal left atrial dimension. Normal LV diameter with borderline myocardial dysfunction. 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 valve is normal in morphology and mobility. Normal pulmonic outflow velocities. The aortic valve is mildly thickened with a mildly elevated LVOT velocity. No aortic or pulmonic insufficiency. No pericardial or pleural effusion noted. No cardiac tumors observed.

**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		2.0	NM	1.2	25	50	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		1.8	0.8	24.0	2.3	4.4	3.3
*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)
*Note: All measurements based upon multi-modal images and methods. An average value is reported.				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



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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

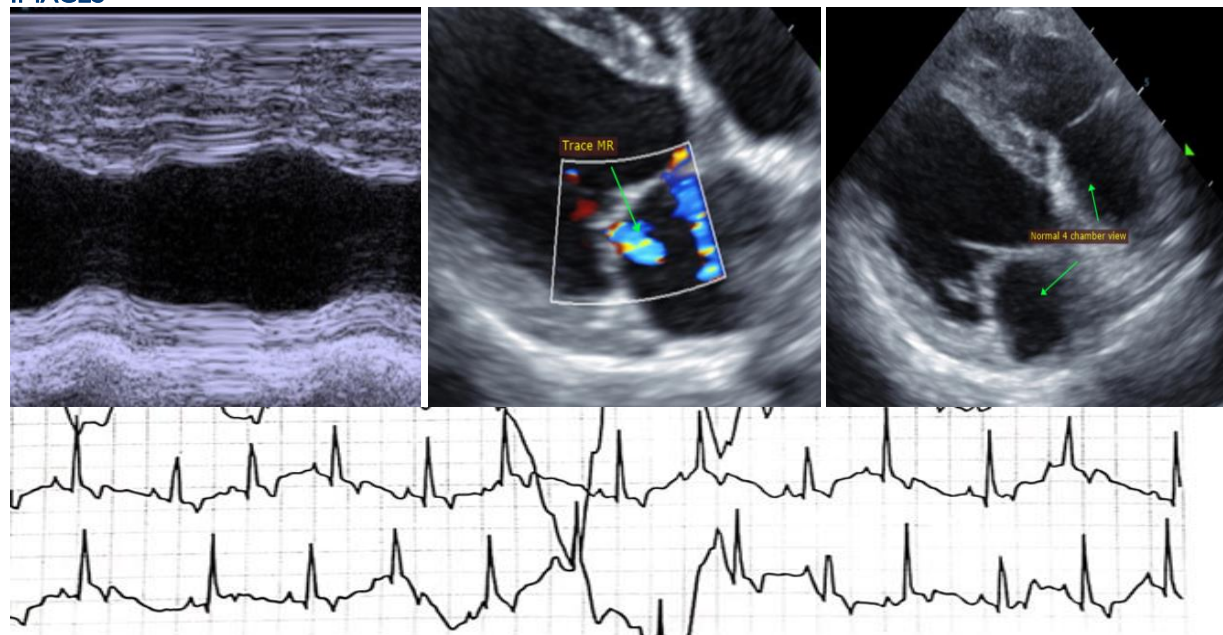
Compared to the prior study, findings appear similar. The overall cardiac dimensions are normal with trace MR. The murmur remains benign in origin. It is worth noting that the LV function is borderline depressed for this signalment (not appreciated on the prior study), this may simply be an age-related change; however, screening for contributing issues is recommended. This would include a non-traditional diet or hypothyroidism. The ECG is unremarkable with a normal sinus rhythm.

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

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

Recommend recheck echocardiogram in 1 year to screen for progression or development of concurrent cardiac disease that the preexisting murmur may mask.

**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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