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Clinical Sonography & Telecytology

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**PATIENT**

Chance Lawrence

**SPECIES**

Canine

**BREED**

Yorkshire Terrier

**SEX**

MN

**AGE**

2015

**WEIGHT**

7.5kgs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**HOSPITAL NAME**

Banfield Towson

**REFERRING VET**

Dr. Chadha

**INVOICE**

24915

**DATE**

6/22/22

**PRESENTING CLINICAL SIGNS**

History: History of grade 3/6 systolic murmur.

Current medications: None.

Sedation used: Not required to complete full diagnostic ultrasound.

Pertinent previous ultrasound results: No previous.

STAT: Not requested

Imaging performed by: Andi Parkinson, BS, RDMS.

**ELECTROCARDIOGRAPHIC FINDINGS**

A six lead ECG is available at both 25 and 50mm/s; 2mm/mV. The average heart rate is bpm (range 115-214bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. No ectopic beats, pauses or dysrhythmias observed.

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. No MR; normal left atrial dimension. Borderline increase in LV wall thickness (0.7cm) with a small LV chamber. Adequate 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. A dynamic RVOT and LVOT obstruction are noted, depending on HR. No pulmonic insufficiency. No AI. 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	NA	NM	1.3	63	93	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	2.1	1.6	7	1.6	2.1	0.9
*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

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Essentially normal cardiac structure and function with no obvious valvular regurgitation or chamber dilation. Minimal LV hypertrophy is noted with a small LV chamber, and baseline BP and lab work are highly recommended. Interestingly, the murmur is due to a dynamic RVOT and LVOT obstruction (similar to what is seen in cats) which appear benign in origin. This is highly heart rate dependent, and is more prominent after prolonged filling periods. No significant valve leaks are identified. The ECG is unremarkable with a normal sinus rhythm.

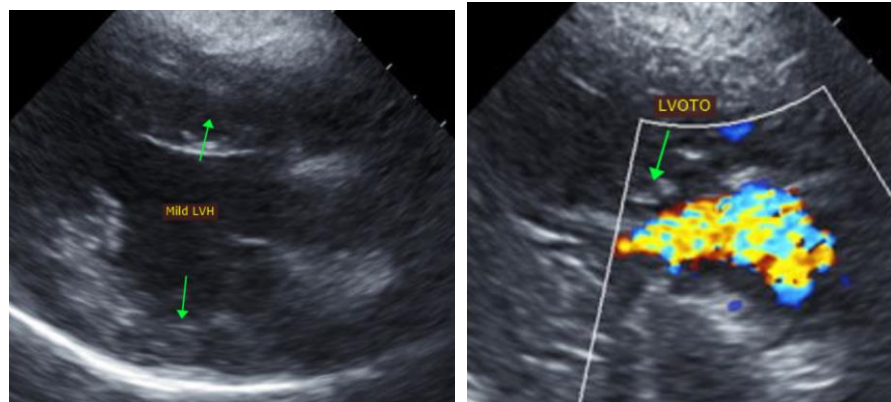
No cardiac medications are indicated at this time.

Monitor for development of a progressive cough, labored breathing, exercise intolerance or collapse episodes.

No contra-indication for general anesthesia.

Plan: Baseline BP and lab work strongly recommended. Recommend a recheck echocardiogram in 12 months to reassess LV dimensions, 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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