



**PATIENT**

Flops Vagnoni

**SPECIES**

Rabbit

**BREED**

Holland Lop Ear

**SEX**

Male Neutered

**AGE**

6 years

**WEIGHT**

4.4lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Sarah Pender, CVT

**HOSPITAL NAME**

Kim Liedberg

**REFERRING VET**

Dr. Krisp

**INVOICE**

23514

**DATE**

4/7/22

**PRESENTING CLINICAL SIGNS**

History: Patient is chronically on SMZ/TMP, Currently on meloxicam, gabapentin, and ofloxacin for upper respiratory signs. 2/19/22 exam for bilateral ear infection and developed right head tilt after a few days. He was sedated for ear flush on 2/22/22 and state on azithromycin. He was doing well but recently started to drop food and not wanting to eat hard food. Recheck for molar trim and on 4/6/22 a grade II right side heart murmur was noted.

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

**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 250bpm with a largely regular rhythm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P morphology is positive. The QRS is inverted. No ectopic beats, pauses or other dysrhythmias observed.

ECG diagnosis: Normal sinus tachycardia.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is normal in dimension. There is a mildly hyperechoic endocardium consistent with fibrosis. The LV is normal in dimension, although slightly spherical in appearance. The papillary muscles are hyperechoic. The left atrium is borderline normal in size. The right atrium is normal in size. The right ventricle appears normal. The mitral valve appears thickened; however, trivial MR is visualized. The tricuspid valve appears normal in structure and mobility. Trace/mild TR. Blood flow through both the LVOT and RVOT are normal in velocity; however, a dynamic obstruction is suspected on color flow imaging. No effusions. No obvious cardiac tumors.

**CARDIAC CHART**

CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm) <small>(Moise, Pipers)</small>	LVIDd (cm) <small>(Moise, Pipers)</small>	LWVd (cm) <small>(Moise, Pipers)</small>	FS (%)	EF (%)
NORMAL PARAMETER	-----	150-240	0.35-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
PATIENT	2.0	200	0.26	1.28	0.29	50	92
FELINE CARDIAC PARAMETERS	LA/AO (Boon)	LA/AO HEART BASE (Swe) (Abbott)	LA 2D short axis Base view (cm) (Abbott)		LVOT VEL (m/s)	RVOT VEL (m/s)	E max (m/s)
NORMAL	<1.5	<1.3	<1.2		<1.6	<1.3	<0.9
PATIENT	1.3	1.2	1.0		0.73	1.8	NM
<p><i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>                      Adapted from June Boon, Veterinary Echocardiography, 1998                      Abbott J &amp; MacLean H JVIM 2006;20: 111-119, Moise et al. Am J Vet Res 47:1476, 1986. Pipers et al. Am J Vet Res 40:882, 1979.</p>							

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

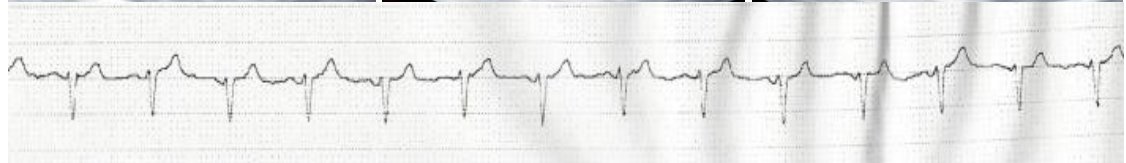
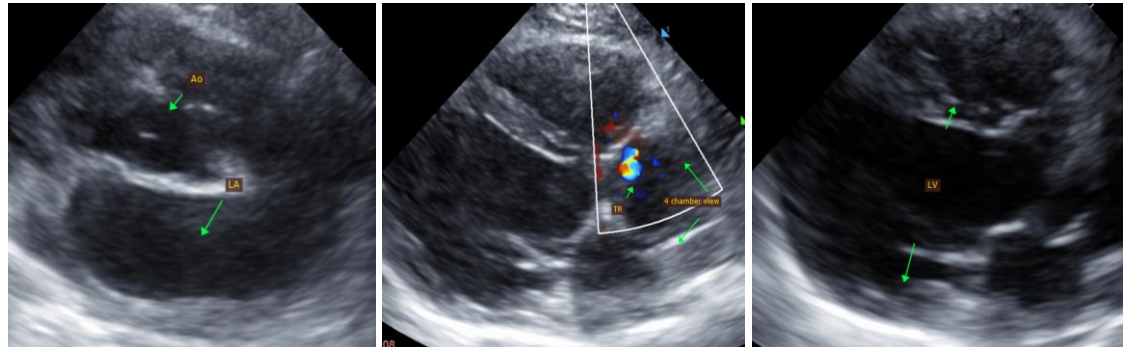
Overtly normal cardiac structure and function. Mild fibrosis of the left ventricular wall is noted, which is likely a normal variant. Small mitral and tricuspid regurgitation are unlikely to be heard on exam and both appear hemodynamically insignificant. An intermittent RVOT obstruction is suspected upon color flow imaging, which at least in cats is typically benign. Follow up is advised to ensure no progressive issues are identified. The LA is borderline indicating low risk for complication at this time. The ECG is unremarkable with a regular sinus rhythm.

Given these findings and a normal LA dimension, no medications are indicated.

No cardiac contraindication for general anesthesia. Should fluid or steroid therapy be indicated in the future, any cat should be monitored for intolerance (changes in RR/RE).

Monitor at home for signs of cardiac compromise, including respiratory changes and/or signs of a blood clot event (paralysis, neurologic changes).

Recommend recheck echocardiogram in 1 year to assess for any progressive issues or development of disease the pre-existing 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. 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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