

**PATIENT**

Khloee Reason

**SPECIES**

Feline

**BREED**

DSH

**SEX**

Female Spayed

**AGE**

13 years

**WEIGHT**

14.6lbs

**INTERPRETED BY**

Maggie Machen  
 Lamy, DVM, DACVIM  
 (Cardiology)

**IMAGING PERFORMED BY**

Jenna Walsh, CVT

**HOSPITAL NAME**

Wilvet of Salem

**REFERRING VET**

Wilvet of Salem

**INVOICE**

25459

**DATE**

7/20/22

**PRESENTING CLINICAL SIGNS**

History: Presented with lethargy and mild inappetence. Persistent sinus tachycardia and a left mean electrical axis deviation noted on ECG. BP: 85/65mmHg MAP 72.

-Current medications: Cerenia, Baytril, Amp-sulbactam, Fentanyl.

-Abnormal PE/Chem/CBC/UA Results: CBC: HCT 51.7 HGB 16.6 WBC 2.00 Neut 0.44 Lymph 1.13 Mono 0.04 plts 324 chem 17: Gluc 194 Glob 5.2 ALT 250 Chol 264 Amyl 1758 EPOC: K 3.0 Lact 4.08 Creat 1.99 Gluc 194 BUN 23 HCT 48

**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 230bpm with a 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 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 diffusely hyperechoic endocardium consistent with fibrosis. The endocardium also appears mildly remodeled. The papillary muscles appear mildly remodeled. The left atrium is normal in size. Blood flow through the LVOT appears normal with no evidence of obstruction. The right atrium is normal in size. The right ventricle appears normal. The tricuspid valve appears normal in structure and mobility. Trace tricuspid regurgitation. The mitral valve is normal in structure and mobility. No mitral regurgitation. Blood flow through the RVOT is mildly elevated in velocity based upon Doppler and color flow, likely secondary to tachycardia creating a benign outflow tract obstruction. No evidence of cardiac tumors or metastatic lesions on this scan.

**CARDIAC CHART**

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm) (Moise, Pipers)	LVIDd (cm) (Moise, Pipers)	LVWd (cm) (Moise, Pipers)	FS (%)	EF (%)
NORMAL PARAMETER	-----	150-240	0.35-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
PATIENT	6.6	250	0.43	1.2	0.45	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	1.4	1.2	1.1		1.1	1.7	NM
*Note: All measurements based upon multi-modal images and methods. An average value is reported. Adapted from June Boon, Veterinary Echocardiography, 1998 Abbott J & 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.							

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The only abnormality identified is a heart rate dependent flow obstruction through the right ventricle (DRVOTO), which is a physiologic finding (i.e., benign and of little clinical significance). This type of abnormality will wax and wane secondary to tachycardia and volume changes and



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may cause an intermittent murmur. There is also a significant amount of LV remodeling and fibrosis, which may be indicative of early pathology or simply represent a normal variant. Regardless, the left atrial dimension is normal, and there is minimal risk for complication at this time. Serial echocardiography will be necessary to determine progression and clinical relevance of the findings in the future.

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The ECG is largely unremarkable with a persistent sinus tachycardia. The QRS is inverted, which may suggest an axis deviation/BBB; however, this cannot be commented on without a six-lead tracing. Regardless, what is seen here is benign. Consider screening for causes of sinus tachycardia, such as pain, stress, etc.

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The blood pressure is extremely low and should be reassessed for accuracy/persistence. If deemed to be accurate, full systemic evaluation is recommended to assess for underlying causes of hypotension.

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Given these findings, no medications are indicated at this time.

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If needed, the risk for general anesthesia is low, however heart rate stimulating drugs such as atropine, glycopyrrolate or ketamine should be avoided unless medically necessary. Even without significant pathology, with this degree of remodeling and diastolic stiffening there is a mildly elevated risk for fluid overload in this patient. Judicious IV fluid use is recommended. Additionally, a screening blood pressure is recommended in any older cat prior to general anesthesia.

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Maggie Machen  
Lamy, DVM, DACVIM  
(Cardiology)

Risk for complication with steroid use typically follows LA dilation, which in this case is low. That being said, any cat can experience unexpected signs of intolerance and monitoring of RR/RE is advised particularly in the initiation phase.

Recommend recheck echocardiogram in 1 year to assess for progression.

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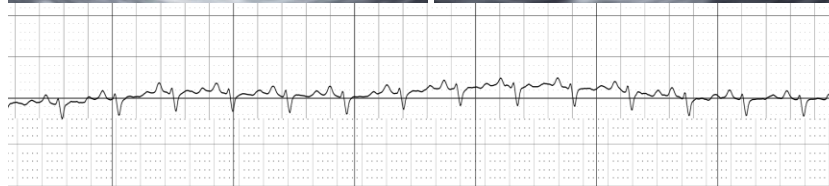
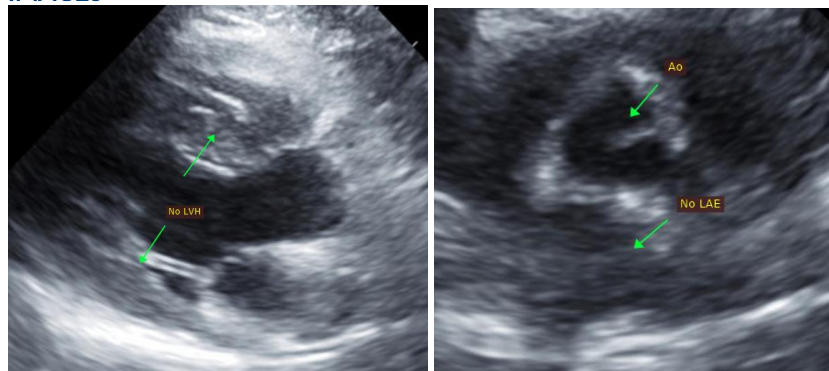
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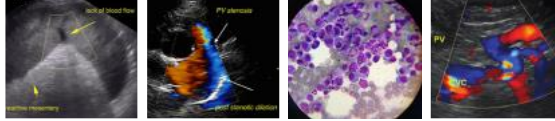
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**IMAGES**





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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.

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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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Diplomate of the American College of Veterinary Internal Medicine (Cardiology)  
info@sonopath.com

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