

PATIENT

Milo Reimbold

SPECIES

Feline

BREED

DSH

SEX

Male Neutered

AGE

10 years

WEIGHT

13.6lbs

INTERPRETED BY

Maggie Machen
Lamy, DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

The Veterinary
Hospital

REFERRING VET

Dr. Yamada

INVOICE

29537

DATE

3/10/23

PRESENTING CLINICAL SIGNS

History: Grade 2/6 heart murmur. Elevated ProBNP. Asymptomatic.
 -Abnormal PE/Chem/CBC/UA Results (02/28/23 Idexx: CHEM27, CBC, UA, T4 (all normal other than slight hypocalcemia 8.0, slight hypokalemia 3.6). ProBNP elevated at 382.

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 and QRS morphologies are positive. Isolated VPCs throughout; singles only and monomorphic. Six in a 40 second tracing. No supraventricular premature beats, pauses or other dysrhythmias observed.

ECG diagnosis: Sinus tachycardia with isolated VPCs.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is largely normal in dimension. There is a mildly hyperechoic endocardium consistent with fibrosis. The papillary muscles are mildly remodeled and hyperechoic. The left atrium is normal in size. The right atrium is normal in size. The right ventricle appears normal. The mitral valve is normal in structure and mobility. Trace TR. Normal velocity. Blood flow through both the LVOT and RVOT is normal in velocity. No pleural or pericardial effusion seen. No obvious cardiac tumors.

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	6.2	220	0.50	1.76	0.43	63	93
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	1.3	1.2		1.5	1.1	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

Overtly normal geriatric cardiac structure and function. The LV wall thickness is normal and there is no evidence of elevated left atrial pressure. There is mild remodeling and fibrosis of the left ventricular wall, which is likely a normal variant in this geriatric cat. Serial echocardiography will be necessary to determine progression, particularly in light of BNP elevation. Finally, no cause for the murmur is identified in this study making it likely physiologic in origin (i.e., secondary to tachycardia, volume changes, etc.). Given these findings, no medications are indicated.



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While no structural cause for BNP elevation is seen here, false positives are certainly possible. Ancillary causes such as renal disease or systemic hypertension should also be considered in this patient. A BP is strongly recommended.

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The ECG does show isolated VPCs. VPCs can develop secondary to significant cardiac disease or fibrosis, or be extra-cardiac in origin (i.e., due to stress, pain, inflammation, systemic issues, etc.). Given what is seen here, structural causes are unlikely and systemic evaluation may be warranted. Regardless, no therapy is typically warranted for arrhythmic cats with the exception of sustained tachyarrhythmias and simple follow up is recommended. Monitor for any signs of progressive arrhythmia, including significant lethargy or collapse/syncope.

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Anesthetic risk is considered mild, however judicious IV fluid rates are advised to avoid fluid overload. Additionally, drugs that stimulate heart rate should be avoided unless clinically necessary (glycopyrrolate, atropine). Avoid vasodilators as this may worsen the obstruction. A reasonable protocol includes opioid/benzodiazepine premedication, propofol induction, isoflurane maintenance. Additionally, steroids should be used with caution on older cats, as even a 'normal' geriatric heart can develop evidence of intolerance and fluid retention.

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A recheck echocardiogram is recommended in 1 year, sooner if any clinical signs arise.

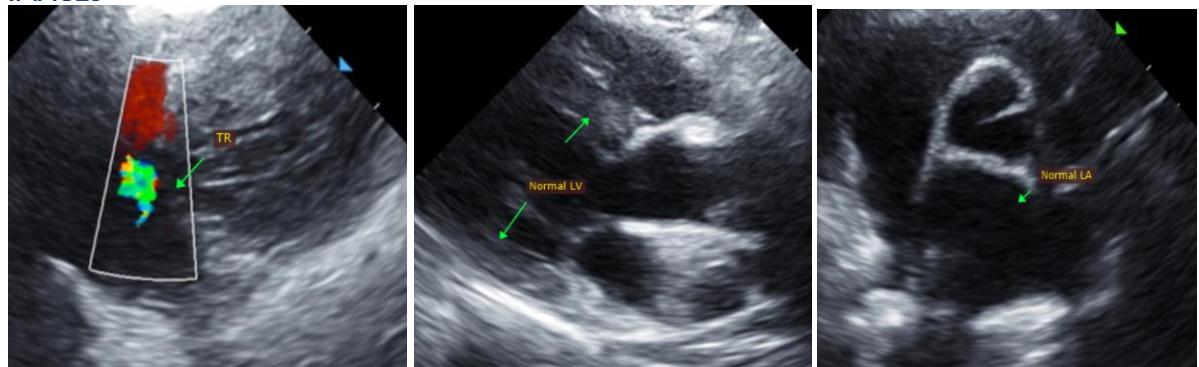
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IMAGES



HOSPITAL NAME

The Veterinary Hospital

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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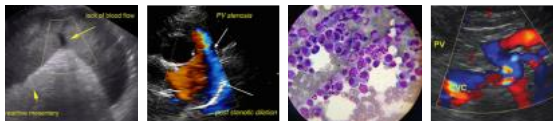
29537

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.

DATE

3/10/23

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



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info@sonopath.com

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