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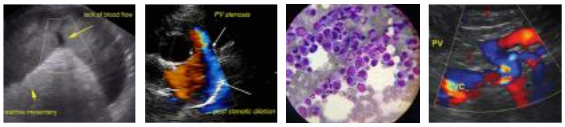

ANIMAL SOUNDS NW
MOBILE VETERINARY ULTRASOUND
IMAGING PERFORMED BY
AnimalSoundsNW.com 541-357-9423

PATIENT
Blake Jr Dent

SPECIES
Feline

BREED
DSH

SEX
Female Spayed

AGE
12 years

WEIGHT
6.6lbs

INTERPRETED BY
Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY
Jenna Walsh

HOSPITAL NAME
Eugene Animal Hospital

REFERRING VET
Dr. Polk

INVOICE
20544

DATE
8/13/21

PRESENTING CLINICAL SIGNS

History: Presented to emergency clinic for possible syncopal episode, 08/06/2021; grade V parasternal murmur heard. On 08/12/2021 assessment no murmur was heard but patient did have arrhythmia. Alternating between tachycardia (~200 BPM) and bradycardia (~60 BPM), pulses are synchronous with heart, reduced intensity (mild thready characteristic) during tachycardia. This change of rate was fairly apparent during 08/12/2021 visit with multiple auscultations finding the rate change, on 08/13/2021 it was appreciated only once during auscultation and was not apparent on echo nor ECG. Heart Rate and Respiratory Rates 200BPM.
-Abnormal lab results: BNP: 133, remainder NSF.
-Blood Pressure: 140/116 - 120; 137. 106/70 - 78; 93. 155/120 - 131; 131mmHg.

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 214bpm with a 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. 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 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. No MR or TR. The mitral valve is normal in structure and mobility. Blood flow through the LVOT is normal in velocity. Blood flow through the RVOT is elevated in velocity on both color flow and spectral doppler with a dynamic profile. 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	3.0	208	0.49	1.2	0.44	67	96
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	1.1	1.06		0.7	2.2	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.

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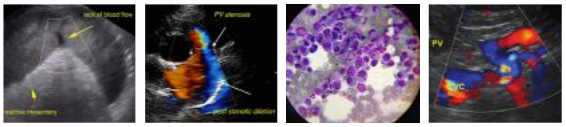

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Overtly normal geriatric cardiac structure and function. The LV wall thickness is normal, and there is no evidence of elevated left atrial pressure or underlying pathology at this time. There is remodeling and fibrosis of the left ventricular wall, which may be a normal age-related finding. The murmur is due to a dynamic RVOT obstruction which is a benign physiologic finding. No additional issues are identified.

No obvious structural cause for BNP elevation is seen here. A flaw of the BNP test is false positives, which may be the case; however, alternative causes for elevation should be considered, including decreased renal clearance, hypertension, etc. If no obvious cause is identified, reassessing this patient in 6-12 months is recommended to ensure early disease was not missed.

The ECG is unremarkable with a normal sinus tachycardia. This does not rule out periodic arrythmias that were not captured here, with the auscultatory findings highly concerning. Unfortunately, cats to not tolerate holter monitors well and admitting for hospitalization and ECG monitoring may be useful in this case particularly should syncope recur. Alternatively consider referral to a local Cardiologist for advanced imaging and discussion of diagnostic and therapeutic options.

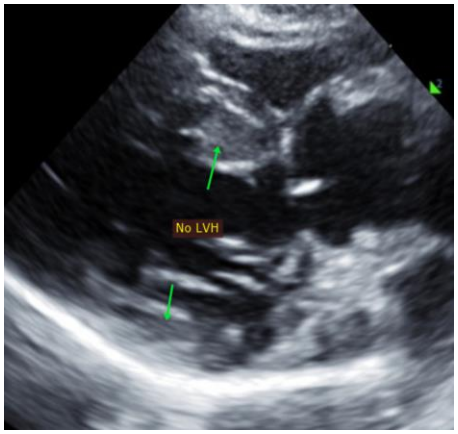
Anesthesia is NOT advised prior to further arrhythmia evaluation.

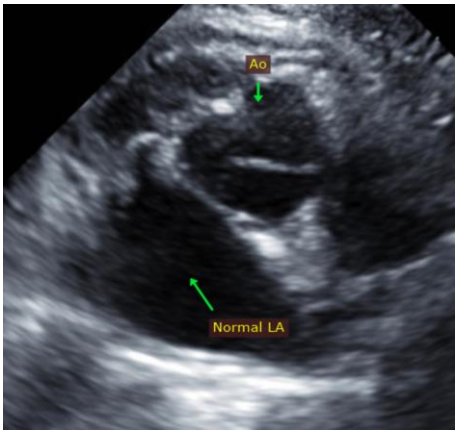
PLAN

Baseline BP and T4 are recommended. Consider an extended ECG tracing, hospitalization for ECG monitoring, holter monitor and/or referral as discussed.

Recommend recheck echocardiogram in 1 year to screen for development of any structural changes.

IMAGES





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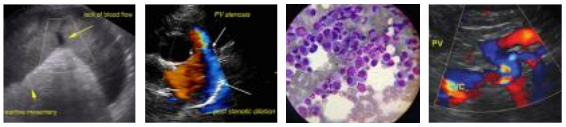

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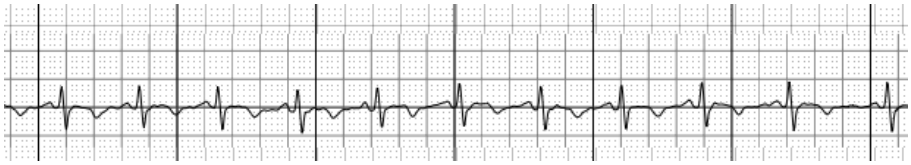

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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