



PATIENT

Hollyhock Wardlaw

PRESENTING CLINICAL SIGNS

History: Grade 4/6 heart murmur. Mild cardiomegaly on CXR.

SPECIES

Feline

BREED

DSH

SEX

Female Spayed

AGE

11 years

WEIGHT

8.22lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Dana Alterman,
RDMS, LVT

HOSPITAL NAME

Eubank Animal Clinic

REFERRING VET

Dr. Kincade

INVOICE

32193

DATE

8/7/23

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at 25mm/s; 20mm/mV. The average heart rate is 166bpm with a largely regular rhythm. 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. Rare isolated VPCs are identified; singles only, monomorphic. No APCs, pauses or other dysrhythmias observed. ECG diagnosis: Normal sinus rhythm with rare 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 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. The mitral valve is normal in structure and mobility. No MR or TR. Blood flow through both the LVOT and RVOT is normal in velocity. No obvious cause for the murmur is identified. 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	3.7	NM	0.48	1.47	0.44	40	75
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	1.0	1.2	1.0		0.9	0.8	NM
<p>*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.</p>							

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. 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.

The ECG does show infrequent 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,



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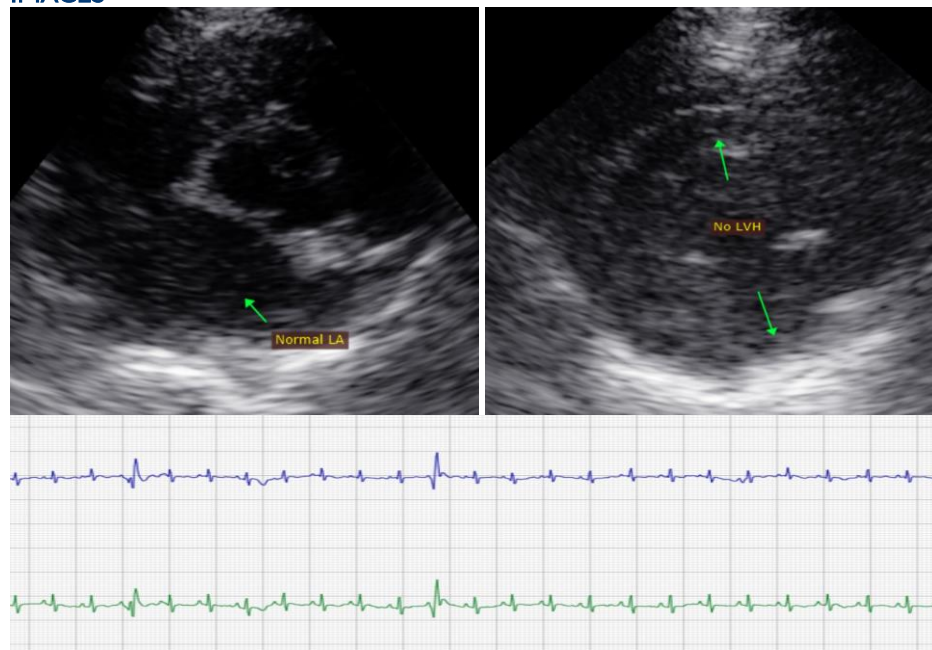
8/7/23

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.

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, and 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.

Recommend recheck echocardiogram in 1 year to assess for progression.

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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