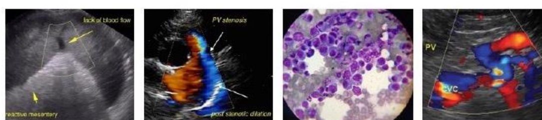


PATIENT
Muffins Edwards

SPECIES
Feline

BREED
DSH

SEX
Male Neutered

AGE
12 years

WEIGHT
10.9 lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Crystal Hill

HOSPITAL NAME
Martindale Animal Clinic

REFERRING VET
Dr. Davis

INVOICE
26159

DATE
9/1/22

PRESENTING CLINICAL SIGNS

History: Decreased appetite and decreased stool production this week. Increased respiratory effort. Pleural effusion on CXR; tap performed.
No V/D/C/S. No PU/PD. Normal appetite and activity level. Has been on Metacam.
CBC/BIOCHEM/ELEC/TT4 NSF - U/A mild proteinuria, otherwise NSF
Blood pressure 126/92, MAP 106

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.

Cardiac silhouette is obscured; however, no obvious cardiomegaly. Pleural effusion.

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; 25mm/s, 20mm/mV. The average heart rate is 220bpm 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 are seen; singles only and monomorphic. No supraventricular ectopic beats, pauses or other dysrhythmias observed.
ECG diagnosis: Sinus tachycardia with isolated VPCs.

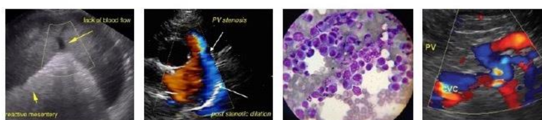
ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is largely normal in dimension with a focal septal bulge. There is a diffusely hyperechoic endocardium consistent with fibrosis. The papillary muscles are mildly remodeled and hyperechoic. The endocardium also appears remodeled. 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. Blood flow through both the LVOT and RVOT is normal in velocity. No pericardial effusion seen. Moderate volume pleural effusion. 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	5	246	0.45	1.3	0.43	53	88
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	1.1y		0.6	1.2	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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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Overtly normal cardiac structure and function. The LV wall thickness is largely normal with a focal septal thickening. This may be a normal variant; however, early hypertrophic disease is possible. A baseline T4 is recommended in this normotensive cat. Regardless, there is no evidence of elevated left atrial pressure. There is mild remodeling and fibrosis of the left ventricular wall, which is an age-related change Serial echocardiography will be necessary to determine relevance of both findings. No additional issues are identified.

The ECG does show a sinus tachycardia with presumably infrequent ventricular premature contractions or VPCs (5 seen). VPCs can develop secondary to significant cardiac disease (not present in this study) or fibrosis, or be extra-cardiac in origin (ie due to stress, pain, inflammation, systemic issues, etc). In this cat with pleural effusion, these are presumably secondary to the current crisis. 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.

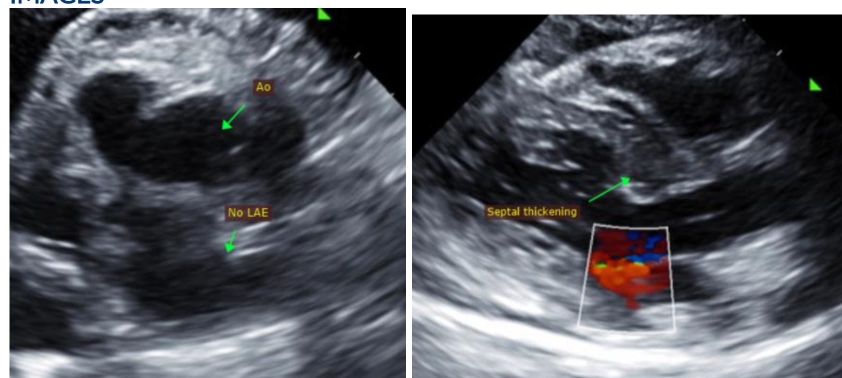
These findings would suggest pleural effusion is non-cardiac in origin. Further evaluation is recommended, including fluid cytology, focused thoracic ultrasound, thoracic CT scan, and/or full systemic evaluation.

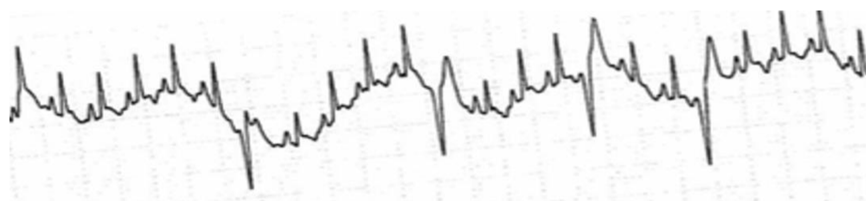
Given these findings, no medications are indicated.

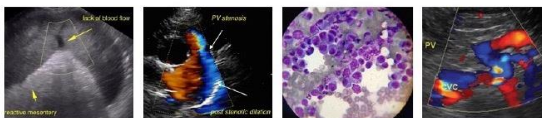
Once stabilize, there is no cardiac contraindication for general anesthesia. Mild IV fluid restriction is advised. Risk for complication with steroid use typically follows LA dilation, which in this case is low. That being said, any cat can experience unexpected signs of intolerance and monitoring of RR/RE is advised particularly in the initiation phase.

Recommend recheck echocardiogram in 1 year to screen for progressive changes.

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.

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