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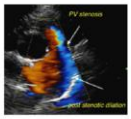
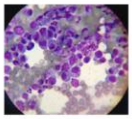
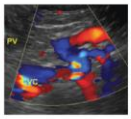

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PATIENT
Frankie Ehley

SPECIES
Feline

BREED
DSH

SEX
Male Neutered

AGE
8 years

WEIGHT
8.25lbs

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

IMAGING PERFORMED BY
Kim Liedberg

HOSPITAL NAME
SVS Imaging WI

REFERRING VET
Dr. Severson

INVOICE
28842

DATE
2/7/23

PRESENTING CLINICAL SIGNS
History: Vomiting, not eating, Advanced dental disease. Significant arrhythmia with pulse deficits.

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, 10mm/mV. The average heart rate is 230bpm with a largely regular rhythm. P waves are difficult to identify throughout; however, a sinus origin is suspected due to regularity. The QRS morphologies are positive. Isolated VPCs are noted with a single couplet. No runs of VT appreciated.
ECG diagnosis: Suspect normal sinus rhythm with ventricular arrythmias.

ECHOCARDIOGRAM FINDINGS
2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is normal in dimension with regions of mild remodeling. There is a mildly hyperechoic endocardium consistent with fibrosis. The papillary muscles are remodeled. The mitral valve is mildly thickened with no MR. The left atrium is mildly dilated and bulbous in appearance. No obvious smoke. The right atrium is mild to moderately dilated. Tricuspid valve is normal with no TR. The right ventricle appears normal. Blood flow through both the LVOT and RVOT is normal in velocity. No pericardial or pleural 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	210	0.42	1.4	0.39	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	1.8	1.6	1.33		1.2	1.0	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 finding of biatrial enlargement in the face of normal LV wall thickness is most consistent with Unclassified Cardiomyopathy (UCM). Mild to moderate left atrial dilation is present in addition to significant LV remodeling and fibrosis. No additional structural issues are identified.

The ECG shows a sinus rhythm with intermittent VPCs. While isolated VPCs are of little concern, a couplet is concerning for more malignant issues. Because of this, Atenolol is recommended as below with a recheck in 1-2 weeks then every 4-6 lifelong.

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Regardless of categorical classification, the finding of atrial dilation and arrhythmic disease confers risk for progression in the future and medications should be considered. A baseline blood pressure is also suggested. Pimobendan can be considered if the patient is easily medicated. Additionally, Plavix may be reasonable given atrial dilation to help decrease the risk of a blood clot event in the future. In an asymptomatic cat, if there is difficulty or reluctance to medicate at home it is reasonable to simply monitor going forward, with only Atenolol onboard.

The long-term prognosis given the totality of the findings is guarded; however, there is a highly variable rate of progression in cats with subclinical disease. There will always remain risk for progression to CHF and development of blood clots and/or sudden death in the future. Monitoring is certainly advised, particularly should any respiratory signs, collapse or significant lethargy be noted in the future.

Anesthetic risk is considered elevated, and the arrhythmia should be controlled and further evaluated prior to proceeding. Even then, there will be risk for fluid overload, spontaneous CHF, hypotension, etc. given LA dilation. Judicious IV fluid rates are advised to avoid fluid overload. Drugs that stimulate heart rate should be avoided unless clinically necessary (glycopyrrolate, atropine). Avoid ketamine, telazol, acepromazine and Dexdomitor. 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' heart can develop evidence of intolerance and fluid retention.

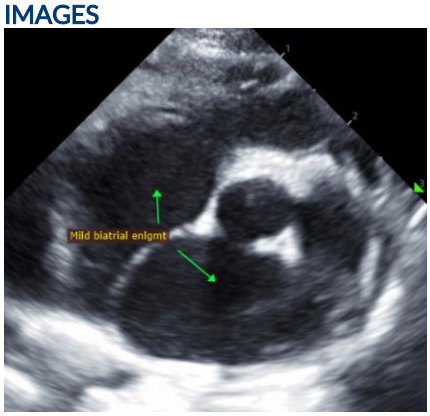
PLAN

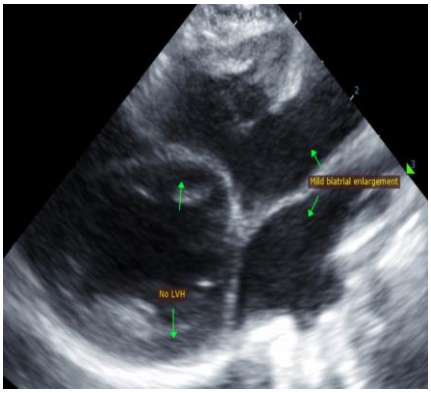
Recommend institute atenolol: Administer 6.25mg PO q24h at night. If elect to medicate further, oral medications are suggested as follows: Institute blood thinner Clopidogrel (Plavix) 75mg tablets; give ¼ tab orally once daily (NOTE: this medication is very bitter on the cut edges). Institute off label Pimobendan 1.25mg PO q12h.

Recheck ECG in 1-2 weeks to assess response, sooner if any lethargy/syncope develops.

A recheck echocardiogram is recommended in 6 months to assess progression.

IMAGES





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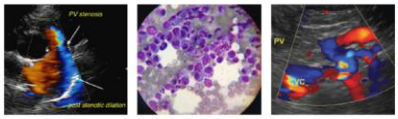

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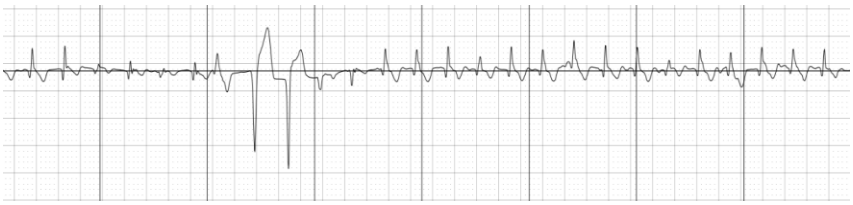

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. 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