



## PATIENT

Artemis Cavanaugh

## SPECIES

Feline

## BREED

DSH

## SEX

Male Neutered

## AGE

1.5 years

## WEIGHT

11lbs

## INTERPRETED BY

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

## IMAGING PERFORMED BY

Schneck, DVM

## HOSPITAL NAME

Willamette Veterinary  
Hospital

## REFERRING VET

Dr.Schneck

## INVOICE

23865

## DATE

4/25/22

## PRESENTING CLINICAL SIGNS

History: Significant grade 4/6 heart murmur. Arrived for lethargy and lameness.

-Abnormal PE/Chem/CBC/UA Results: CBC- WNL CHEM 10-BG 69\*\*suspect spurious from delayed separation-BG on EPOC 95, creat 0.6, TP 9.3, Glob 5.5, (part of chem 17 run by accident, normal GGT, chol and amylase, TP 8.1) EPOC - iCa 1.16, PCO2 24.3, Po2 50.4, BE -8.7, HCT 37% BNP- Abnormal 1454.2 \*\* FeLV/FIV testing - negative x 3

## ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is markedly thickened (PW > IVS), with obliteration of the LV chamber. There is a diffusely hyperechoic endocardium consistent with fibrosis. Papillary muscle hypertrophy, The right ventricle is normal. There is moderate left atrial enlargement present. No visible smoke. Abnormal anterior motion of the mitral valve is present, with the tip visible in the LVOT during systole (see below), not captured on Spectral doppler with a normal aortic outflow velocity. The anterior leaflet of the MV is elongated and thickened, consistent with dysplasia. No obvious mitral regurgitation present. No other obvious valvular regurgitation is present. No obvious intra or extracardiac shunts seen. There is no pericardial effusion noted. No pleural effusion appreciated.

## 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	5.0	NM	0.8	1.1	0.95	40	76
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	NM	1.7	1.6		1.6	0.94	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 diagnosis and cause of the murmur is likely mitral valve dysplasia leading to LV hypertrophy and an obstructive LVOT flow pattern. A primary hypertrophic component cannot be ruled out as a concurrent issue in this young cat. A screening BP and T4 are highly recommended as contributing factors. Moderate LA dilation is present, indicating the risk for imminent complication is low, however risk for progression is high. Patient will always be at risk for development of spontaneous CHF and/or a thrombotic event as the disease progresses. No additional issues are identified.

Given the history, there is concern that a cardiogenic thrombus may have been the cause of forelimb lameness. Plavix is certainly recommended regardless, given LA dilation.



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While no medications have been shown to definitively alter long term outcome at this stage of disease, atenolol is often initiated to decrease the outflow obstruction. In cases of solely primary MV dysplasia this can lead to improvement in the degree of obstruction and hypertrophy. Given the relatively young age of the cat and today's findings it is definitely recommended at this time as below. An ACE-I is also reasonable due to the extent of fibrosis and LA dilation and can be considered if the patient is easily medicated.

Unless necessary, anesthesia is not recommended until assess response to medication in 6 months. If necessary, there is high risk for fluid overload, spontaneous CHF, hypotension, etc. 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. Careful use of iatrogenic fluid administration and/or steroids is recommended, if necessary, in the future, as this patient is at high risk for fluid intolerance. Close monitoring of RR/RE is advised to screen for fluid overload.

Monitor at home for any respiratory signs or evidence of blood clot events (neurologic change, paralysis, etc.).

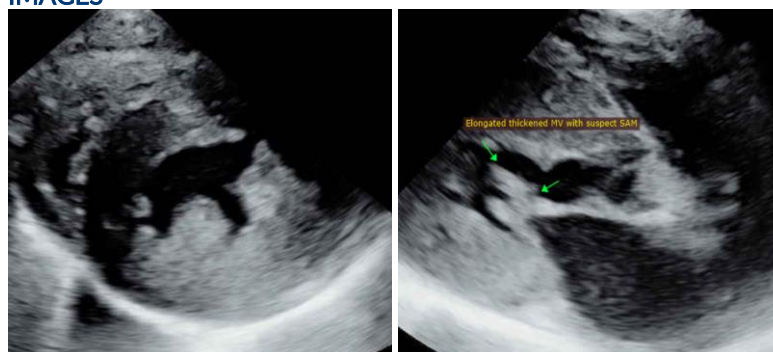
Long term prognosis is guarded given the highly variable nature of asymptomatic feline heart disease. Many cats will remain asymptomatic until mid-life or beyond, while others develop CHF within the first years. Close monitoring for progressive LA dilation in the future will help determine long term prognosis and dictate need for additional medications.

## PLAN

Screening BP and T4. If able, administer titrating dose of atenolol: 25mg tablets; Give ¼ tab once daily. Recheck heart rate in 1-2 weeks with target stressed rate of 140-160bpm 12-24 hours post-administration. Increase as needed until target reached. Consider ACE-I as discussed, 0.5mg/kg PO q12h. Consider anti-coagulant Plavix/Clopidogrel as discussed, 75mg tabs; Give ¼ tab by mouth every 24 hours (NOTE: bitter along cut edge, may cause foaming at the mouth; coat in entirety).

Recommend recheck echocardiogram in 6 months to assess for progression and response to therapy, sooner if clinical issues arise.

## IMAGES





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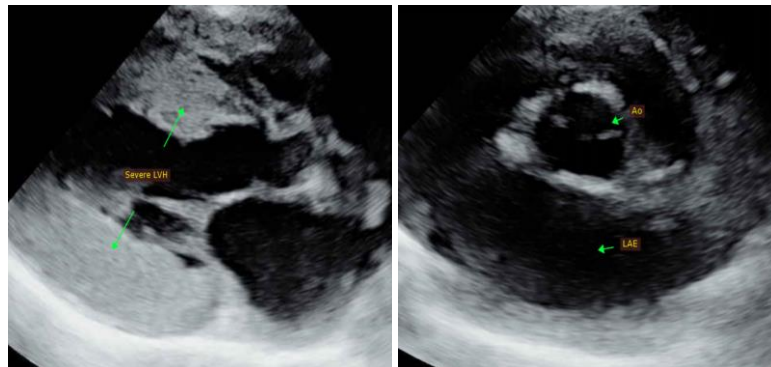
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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  
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