



## PATIENT

Penny Fox-Lee

## SPECIES

Feline

## BREED

DSH

## SEX

Femal Spayed

## AGE

6 years

## WEIGHT

10lbs

## INTERPRETED BY

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

## IMAGING PERFORMED BY

Mark van Campen,  
DVM

## HOSPITAL NAME

Mississippi Mills  
Animal Hospital

## REFERRING VET

Dr. van Campen

## INVOICE

23876

## DATE

4/26/22

## PRESENTING CLINICAL SIGNS

History: New heart murmur, grade 4/6. Episode of CHF 4/2/22. Normotensive at initial exam.  
-Current medications: Furosemide.  
-Sedation: Gabapentin.

## ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is moderately hypertrophied. The papillary muscles are hypertrophied. The LVOT flow velocity is elevated on color flow, doppler is suspected to be an underestimation. The anterior MV can be seen impinging on flow through the LVOT. The anterior mitral valve leaflet is elongated, thickened and dysplastic; however, no evidence of stenosis. There is a normal LV diameter in diastole. The left atrium is severely increased in diameter with a horizontal component. No obvious smoke. The right atrium is normal in size. The right ventricle appears normal. There is moderate eccentric mitral regurgitation present secondary to abnormal valve motion. No TR. Blood flow through the RVOT is normal in velocity. No evidence of cardiac tumors or metastatic lesions on this scan. No pericardial effusion.

## CARDIAC CHART

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm) (Moise, Pipers)	LVIDd (cm) (Moise, Pipers)	LWVd (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	4.54	NM	0.75	1.36	0.72	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	NM	2.2	1.8		1.3	1.5	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 presumptive diagnosis and cause of the murmur is mitral valve dysplasia leading to an obstructive LVOT flow pattern, mitral regurgitation and significant LV hypertrophy. A primary hypertrophic component also contributing cannot be ruled out prior to assessing response to therapy. There is severe left atrial dilation, indicating the risk of spontaneous CHF and/or a thrombotic event is elevated. No additional issues are noted at this time.

Given the severity of disease, the historical diagnosis of congestive heart failure is supported. Full lifelong cardiac support is recommended as below including atenolol therapy. Long term prognosis is guarded to poor, with high risk for spontaneous decompensation, development of a blood clot, and/or malignant arrhythmias/sudden death. Most cats in CHF are able to be managed on medications for an average of 12 months, however QOL is typically good if able to



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be medicated. The exception to this would be MV dysplasia cases where the structural disease improves following adequate rate control. Follow up will dictate long term picture.

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Lifelong cardiac support is recommended, with the addition of Lasix, Plavix, an ACE-I and atenolol. The first step is simply stabilization through Lasix therapy and oxygen (which was previously done). Atenolol is used to decrease the outflow obstruction, and in cases of solely primary MV dysplasia this can lead to improvement in the degree of obstruction and hypertrophy. That being said, administration of a beta blocker can lead to worsening congestive signs with active effusion/edema and should only be instituted if the patient is doing well at home. Plavix (Clopidogrel) should also be used given a high risk for thrombotic events, however, is difficult to administer due to a bitter taste. Finally, an ACE-I is indicated for multiple reasons however should not be utilized until the patient is eating/feeling well. See medication recommendations below.

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

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Elective anesthesia is not advised.

**WEIGHT**

10lbs

**PLAN**

If the patient is currently asymptomatic, administer Lasix 1-2mg/kg PO q12h. Administer Plavix 75mg tablets; give ¼ tab orally once daily (NOTE: this medication is very bitter on the cut edges). Administer titrating dose of atenolol: 25mg tablets; Give ¼ tab once daily at night. 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.

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Recheck BP and heart rate in 1-2 weeks, then every 3-4 months lifelong. If doing well, able to be medicated and BP is >130mmHg, institute ACE-I 0.5mg/kg PO q12h.

**IMAGING PERFORMED BY**

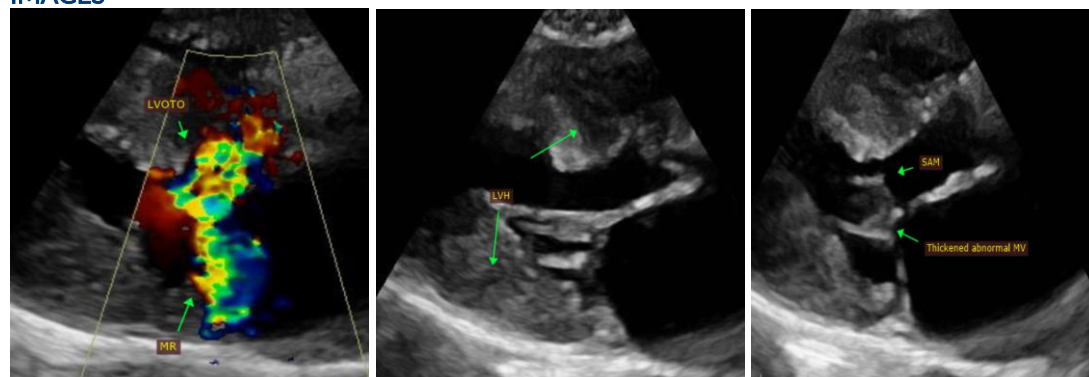
Mark van Campen,  
DVM

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

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**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.

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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.

**BREED**

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Maggie Machen Lamy, DVM  
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