



**PATIENT**

George Liquori

**SPECIES**

Feline

**BREED**

Sphynx

**SEX**

Male Neutered

**AGE**

2 years

**WEIGHT**

9.3lbs

**INTERPRETED BY**

Maggie Machen  
Lamy, DVM  
DACVIM (Cardiology)

**IMAGING PERFORMED BY**

Pamela Harrigan,  
RDCS

**HOSPITAL NAME**

Mass Veterinary Services

**REFERRING VET**

Dr. Masloski

**INVOICE**

26464

**DATE**

9/21/22

**PRESENTING CLINICAL SIGNS**

History: George was noted to have a heart murmur in May. A ProBNP level was noted to be elevated. He is eating well with a possible decrease in his appetite lately. Active and playful. On exam: NSR, grade IV/VI parasternal murmur, PSS, lung fields clear, compressible thorax. BP: 130-140mmHg. Currently, no medications. \*No sedation for study.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and Doppler imaging is available.

**Left ventricle:** The LV diameter is mildly increased with adequate myocardial function.

The LV wall thicknesses are asymmetric with a normal septal dimension and mild free wall thickening. There is a diffusely hyperechoic endocardium consistent with mild fibrosis. The endocardium appears remodeled. The papillary muscles are highly abnormal with suspicion of a fused hypertrophied single muscle.

**Left atrium:** The left atrium is moderately increased in dimension. No smoke or thrombi visualized.

**Mitral valve:** The mitral valve is elongated without significant thickening. The tip of the mitral valve is visible in the LVOT during systole. Mild to moderate eccentric mitral regurgitation is noted secondary to SAM.

**Aortic valve/Aorta:** The aortic valve is normal in morphology and mobility. Aortic outflow velocities are moderate to severely elevated with a dynamic profile. No aortic insufficiency.

**Right ventricle:** Normal right ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension.

**Right atrium:** The right atrium is normal in dimension.

**Tricuspid valve:** The tricuspid valve appears normal with no tricuspid regurgitation.

**Pulmonary valve/Pulmonary artery:** The pulmonic valve is normal in morphology and mobility. No pulmonic insufficiency. Mildly elevated RVOT velocity with a dynamic component.

**Pericardium/other:** No pericardial or pleural effusion noted. No obvious cardiac masses.

**Heart rhythm:** ECG reveals a sinus rhythm with an average HR of 250bpm.

**2-Dimensional Measurements**

Ao diam (cm)	1.0
LA diam (cm)	1.8
LA:Ao (Swe)	1.8
IVS thickness (cm)	0.56
LVID diastole (cm)	2.0
PW thickness (cm)	0.66
LVID systole (cm)	0.9
FS (%)	55

**Doppler Measurements**

PV Vmax (m/s)	2.8
AoV Vmax (m/s)	4.3
MR Vmax (m/s)	NA
TR Vmax (m/s)	NA
TR PG (mmHg)	NA

**INTERPRETATION OF THE FINDINGS**

The diagnosis and cause of the murmur is mitral valve dysplasia leading to an obstructive LVOT flow pattern and mild to moderate MR. What is unusual is there is only mild asymmetric LV hypertrophy present with diffuse remodeling and mild dilation of LV. The papillary muscles are highly atypical as well with an abnormal fused morphology. Most importantly, there is moderate left atrial dilation, indicating the risk for progression to spontaneous CHF and/or a thrombotic event is elevated going forward. No additional issues are identified.



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Long term prognosis is certainly guarded in this case given the age of the patient, although asymptomatic feline heart disease is highly variable. Many cats will remain asymptomatic until mid-life or beyond, while others develop CHF within the first years. Close monitoring for progression of LA dilation in the future will help determine long term prognosis.

**SPECIES**

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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 a lack of significant LV hypertrophy it is unknown how beneficial this medication will be; however, it is reasonable to attempt to relieve the obstruction going forward. Additionally, an anticoagulant could be argued with this degree of atrial dilation, however this medication can be very difficult to administer.

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**RECOMMENDATIONS**

- 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.
- If elected/possible, administer Clopidogrel (Plavix) 75mg tabs, give ¼ tab PO q24 h (NOTE: This medication is very bitter along the cut edge and may cause oral foaming).
- Elective anesthesia is not advised until response to atenolol is evaluated.
- Monitor for any clinical evidence of cardiac compromise, including respiratory changes and/or signs of a blood clot event (paralysis, neurologic changes, etc.).

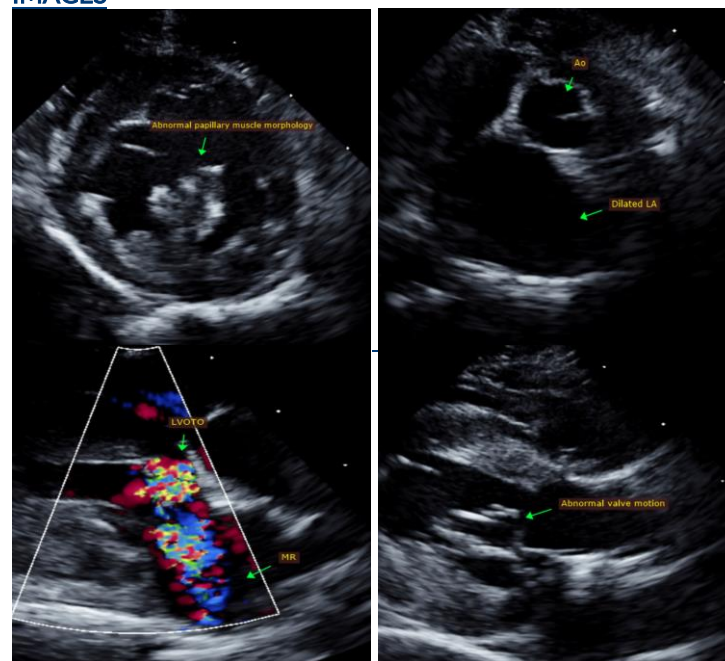
**PLAN**

- Recommend recheck echocardiogram in six months to assess for progression, sooner if clinical signs arise in the interim.

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Lamy, DVM  
DACVIM (Cardiology)

**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.

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Sphynx

Maggie Machen Lamy, DVM  
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info@sonopath.com

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Echocardiogram performed by: Pamela Harrigan, RDCS  
Pet Animal Ultrasound Service (4paus.com)

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