



**PATIENT**  
Onyx Walters-Zucco

**SPECIES**  
Feline

**BREED**  
DSH

**SEX**  
Female Spayed

**AGE**  
5 years

**WEIGHT**  
12.94lbs

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

**IMAGING PERFORMED BY**  
Pamela Harrigan,  
RDCS

**HOSPITAL NAME**  
Mass Veterinary Services

**REFERRING VET**  
Dr. Masloski

**INVOICE**  
29140

**DATE**  
2/21/23

**PRESENTING CLINICAL SIGNS**

History: Onyx is referred to evaluate a heart murmur. She does have some open mouth breathing after running a great deal. Good appetite. On exam: NSR, grade IV/VI parasternal murmur, PSS, lung fields clear, compressible thorax, mm pink, moist, CRT < 2. BP: 150 mmHg x 5. Currently, no medications.

**ECHOCARDIOGRAM FINDINGS**

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

**Left ventricle:** The LV chamber is normal with adequate myocardial function. The LV wall thicknesses are mildly increased. There is a diffusely hyperechoic endocardium consistent with fibrosis. The papillary muscles are remodeled and hyperechoic. The endocardium appears mildly remodeled.

**Left atrium:** The left atrium is mildly dilated.

**Mitral valve:** The anterior leaflet of the mitral valve appears mildly elongated. Systolic anterior motion is seen on 2D imaging. Mild eccentric MR.

**Aortic valve/Aorta:** The aortic valve is normal in morphology and mobility. Severely increased aortic outflow velocity 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. The RVOT velocity is normal.

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

**2-Dimensional Measurements**

Ao diam (cm)	1.0
LA diam (cm)	1.4
LA:Ao (Swe)	1.4
IVS thickness (cm)	0.56
LVID diastole (cm)	1.6
PW thickness (cm)	0.57
LVID systole (cm)	0.54
FS (%)	69

**Doppler Measurements**

PV Vmax (m/s)	1.3
AoV Vmax (m/s)	5.7
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 hypertrophic obstructive cardiomyopathy (HOCM). This indicates some degree of LV thickening (mild in this case) with a dynamic LVOT obstruction (SAM). The MV is mildly elongated, which may suggest a valvular component. Mild LV hypertrophy is present with mild LA enlargement, indicating the risk for progression to spontaneous CHF and/or a thrombotic event is currently low. No additional issues are identified.

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. This is recommended in this case given these findings and a relatively young cat. Prognosis is guarded, although highly variable at this stage of disease. Patient may be risk for progression to CHF, development of blood clots and/or sudden death in the future.



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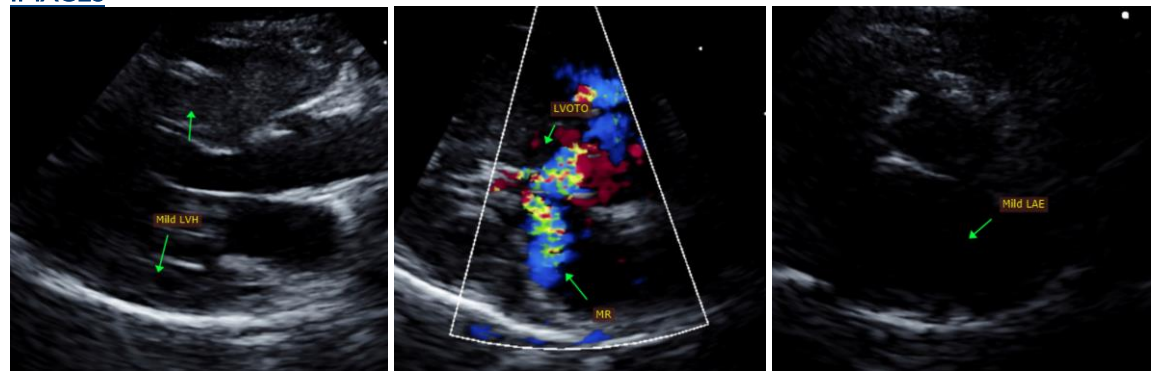
**RECOMMENDATIONS**

- 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.
- Screening BP/T4 if not recently performed.
- Anesthetic risk is considered mildly elevated, with 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.
- 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 6 months to assess rate of progression, sooner if any issues arise in the interim.

**IMAGES**



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

Echocardiogram performed by:

Pamela Harrigan, RDCS  
Pet Animal Ultrasound Service (4paus.com)