



**PATIENT**

Tuffy Barry

**SPECIES**

Feline

**BREED**

DSH

**SEX**

Female Spayed

**AGE**

10 years

**WEIGHT**

8lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Sarah Pender, CVT

**HOSPITAL NAME**

SVS Imaging QC

**REFERRING VET**

Dr. Plazek

**INVOICE**

28543

**DATE**

1/24/23

**PRESENTING CLINICAL SIGNS**

History: Respiratory distress and open mouth breathing

**RADIOGRAPHIC FINDINGS** \*NOTE: Images submitted for supplemental cardiac information only. Significant cardiomegaly with evidence of CHF.

**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, 20mm/mV. The average heart rate is 214bpm with a largely regular rhythm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive. No ectopic beats, pauses or other dysrhythmias observed. ECG diagnosis: Normal sinus tachycardia.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Moderate left ventricular dilation with diminished systolic function. The LV wall thickness is asymmetric, with normal septal dimension and regions of thinning along the free wall. Marked left atrial enlargement with subtle smoke seen. Significant smoke seen within the left auricle. No obvious organized thrombus. The mitral valve appears normal in form and function, with no obvious prolapse into the left atrial lumen. Mild central mitral regurgitation. The tricuspid valve appears normal in form and function. No right atrial dilation. Trace tricuspid regurgitation. The aortic valve is normal in morphology and mobility. Decreased LVOT and RVOT velocities. No aortic or pulmonic insufficiency. No pericardial or pleural effusion noted. No obvious cardiac tumors.

**CARDIAC CHART**

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm) <small>(Moise, Pipers)</small>	LVIDd (cm) <small>(Moise, Pipers)</small>	LVWd (cm) <small>(Moise, Pipers)</small>	FS (%)	EF (%)
NORMAL PARAMETER	-----	150-240	0.35-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
PATIENT	3.6	200	0.25	2.0	0.25	19	42
FELINE CARDIAC PARAMETERS	LA/AO <small>(Boon)</small>	LA/AO HEART BASE (Swe) <small>(Abbott)</small>	LA 2D short axis Base view (cm) <small>(Abbott)</small>	LVOT VEL <small>(m/s)</small>	RVOT VEL <small>(m/s)</small>	E max <small>(m/s)</small>	
NORMAL	<1.5	<1.3	<1.2	<1.6	<1.3	<0.9	
PATIENT	2.8	2.5	2.0	0.6	0.8	NM	
<p><i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i> Adapted from June Boon, Veterinary Echocardiography, 1998 Abbott J &amp; 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.</p>							

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Unfortunately, this patient has end-stage cardiomyopathy and systolic dysfunction. This is causing dilation and overload of the left heart, resulting in insufficiency of the mitral valve. The degree of dilation and pump failure is resulting in suspected congestive heart failure based upon reported symptoms and radiographic abnormalities. The ECG is unremarkable; however, occasional premature beats are noted throughout the study.

In cats, systolic failure can be primary in nature (DCM); however, this is relatively uncommon. An advanced form of restrictive cardiomyopathy (RCM) with development of systolic dysfunction is also possible. Finally, systolic failure can develop secondary to taurine deficiency, myocarditis, or infiltrative disease such as lymphoma. Taurine deficiency is highly uncommon in cats on commercially prepared cat foods; however, can consider taurine supplementation in case of an absorption issue.

These findings support the diagnosis of congestive heart failure and immediate lifelong cardiac support is recommended as below. If medicating the patient is difficult at home, consider liquid Lasix and/or compounding the medications into a liquid or alternative option. Prognosis is poor to grave at this stage in the disease process, with an average survival time of <6 months. Most cats are able to maintain a good QOL for some time however on oral medication. High risk for recurrent CHF, development of blood clot events and/or malignant arrhythmias/sudden death at home should be discussed.

Monitor for development of labored breathing, limb paralysis/neurologic changes and/or collapse episodes in the future. Periodic Thoracocentesis will be necessary going forward. Monitoring of sleeping breathing rates at home is recommended to assess response to medications and recurrence of CHF in the future.

**PLAN**

Consider hospitalization for stabilization. Administer Lasix/furosemide 1-2mg/kg PO q12h. Institute anti-coagulant Plavix/Clopidogrel 75mg tabs; Give ¼ tab by mouth every 24 hours (NOTE: bitter along cut edge, may cause foaming at the mouth; coat in entirety). Institute heart muscle support Pimobendan 1.25mg by mouth every 12 hours (off label use). Consider supplement taurine 500mg daily.

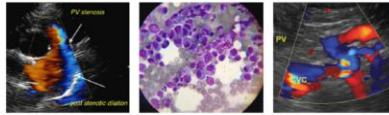
Recheck renal panel and BP in 1-2 weeks then every 3-4 months lifelong. Do not utilize an ACEI in this patient. If patient continues to have respiratory changes at home, addition of spironolactone is recommended 1-2mg/kg PO q12h.

\*NOTE: Many cats are difficult to medicate, and multiple medications can be overwhelming. If there is difficulty at home, Lasix and Plavix are considered most important. Consider compounding if needed.

Recheck echocardiogram in 6 months to reassess cardiac function.

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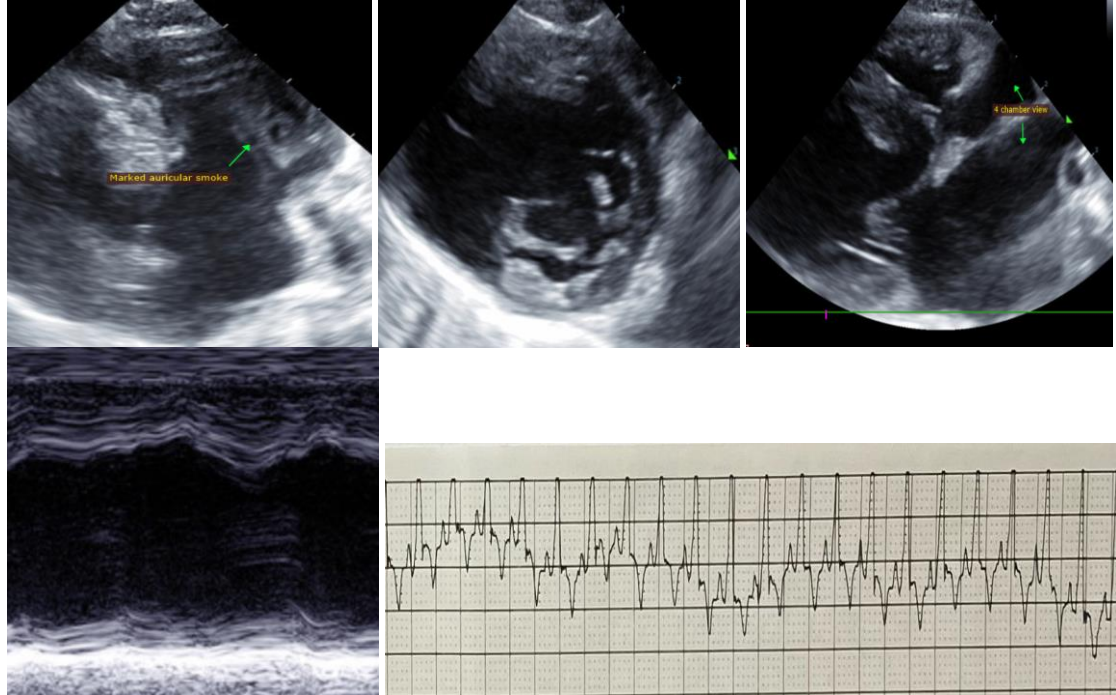
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**IMAGES**



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. 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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