

**PATIENT**  
Hubbie Mitchell

**SPECIES**  
Feline

**BREED**  
DSH

**SEX**  
Male Neutered

**AGE**  
10 years

**WEIGHT**  
17.2lbs

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

**IMAGING PERFORMED BY**  
Jenna Walsh, CVT

**PRESENTING CLINICAL SIGNS**

History: Tachypnea, short shallow breaths, crackles on auscultation and mild expiratory wheeze. 2. Significant gallop arrhythmia 3. Lack of recent urination, no straining or frequent trips to the box 4. Otherwise, no changes, abdomen soft on palpation.

-Current medications: Prednisolone 5mg SID (started 2 days ago), Convenia 8mg/kg on 10/11/22, TCVM Breathe Easier.

-Abnormal PE/Chem/CBC/UA Results: CBC - mild eosinophilia, otherwise wnl -- linked - Chemistry - hyperglycemia at 294 ug/dL, otherwise wnl -- linked - SDMA - mildly elevated at 15 ug/dL - T4 - normal at 1.7 ug/dL.

**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; 50mm/s, 20mm/mV. The average heart rate is 200bpm (range 190-214bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive. A single fusion beat is possible; however, artifact is suspected. No obvious VPCs, pauses or dysrhythmias observed. ECG diagnosis: Normal sinus tachycardia.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is normal with regions of remodeling and irregularity. There is a diffusely hyperechoic endocardium consistent with fibrosis. The systolic function is decreased with evidence of diastolic dysfunction as well. The papillary muscles are mildly remodeled. The left atrium is markedly dilated. No obvious spontaneous contrast; no obvious thrombus. Mild central MR due to annular stretch. The right ventricle is also affected, with diffuse fibrosis and remodeling. Moderate RA dilation. Mild central TR. Blood flow through the RVOT and LVOT is low normal velocity. Small to moderate pericardial effusion. No obvious pleural effusion seen. Hepatic congestion and ascites on subcostal images. No obvious cardiac tumors

**CARDIAC CHART**

**HOSPITAL NAME**

The Veterinary Hospital

**REFERRING VET**

Dr. Berman

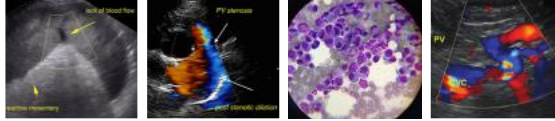
**INVOICE**

26887

**DATE**

10/13/22

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	7.8	206	0.48	2.4	0.55	29	52
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	2.8	>3.0	2.6		1.2	0.6	NM
<p>*Note: All measurements based upon multi-modal images and methods. An average value is reported.            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**

The finding of severe biatrial enlargement in the face of normal/decreased LV wall thickness and systolic dysfunction is most consistent with Restrictive Cardiomyopathy (RCM); however, DCM or some historical infectious or inflammatory insult to the myocardium cannot be definitively ruled out. The biatrial dilation is causing insufficiency of both AV valves, and systolic dysfunction has developed. The ECG is unremarkable with a normal sinus rhythm.

The finding of this degree of biatrial dilation confirms the origin of the tachypnea and pericardial effusion is spontaneous congestive heart failure, and immediate lifelong medications are warranted as below. This patient is at high risk for thromboembolic events regardless of medications and this should be expressed to the owner (monitor for neurologic change, acute paralysis/lameness, etc.). **Recommend hospitalization for continued stabilization, oxygen and Lasix therapy.** A thoracocentesis should also be considered if significant pleural effusion is identified (not ruled out in this study). The prognosis is **poor to grave**, with a mean survival time for cats with CHF <8-12 months, however most are able to maintain a good quality of life on medications if able to be stabilized. There will always remain risk for recurrent episodes of CHF, development of blood clots, arrhythmias, and/or sudden death in the future. Monitoring of sleeping breathing rates at home is recommended as the best way to screen for recurrent CHF at home.

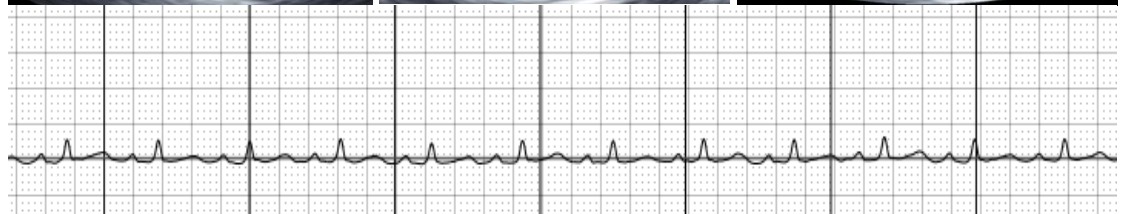
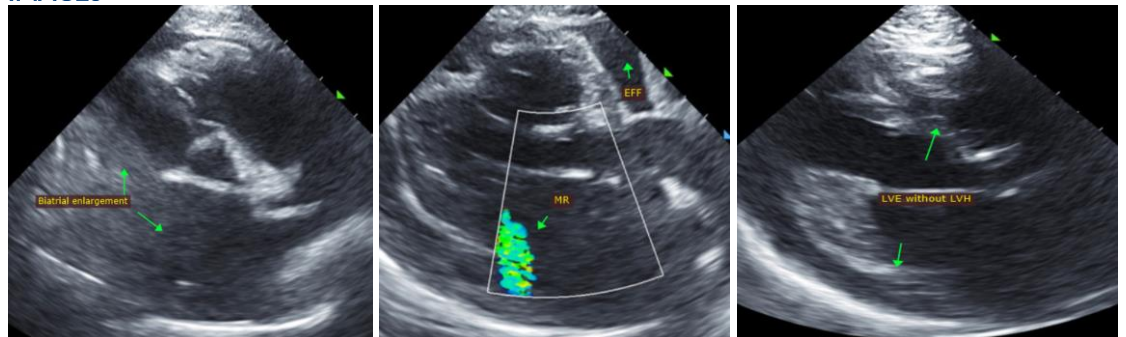
**PLAN**

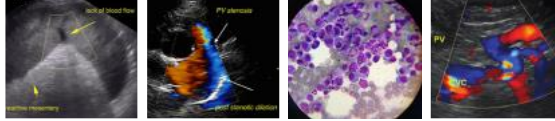
Consider thoracocentesis if indicated, hospitalization, oxygen, IV diuretic in hospital until stabilized. Oral medications: furosemide 1-2mg/kg PO q12h. Institute blood thinner Clopidogrel (Plavix) 75mg tablets; give ¼ tab orally once daily (NOTE: this medication is very bitter on the cut edges). Institute Pimobendan (off label use) 1.25mg PO q12h.

Once stabilized, eating well at home and BP >130mmHg, consider addition of vasodilator ACE-I (benazepril or enalapril) 0.5mg/kg PO q12h.

Recheck renal values in 10-14 days to ensure tolerance of medications, then every 3-4 months lifelong. A recheck echocardiogram is recommended in 4-6 months to assess for progression.

**IMAGES**





**PATIENT**

Hubbie Mitchell

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.

**SPECIES**

Feline

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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DSH

**Maggie Machen Lamy, DVM**  
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)  
info@sonopath.com

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