



PATIENT

Tobias Mckenzie

SPECIES

Feline

BREED

DSH

SEX

Male Neutered

AGE

8 years

WEIGHT

18.6lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

M. Swart, DVM

HOSPITAL NAME

Swart Veterinary
Imaging

REFERRING VET

Dr. Swart

INVOICE

29879

DATE

3/28/23

PRESENTING CLINICAL SIGNS

History: Patient had cryptococcus in 2019 and recovered. Tested antigen negative since. Possible asthma since then as well. Recently owner noticed increased resp rate at home and increase in paw licking. Otherwise acting normal and eating and drinking well. Thoracic rads taken couple days ago show evidence of bilateral pleural effusion and cardiomegaly. No murmur or arrhythmia auscultated by either rDVM. Patient given 100mg of gabapentin this morning prior to echo and given 0.3ml Lasix IV this morning as well. A little less than 100ml of chylous fluid was removed via thoracocentesis following echo today.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is decreased in dimension. There is mildly hyperechoic endocardium consistent with fibrosis. The systolic function is markedly depressed with evidence of diastolic dysfunction as well. The papillary muscles are mildly remodeled. The LV is dilated with a spherical appearance. The left atrium and auricle are marked dilated. Subtle spontaneous contrast; no obvious thrombus. Mild central MR due to annular stretch. The right ventricle is also affected to a lesser extent. Mild RA dilation. Trace TR. Blood flow through the RVOT and LVOT is normal velocity. No pericardial effusion. Pockets of pleural effusion. No obvious cardiac tumors. Irregular rate and rhythm throughout.

CARDIAC CHART

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm) <small>(Moise, Pipers)</small>	LVIDd (cm) <small>(Moise, Pipers)</small>	LWVd (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	8.4	NM	0.48	2.2	0.49	23	40
FELINE CARDIAC PARAMETERS	LA/AO <small>(Boon)</small>	LA/AO HEART BASE <small>(Swe) (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	NM	2.5	2.2	1.0	0.7	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 & 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>							

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The finding of severe left atrial enlargement in the face of decreased LV wall thickness and systolic dysfunction is most consistent with Restrictive or Dilated Cardiomyopathy (RCM or DCM); however, some historical infectious or inflammatory insult to the myocardium cannot be definitively ruled out. Regardless, the disease has led to severe left atrial dilation which is causing insufficiency of the mitral valve. The right heart is affected to a lesser extent. Arrhythmias are noted throughout the study (suspect atrial fibrillation), and **an ECG is strongly recommended**. No additional issues are identified.

The history of cryptococcus is unusual. A prior infection causing cardiac damage is possible (ie myocarditis), which may have led to an elevated cardiac troponin level at the time of infection.



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Given that the patient has tested negative for years, an active ongoing infection at this time is extremely unlikely making this test likely of limited utility (ie only elevated with an ongoing infection). The fluid could be submitted for cytology, although suspicion for an active infection again is low. Regardless of if this was the case, what is seen here is irreversible and treatment is independent of inciting cause. What is more likely is primary disease has been present (occult, silent) and has led to organic CHF at this time.

The finding of this degree of left atrial dilation confirms the origin of the tachypnea and effusion is spontaneous congestive heart failure, and 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.). Consider hospitalization for continued stabilization, oxygen and Lasix therapy. A thoracocentesis should also be performed due to effusion and instability. 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.

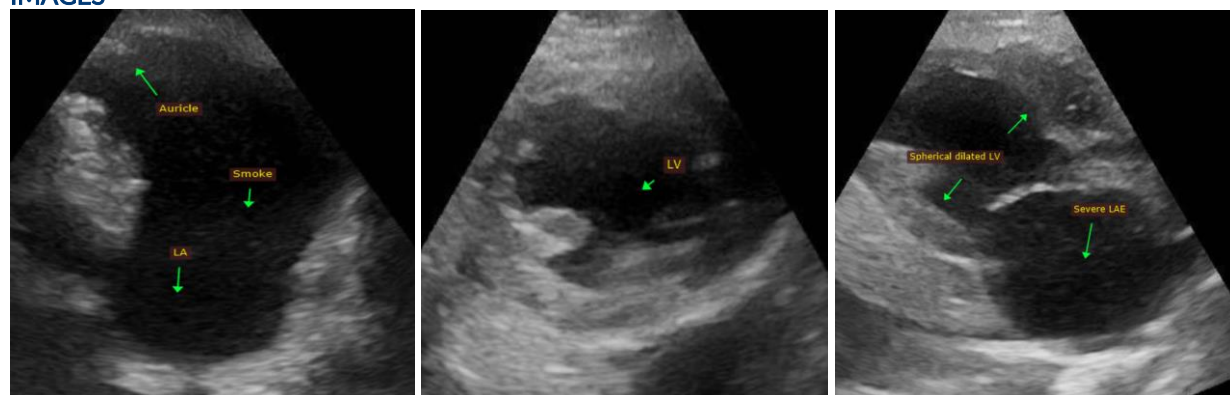
PLAN

An ECG is recommended ASAP. Consider thoracocentesis, hospitalization, oxygen, IV diuretic in hospital until stabilized due to effusion. 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. A cTnl level +/- fluid cytology can be considered if desired.

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



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.

Maggie Machen Lamy, DVM
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