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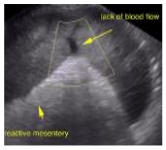
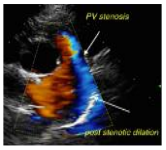
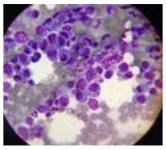
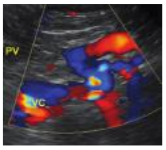

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1-800-838-4268 info@sonopath.com

PATIENT
Dexter Avello

SPECIES
Feline

BREED
DSH

SEX
Male Neutered

AGE
11 years

WEIGHT
12.68lbs

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

IMAGING PERFORMED BY
Kim Liedberg

HOSPITAL NAME
SVS Imaging WI

REFERRING VET
Dr. Bloss

INVOICE
21610

DATE
10/19/21

PRESENTING CLINICAL SIGNS

History: DX with cardiomegaly and CHF in June 2021 and started on current medications. The furosemide dose has been increased once since then. Came in 10/17/21 for emergency treatment, was gagging and coughing at home, drooling, open mouth breathing. Lat VD radiographs: generalized patchy interstitial infiltrates no pleural effusion. severe cardiomegaly VHS 9. Grade 2/6 heart murmur noted. Crackles bilaterally on inspiration.
-Current medications: Furosemide 12.5mg 1/2-tab SID mid-day, furosemide liq 10mg/ml 0.6ml BID, benazepril 3mg/ml 0.5ml SID, pimobendan 5mg/ml 0.5ml SID.
*Note: During the echo, the patient destabilized and was placed in oxygen. Limited study submitted.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.

Significant cardiomegaly. Concern for 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, 10mm/mV. The ECG recording is extremely low voltage making accurate interpretation difficult. What can be said is there are no identifiable P waves (rule out atrial fibrillation versus device insensitivity). The heart rate ranges from 188-300bpm. The rhythm is highly irregular without obvious ventricular complexes.
ECG diagnosis: Suspect atrial fibrillation; cannot rule out sinus with frequent APCs.

ECHOCARDIOGRAM FINDINGS * limited images submitted due to patient instability.

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is decreased in dimension (limited visualization). The systolic function is significantly decreased with evidence of diastolic dysfunction as well. The papillary muscles are not visualized. The left atrium is severely dilated. No obvious spontaneous contrast; no obvious thrombus. The right ventricle is also affected, with moderate right atrial enlargement. Blood flow through the RVOT and LVOT is decreased in velocity. Large volume pericardial effusion. No obvious pleural effusion. No obvious cardiac tumors.

CARDIAC CHART

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	5.8	NM	0.3	1.68	0.3	27	50
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	NM	2.5	2.3				NM

**Note: All measurements based upon multi-modal images and methods. An average value is reported.*
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.

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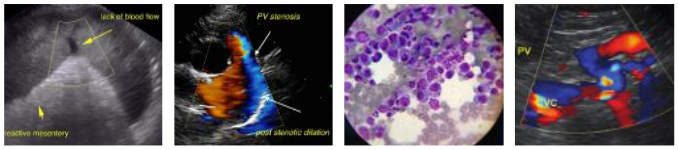

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The finding of severe biatrial enlargement in the face of decreased LV wall thickness and systolic dysfunction is most consistent with Restrictive Cardiomyopathy (RCM), however some historical infectious or inflammatory insult to the myocardium cannot be definitively ruled out. The biatrial dilation is leading to significant congestion. It is important to note that this is a limited study as the patient was highly unstable and small abnormalities such as extra-cardiac tumors may have been easily missed. A full echocardiogram is recommended once the patient is stabilized.

The finding of this degree of biatrial dilation confirms the origin of the tachypnea, chest radiographic findings and pericardial effusion is spontaneous congestive heart failure, and immediate lifelong medications are warranted as below. The patient reportedly was highly unstable during the exam and **referral for hospitalization and potentially a pericardiocentesis should be considered.** It is rare that pericardial taps need to done in cats with CHF; however, the volume is large in this instance and if this patient continues to be hypotensive/unstable this may have to be considered. If possible, **referral to a multi-specialty center is strongly recommended.**

Additionally, there is a rapid arrythmia present, most consistent with atrial fibrillation. This should be reassessed using a more sensitive ECG as the diagnosis is purely presumptive. Regardless, no treatment is indicated for the arrythmia prior to stabilizing the effusion in this case.

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. If the patient does not stabilize, humane euthanasia should be considered. 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.

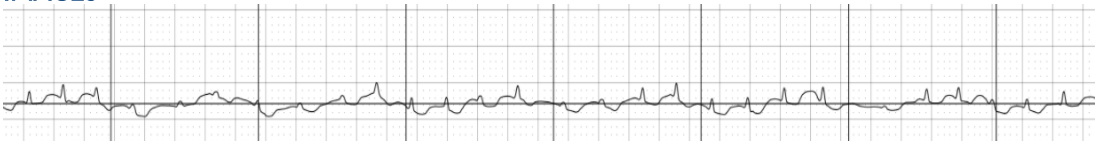
PLAN

Immediate hospitalization and consideration of pericardiocentesis. Referral to a multi-specialty center would be the gold standard approach as the patient needs 24-hour care, ECG reassessment and stabilization. Oral medications once stable are as follows: 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. Consider a full echocardiogram at this point.

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



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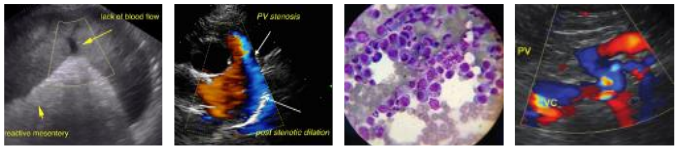

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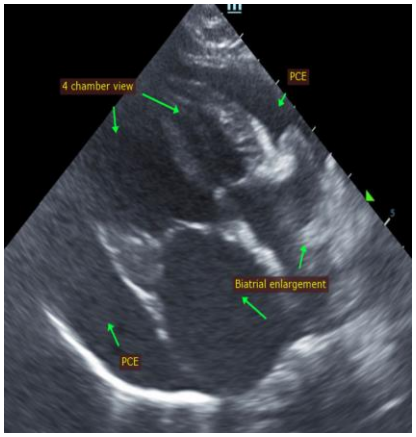

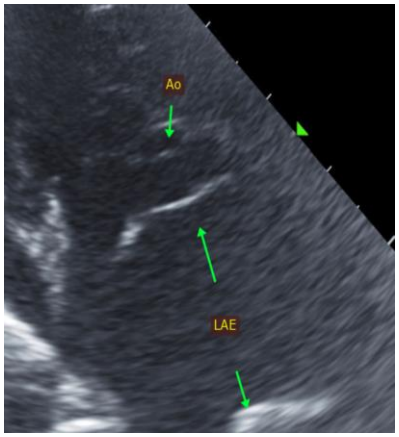

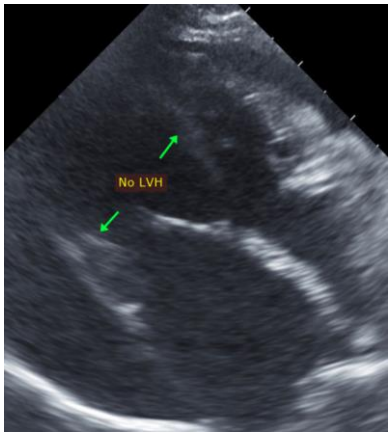

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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