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Clinical Sonography & Telecytology
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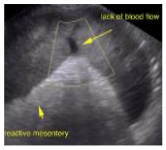
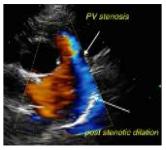
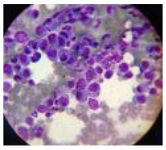
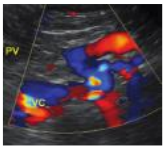

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1-800-838-4268 info@sonopath.com

PATIENT
Merlin Thorne

SPECIES
Feline

BREED
DSH

SEX
Male Neutered

AGE
11 years

WEIGHT
14.4lbs

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

IMAGING PERFORMED BY
Jessica Bailes

HOSPITAL NAME
All Creatures Grat & Small Veterinary Clinic

REFERRING VET
Dr. Vaughn

INVOICE
23515

DATE
4/7/22

PRESENTING CLINICAL SIGNS

History: History of hyperthyroidism recently diagnosed but well controlled per most recent lab work. Examined yesterday for acute onset abdominal enlargement. Slightly decreased energy level but otherwise no other concerns.
-Abnormal PE/Chem/CBC/UA Results: Significant mm wasting epaxials, muffled heart sounds, significant ascites. Most recent lab work done 3/19/22: WNL - TT4 high normal @ 3.5 BP: very hypertensive today with systolic >200.

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

Severe cardiomegaly. Pleural and abdominal effusion; 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, 40mm/mV. mm marks are difficult to visualize, making detailed interpretation difficult. There are two competing rhythms, neither of which appears to have a consistent PR interval. The average heart rate is 130bpm, with a max recorded rate of 150bpm.
ECG diagnosis: Complex multi-focal arrythmias with overall bradycardia.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is high normal in dimension. The LV is normal in dimension with adequate myocardial function. There is a mildly hyperechoic endocardium consistent with fibrosis. The papillary muscles are mildly remodeled. The left atrium is moderate to severely dilated. No mitral regurgitation. The right atrium is moderate to severely dilated with no obvious spontaneous contrast. The right ventricle appears dilated with a thin remodeled wall. RV systolic function appears intact. Severe tricuspid regurgitation. Normal TR velocity. Blood flow through both the LVOT and RVOT is low normal in velocity. No AI or PI. Mild to moderate pleural effusion noted. Scant pericardial effusion seen. No obvious intra or extra-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	6.5	NM	0.57	1.37	0.54	60	92
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	1.7	1.8	1.75		1.4	0.7	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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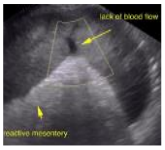

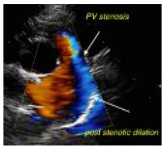

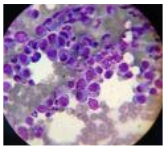
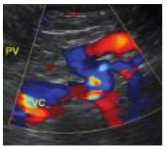

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The finding of significant biatrial enlargement in the face of normal LV wall thickness is most consistent with unclassified cardiomyopathy. The right heart appears more affected than the left with severe TR, which may suggest a primary RV issue. Regardless, both atria are significantly dilated, indicating high risk for complication.

The ECG is difficult to decipher without multiple leads and clear mm marks. What can be said is there is an overall bradycardia with two competing rhythms, suggesting a conduction issue. Neither rhythm is definitively sinus in origin and may reflect an ancillary process such as AV block, etc. Highly recommend immediate referral for further evaluation of both abnormalities in this case. A six-lead ECG tracing will likely be useful to determine if any further treatment is warranted.

Regardless of categorical classification, this degree of disease confirms tricavitary effusion is due to spontaneous congestive heart failure. Immediate lifelong medications are warranted as below. A therapeutic tap should be performed if needed for breathing or abdominal comfort. Continued supportive care, medical management and monitoring of renal values is recommended to ensure both clinical improvement and tolerance of medications. If the bradycardia is related to the patient's decompensation, this may be very difficult to treat without further investigation and improving cardiac output. Given the totality of the findings, referral remains the recommended option in this case. If declined, attempting medical management as below with close monitoring of quality of life is recommended.

The mean survival time for cats with CHF and thrombotic events is <6 months, however most are able to maintain a reasonably good quality of life on medications. There will always remain risk for recurrent episodes of CHF, malignant arrhythmias and/or development of further blood clots in the future. Monitoring of sleeping breathing rates at home is recommended as the best way to screen for recurrent CHF at home.

PLAN

Highly recommend immediate referral to a local Cardiologist/ER for a six-lead ECG tracing, hospitalization and further evaluation/treatment. If declined, attempt the following oral medications with an abdominal or thoracic tap as needed. Institute Lasix 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 1.25mg PO q12h.

Recheck renal values and BP in 10-14 days to ensure tolerance of medications. If doing well and BP is >130mmHg, institute ACE-I 0.5mg/kg PO q12h.

A recheck echocardiogram is recommended in 6 months to assess progression.

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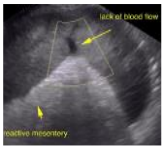
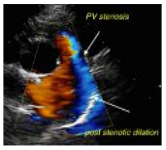
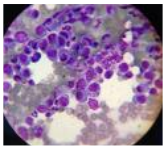
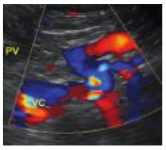

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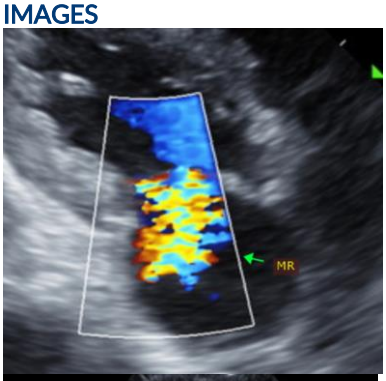
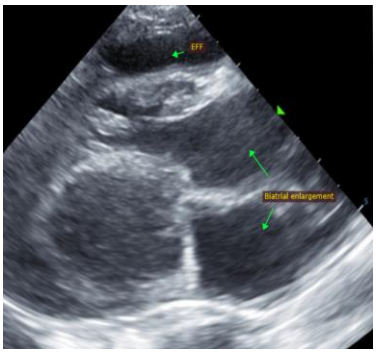
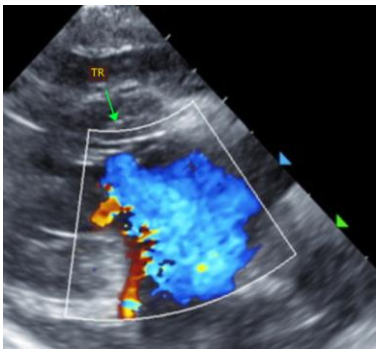
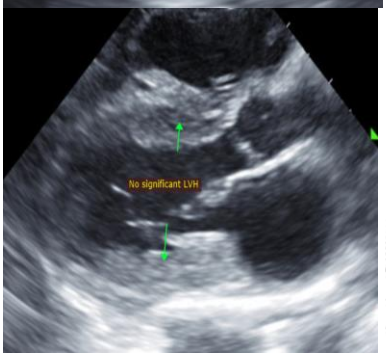
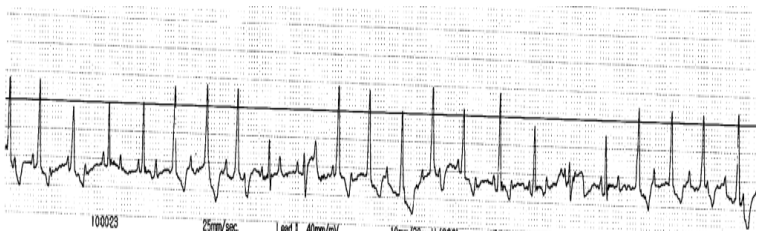
IMAGES











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. 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