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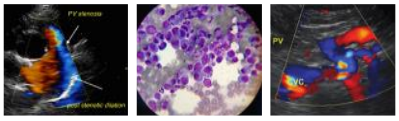

SonoPath
Clinical Sonography & Telecytology
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PATIENT
Malcolm Going

SPECIES
Feline

BREED
DSH

SEX
Male Intact

AGE
6.10.17

WEIGHT
15.6lbs

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

HOSPITAL NAME
Bel Air Veterinary Hospital

REFERRING VET
Dr. Young

INVOICE
26329

DATE
9.13.22

PRESENTING CLINICAL SIGNS

History: Presented on 9/3/2022 for severe abdominal distension. The distension was first noted about 2-3 months ago and has progressively gotten larger. Malcolm has normal thirst, hunger and bathroom habits. No coughing, wheezing, vomiting or diarrhea at home. A Capstar and Advantage were administered on 9/8/2022. On physical examination Malcolm was quiet alert and responsive. He was covered in flea dirt, tachycardic and had severe abdominal distension. Abdominocentesis revealed translucent clear to very slightly pale-yellow peritoneal fluid. 450mL of fluid was obtained which was about half of the total volume of fluid seen sonographically.
-Pertinent abnormal PE/Chem/CBC/UA Results: 9/3/2022: AFAST Fluid Score: 4/4.
-Current medications: None listed.
-Sedation used: Not required to complete full diagnostic ultrasound.
-Pertinent previous ultrasound results: No previous.
-STAT: Offered and Approved.
-Imaging performed by: Stephanie Warga RDCS, RVT.

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

Marked cardiomegaly with evidence of CHF.

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at both 50 and 25mm/s; 10mm/mV. The average heart rate is 240bpm (range 188-300bpm). No identifiable P waves with an irregularly irregular rhythm, most consistent with rapid atrial fibrillation.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is remodeled with regions of asymmetry. The papillary muscles are remodeled. The LV systolic function is significantly depressed. The LV and RV are both borderline in dimension. The left atrium is severely dilated and bulbous in appearance; subtle spontaneous contrast. The right atrium is markedly dilated; subtle spontaneous contrast. The mitral valve is thickened, trace central MR. Trace TR. Normal TR velocity. Blood flow through both the LVOT and RVOT is decreased in velocity. Scant pericardial effusion seen. No pleural effusion. No obvious cardiac tumors. Rapid heart rate throughout.

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	3.5-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
PATIENT	7.1		0.38	1.5	0.39	25	54
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	2.4	2.0		0.8	0.8	NM

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.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The finding of marked biatrial enlargement in the face of normal LV wall thickness and systolic dysfunction is most consistent with Restrictive/Unclassified Cardiomyopathy (R/UCM); however, DCM or a primary RV cardiomyopathy can also have this appearance (right heart more affected than left). There is also significant ventricular remodeling and fibrosis, which indicates severe diastolic dysfunction. Marked biatrial enlargement suggests the ascites is certainly due to right-sided congestive heart failure. Subtle smoke is visualized in both atria, indicating the patient is at high risk for a blood clot event even with anti-coagulation. This concern should be expressed to the owner. No additional issues are identified.

The ECG is most consistent with atrial fibrillation (AF) which is concerning for more malignant arrhythmias and sudden death in the future. Most cats are asymptomatic with AF and do not require medications. The overall heart rate is reasonable for a stressed cat in this case (avg 220bpm); however, recommend reassess this in 1-2 weeks once the patient's clinical decompensation is stabilized. Institution of Diltiazem may certainly be indicated at that time pending HR evaluation (ie if still frequent spikes >250bpm).

Regardless of categorical classification, this degree of atrial dilation and arrhythmic disease confers the patient is certainly in spontaneous congestive heart failure and full lifelong medications are warranted as below. Consider hospitalization as the gold standard approach to treating the patient that is unstable. The long-term prognosis is guarded to poor; however, most cats are able to maintain a good quality of life for some time on medications if tolerated.

Going forward there will always remain risk for episodes of CHF and development of blood clots and/or sudden death in the future. Monitoring of sleeping breathing rates at home is recommended as the best way to screen for progression to CHF at home. Tolerance of medications in geriatric cats is always of concern, and blood values must be watched carefully. Elective anesthesia should be avoided.

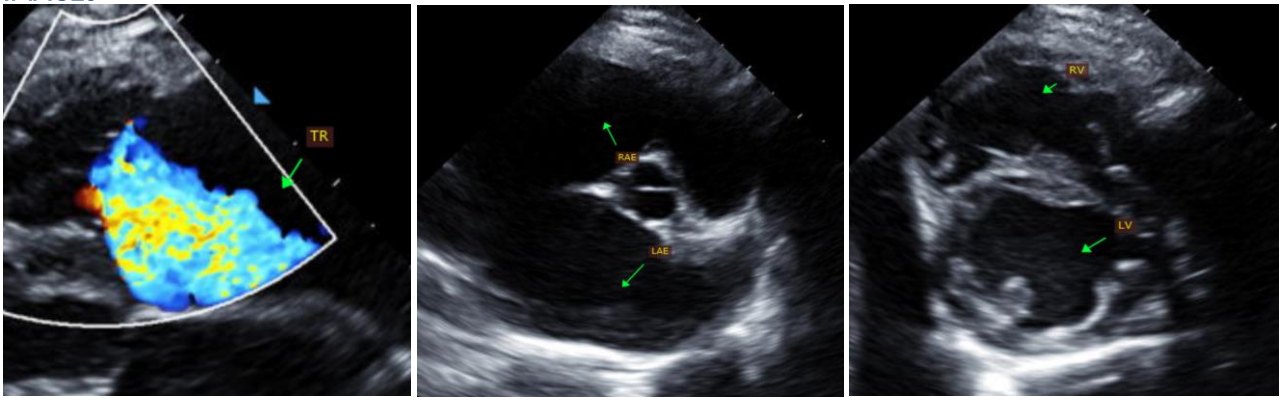
PLAN

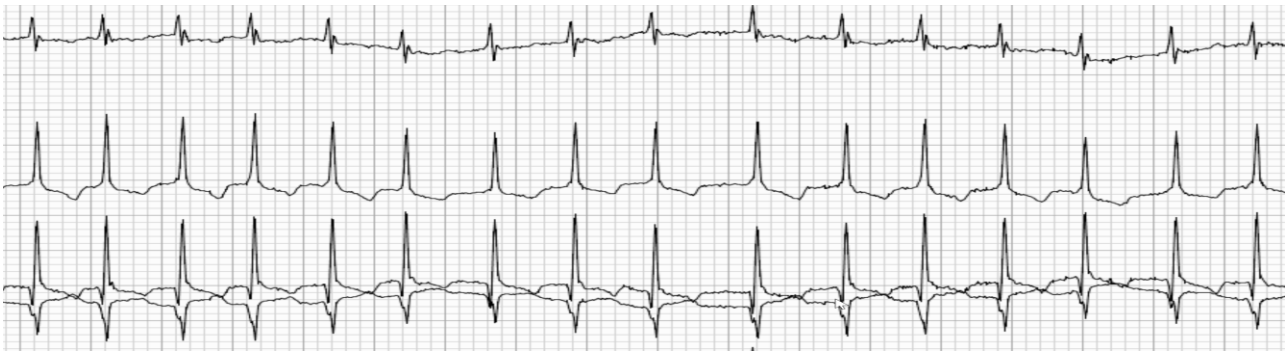
Highly recommend hospitalization for supportive care and monitoring while medications are instituted. Screening BP recommended. Discharge on the following: Institute Lasix 1-2mg/kg PO q12h. Institute blood thinner Clopidogrel (Plavix) 75mg tablets; give ¼ tab orally once daily (NOTE: this medication is very bitter on the cut edges). Institute Pimobendan (off label use) 1.25mg PO q12h.

Recheck renal values, ECG/heart rate and blood pressure in 1-2 weeks then every 3-4 months lifelong. If BP is >130mmHg at that time, institute ACE-I 0.5mg/kg PO q12h. If heart rate is persistently >200-220bpm despite overall clinical stability, institute low dose Diltiazem 30mg tablets, give ¼ tab by mouth q12h. Recheck heart rate/ECG 5-7 days later with a target of <160-180bpm in hospital.

A recheck echocardiogram is recommended in 6 months to assess 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.

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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