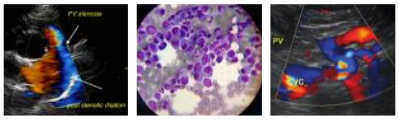
IMAGING PERFORMED BY

IntraPet.com



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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PATIENT
Munchkin Bawroski

SPECIES
Feline

BREED
DSH

SEX
FS

AGE
2005

WEIGHT
11.5lbs

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

IMAGING PERFORMED BY
Stephanie Pearce, RDMS, RVT

HOSPITAL NAME
Homeward Bound

REFERRING VET
Dr. Keil

INVOICE
22419

DATE
2/8/2022

PRESENTING CLINICAL SIGNS

History: Hx: O concerned the belly is getting larger over the past week, however noticing less urination since the weekend. P being treated for hypertension and hyperT4. No d/c/g/s. 1 episode of vomiting. Eating/drinking well. Previous echo findings (2014) of moderate mitral regurg and mild tricuspid regurg, no treatment recommended at the time.
PE: INTEG: Poor haircoat, CV: WNL, RESP: WNL, ABD: Severe distention, fluctuant
Pertinent abnormal PE/Chem/CBC/UA Results: SA190 to Antech pending.
Radiographs: Rads Abd (2view): Loss of serosal detail. US guided abdominocentesis collected translucent yellow serous fluid SG of 3.5, consistent with modified transudate.
Current medications: Methimazole, Amlodipine For hypertension and hyperT4 >2 years.
Sedation used: Not required to complete full diagnostic ultrasound.
Pertinent previous ultrasound results: No previous IntraPet scans.
STAT: Requested/Approved. ECG declined at this time as well as full abdominal ultrasound.
Imaging Performed by: Stephanie Pearce RDCS, RVT.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is irregular with apical thinning with regions of remodeling and irregularity. There is a diffusely hyperechoic endocardium consistent with fibrosis. Moderator bands. The systolic function is mildly decreased with evidence of diastolic dysfunction as well. The papillary muscles are mildly remodeled. The left atrium is high normal. No obvious spontaneous contrast; no obvious thrombus. Mild MR. The right ventricle is also affected, with mild fibrosis and remodeling. Moderate RA dilation. Mild TR. Blood flow through the RVOT and LVOT is normal velocity. No pericardial effusion. Moderate volume pleural effusion. No obvious cardiac tumors. *Brief abdominal scan revealed large volume peritoneal effusion and no obvious space-occupying masses.

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	5	250	0.39	1.4	0.50	32	64
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	1.4	1.3		0.9	1.0	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

These findings are most consistent with Restrictive/Unclassified Cardiomyopathy, given a lack of significant LV hypertrophy. Historical MR/TR persist with mild progression. Systolic dysfunction has developed, which may be structural in origin or secondary to the arrhythmia. What is unusual is the LA measures normal yet the RA is moderately dilated, indicating risk for decompensation. Tachycardia-induced cardiomyopathy can also have this appearance, and result in right-sided congestion as seen here. Given a recorded HR of 250bpm with an irregular rhythm through the study, highly recommend a screening ECG in this case. Additionally reassessing the T4 is indicated as a possible exacerbating cause of acute decompensation.

These findings are most consistent with a cardiac cause for bicavitary effusion, and lifelong cardiac support is recommended as below. It is somewhat unusual to only have moderate RA dilation with congestion, and should the effusions persist despite therapy and arrhythmic causes be ruled out further systemic evaluation is recommended.

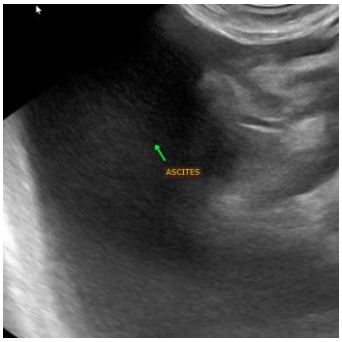
Going forward, this patient is at high risk for thromboembolic events regardless of medications and this should be expressed to the owner (monitor for neurologic change, acute paralysis/lameness, etc). **Consider hospitalization if the patient appears unstable. As an alternative, a dose of Lasix should be administered prior to discharge.** A thoracocentesis should also be considered due to effusion if the patient develops any respiratory signs (not mentioned in history). The prognosis is **poor long term**, 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.

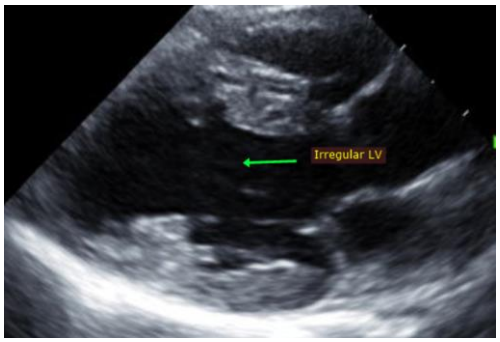
Plan: Consider thoracocentesis, hospitalization, IV diuretic as discussed. Baseline ECG and BP. Discharge on oral medications: furosemide 1-2mg/kg PO q12h. Institute blood thinner Clopidogrel (Plavix) 75mg tablets; give ¼ tab orally once daily (NOTE: this medication is very bitter on the cut edges). Institute Pimobendan (off label use) 1.25mg PO q12h.

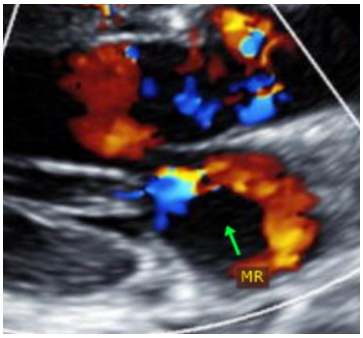
Once stabilized, eating well at home and BP >130mmHg, consider addition of vasodilator ACE-I (benazepril or enalapril) 0.5mg/kg PO q12h.

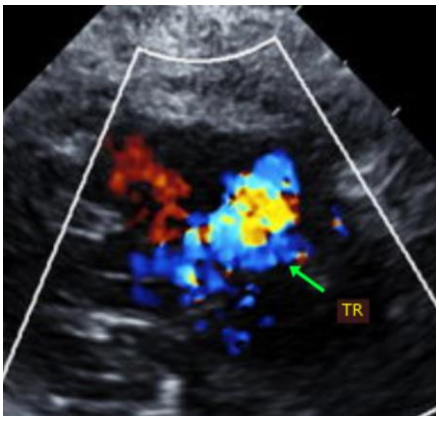
Recheck renal values in 10-14 days to ensure tolerance of medications, then every 3-4 months lifelong. A recheck echocardiogram is recommended in 6 months to assess for progression.

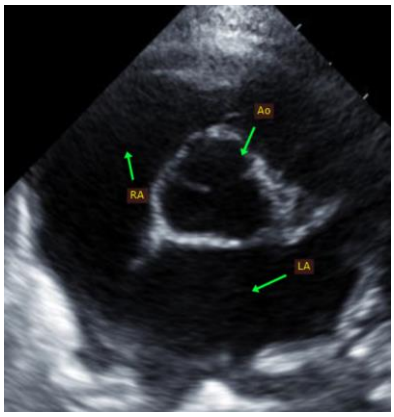
IMAGES

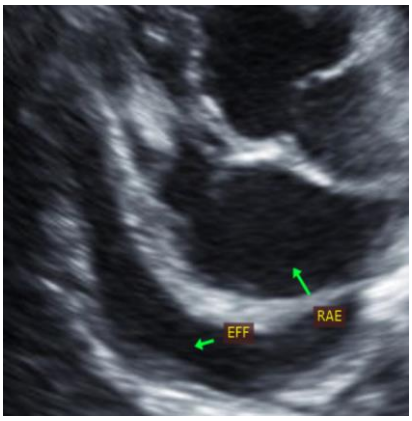












The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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