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Clinical Sonography & Telecytology
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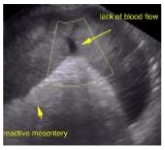
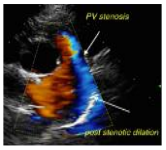
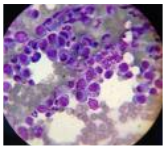
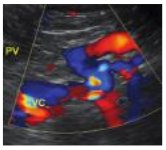

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1-800-838-4268 info@sonopath.com

PATIENT
Rosco Adolphsen

SPECIES
Feline

BREED
DSH

SEX
Male Neutered

AGE
13 years

WEIGHT
12.8 lbs

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

IMAGING PERFORMED BY
Amanda Lacey Crook

HOSPITAL NAME
River's Edge Pet Medical Center

REFERRING VET
Dr. Gray

INVOICE
22022

DATE
11/15/21

PRESENTING CLINICAL SIGNS

History: Dehydrated 7-8%. Possibly 4 days with no water. Thyroid disease, on transdermal methimazole for 1 year. P already drinks a lot in general per O. Howling (has always been vocal). Lethargic, sore/stiff. Matted haircoat. Heart murmur 3/6 left systolic. Was open mouth breathing on presentation. Spiked a fever during hospital stay. Started on gabapentin and 1/2 maintenance of fluids due to dehydration. Has been in oxygen cage over night.
Abnormal PE/Chem/CBC/UA Results: CBC: Neutro 12.98, Eos 0.01 CHEM - BUN 41, Sod 170, Pot 2.7, ALT 448, ALP 272, T bili 1.0. No T4 ran as was in house labwork.

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

Normal cardiac silhouette. No obvious evidence of CHF.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is minimally hypertrophied. There is a diffusely hyperechoic endocardium consistent with fibrosis and ventricular remodeling. Minimal papillary muscle hypertrophy. The right ventricle is subjectively normal in size and morphology. There is mild left atrial enlargement present. No right atrial enlargement present. Normal RVOT velocity. There is mild systolic anterior motion (SAM) of the mitral valve present, with a mildly elevated LVOT velocity (dynamic profile). There is mild to moderate eccentric mitral regurgitation present secondary to SAM. Mild AI. Mild TR; borderline velocity. There is no pericardial effusion noted. Scant pleural effusion appreciated.

CARDIAC CHART

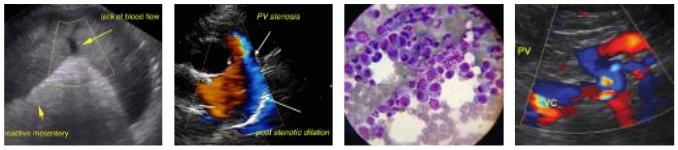
FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm) (Moise, Pipers)	LVIDd (cm) (Moise, Pipers)	LVWd (cm) (Moise, Pipers)	FS (%)	EF (%)
NORMAL PARAMETER	------	150-240	0.35-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
PATIENT	5.81		0.58	1.7	0.60	64	95

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	1.0	1.4	2.5	1.1	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.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The diagnosis is hypertrophic obstructive cardiomyopathy. This indicates LV hypertrophy (minimal in this case) with a dynamic LVOT obstruction (SAM) and secondary MR. There is mild left atrial dilation, indicating the risk of spontaneous CHF and/or a thrombotic event, while currently low, may be elevated in the future. Mild AI and TR are hemodynamically insignificant, although a screening BP and T4 are recommended every 6 months. Prognosis is guarded long term, given the highly variable rates of progression with subclinical feline cardiomyopathy.



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It is unclear if the pleural effusion (scant) is related to these findings or not. If the patient was on fluid therapy and the effusion was not noted on presentation, this may be the first sign of fluid intolerance. The risk for organic CHF is low with this degree of LA dilation, essentially ruling out this as a differentiatl. My suspicion is it may be unrelated, in light of additional systemic issues noted in the history. Consider decrease IV fluids until further information is obtained. If the effusion quantity increases, sampling will be useful to determine origin.

While no medications have been shown to definitively alter long term outcome at this stage of disease, atenolol is often initiated to decrease the outflow obstruction. Given the degree of hypertrophy (minimal) and only mild LA dilation, this is not clearly indicated at this time. Consider closely monitoring for progression in the next 6 months as an alternative approach. One exception to this would be if the T4 is significantly elevated and the recorded HR persistently high. In this case, cautious rate control may be useful until thyroid control is obtained.

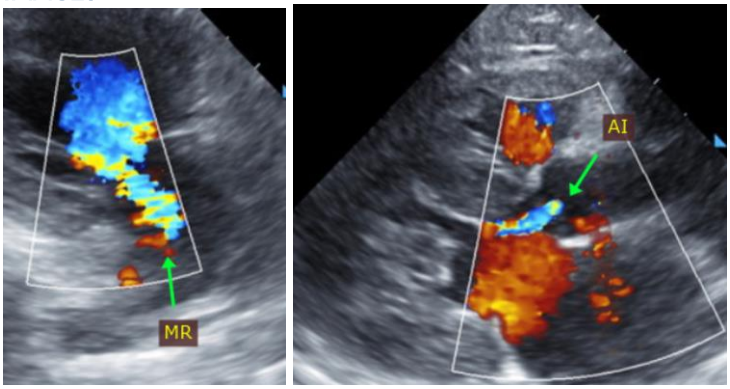
Anesthetic risk is considered mild, however judicious IV fluid rates are advised to avoid fluid overload. Additionally drugs that stimulate heart rate should be avoided unless clinically necessary (glycopyrrolate, atropine). Avoid vasodilators as this may worsen the obstruction. A reasonable protocol includes opioid/benzodiazepine premedication, propofol induction, isoflurane maintenance. Risk for complication with steroid use typically follows LA dilation, which in this case is mildly elevated. If needed, monitoring of RR/RE is advised particularly in the initiation phase.

Monitor at home for any respiratory signs or blood clot events (neurologic change, paralysis, etc) in the future.

Plan: Screening BP/T4. If the T4 is elevated and patient's resting HR documented persistently >200bpm, administer low dose of atenolol: 25mg tablets; Give ¼ tab once daily. Recheck heart rate in 1-2 weeks with target stressed rate of 140-160bpm 12-24 hours post-administration. Discontinue once the thyroid level is controlled.
Consider d/c fluid therapy if fluid intolerance is suspected (ie patient stability/breathing pattern has worsened with fluid therapy rather than improved). If not suspected, pleural effusion is likely unrelated and continued systemic stabilization is recommended.

Recommend recheck echocardiogram in 6 months to assess for progression, sooner if clinical issues arise.

IMAGES



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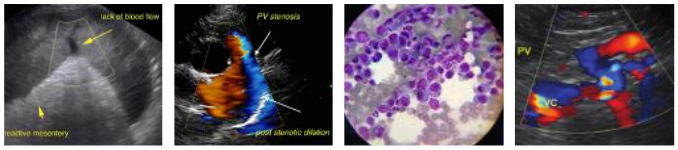

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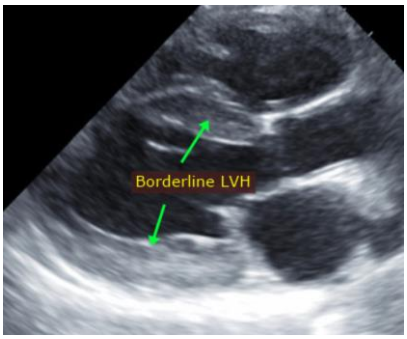

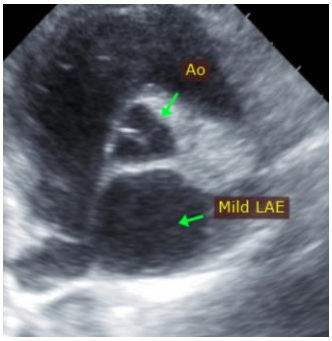

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)