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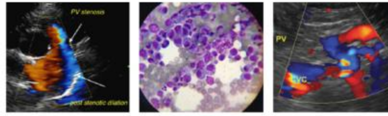


SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT
Baby Sundberg

SPECIES
Feline

BREED
DSH

SEX
Female Spayed

AGE
16 years

WEIGHT
6.5lbs

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

IMAGING PERFORMED BY
Tom McNeill

HOSPITAL NAME
SVS Imaging CT

REFERRING VET
Dr. Korosec

INVOICE
26308

DATE
9/12/22

PRESENTING CLINICAL SIGNS

History: Presented for a follow up appointment for chronic kidney disease. Baby has managed constipation and GI vomiting. April 28, 2016 - murmur 1st heard, and tachycardia, HR = 240; Echocardiogram findings: systolic anterior mitral valve motion without LVH, first placed on atenolol March 2021 ECG - HR = 127, sinus rhythm with second degree AV block, cardiologist recommended discontinuing Atenolol, owner refused at that time.
-Abnormal PE/Chem/CBC/UA Results: HR = 100bpm, BP 116/98mmHg. Weight loss, BCS = 4/9, Heart murmur 2/6 Iris stage 3 CKD, normotensive, hyperphosphatemia, nonregenerative anemia, hematuria (unable to assess proteinuria)

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is asymmetric; however, no significant hypertrophy is identified. The basilar septum appears thinned. LV dilation, adequate function. There is a mildly hyperechoic endocardium consistent with fibrosis. The papillary muscles are normal. The left atrium is severely dilated and bulbous in appearance. No obvious spontaneous contrast (smoke) seen. The RA is severely dilated. The right ventricle is normal. The mitral valve is normal in structure and mobility. Mild central MR. Blood flow through both the LVOT and RVOT is normal in velocity. Mild TR. Scant pericardial effusion. Pockets of pleural effusion seen. No obvious cardiac tumors. Bradycardia throughout the study.

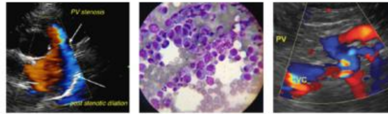
CARDIAC CHART

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	2.9	110	0.35	2.0	0.52	50	85
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	2.0		0.5	0.5	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 finding of severe biatrial dilation in the face of essentially normal LV wall thickness and adequate systolic function is most consistent with Unclassified Cardiomyopathy (UCM); however, some prior infectious or inflammatory insult to the myocardium cannot be definitively ruled out. A history of an LVOT obstruction (no LVH noted in the prior report) is of unclear significance at this time and is certainly not seen on this exam. There is small volume MR and TR, which is likely secondary to annular stretch. There is normal wall thickness, ruling out typical hypertrophic disease. No additional issues are identified.



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Regardless of categorical classification, the patient has **progressed to congestive heart failure** (CHF) as evidence by pleural and pericardial effusion. An immediate thoracocentesis may be necessary to stabilize the patient, depending on clinical signs. Lifelong cardiac support and anti-coagulation is recommended as below, including off-label use of Pimobendan. Referral for 24-hour supportive care should be considered if the patient is or becomes unstable. Tolerance of medications is of the up-most importance in a geriatric cat, particularly given the history of renal disease. If cardiac and renal disease cannot be balanced, euthanasia should be elected. Finally, the patient is notably bradycardic and as was previously recommended, Atenolol should be discontinued as below. At this point this is negatively impacting cardiac output, and this must be done ASAP.

Assuming the patient is able to be stabilized, there will always remain risk for recurrent CHF, development of blood clots, and/or malignant arrhythmias/sudden death in the future. Monitoring of sleeping breathing rates at home is recommended as the best way to screen for recurrent/impending CHF at home.

Prognosis is poor to grave; however, our goal is to improve quality of life for a matter of weeks to months.

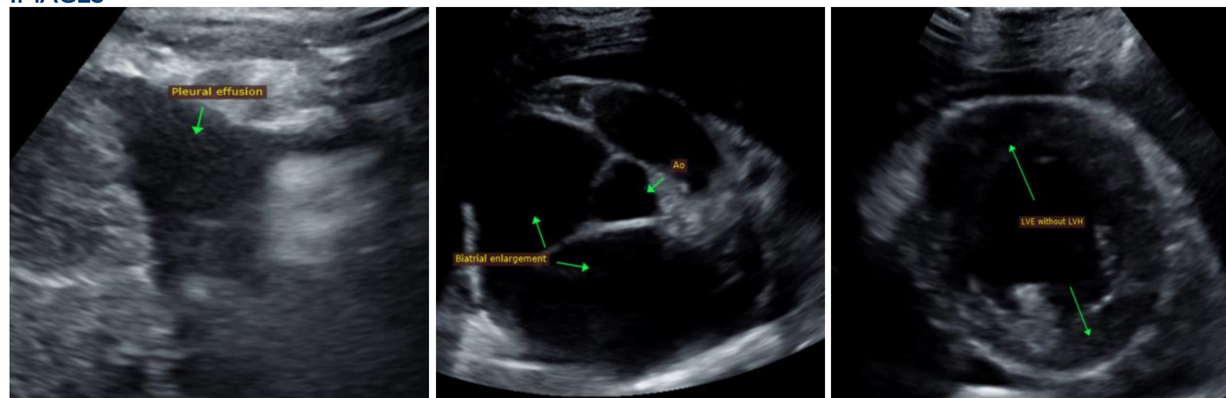
PLAN

Consider thoracocentesis. Consider referral for hospitalization. Baseline renal panel recommended. Oral medications: Institute Plavix 18.75mg PO SID (NOTE: this medication is very bitter and may causing foaming at the mouth- coat in entirety). Institute Lasix 1mg/kg PO q12h. Institute Pimobendan at 1.25mg PO q12h. Discontinue Atenolol if once daily dosing (if twice daily dosing must wean prior to discontinuation).

Recheck renal values and BP in 10-14 days, then every 3-4 months lifelong. Once deemed normotensive and doing well at home, consider addition of an ACEI 0.5mg/kg PO q12h. Monitor at home for any progressive labored breathing and/or signs of clot recurrence (limb paralysis, neurologic changes, etc.). If cardiac and renal disease cannot be successfully balanced and quality of life suffers, euthanasia should be elected.

Recheck echocardiogram in 6 months once stable on oral medications to reassess for progression.

IMAGES



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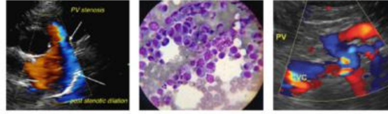

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. 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