SonoPath
Clinical Sonography & Telecytology
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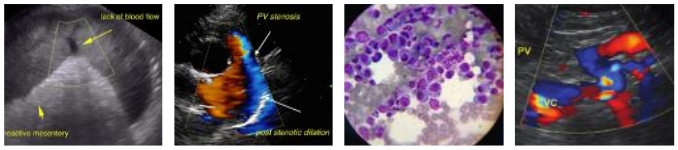


SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Maliboo Crumbaker

SPECIES
Feline

BREED
DSH

SEX
Female Spayed

AGE
16 years

WEIGHT
12.9lbs

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

IMAGING PERFORMED BY
Kelly Romero, DVM

HOSPITAL NAME
FC Veterinary Emergency Hospital

REFERRING VET
Dr. Romero

INVOICE
29390

DATE
3/5/23

PRESENTING CLINICAL SIGNS

History: Inappetence last week and a half. History of azotemia and previous vomiting episode in 2021. Abdominal ultrasound showed mild small bowel changes. Azotemia diagnosed summer of 2022. Owner is a veterinarian and she had radiographs taken on Friday prior to coming in the ER. Rads showed mild pleural effusion and large amount of formed stool. Blood work at the ER this weekend showed worsening azotemia. IVF have been run for 24 hours and patient sent home overnight, back today for echo (pleural effusion noted prior to the IVF). SQ fluids last given on Monday, rads taken on Friday. SQ fluids have been given about once weekly. No murmur or gallop. Pleural effusion was tapped yesterday - clear in color, acellular and
Abnormal PE/Chem/CBC/UA Results: TP 1.6. Azotemia BUN >120, creat 5.18, Phos 12, hematuria and isosthenuria with inactive sediment (was started on Baytril yesterday). HCT 19. Blood pressure yesterday was 174/121, mean 138, HR 201. Started on amlodipine and today's blood pressure is improved 152/121, mean 139, HR 165. T4 = 1.6 An abdominal ultrasound performed yesterday showed some focal muscularis layer thickening in the ileum thought to be enteritis. Mild renal changes

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is mildly increased in dimension. The LV chamber is mildly dilated. There is diffusely hyperechoic endocardium consistent with fibrosis. The papillary muscles are remodeled. The LV systolic function is adequate. The left atrium is mildly dilated and bulbous in appearance. The right atrium is mildly dilated. The mitral valve is normal, no MR. Blood flow through both the LVOT and RVOT is normal in velocity. Trace TR. Scant pericardial effusion. Pockets of pleural effusion. No obvious cardiac tumors.

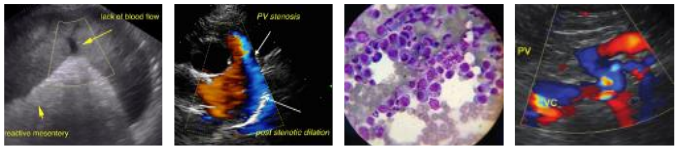
CARDIAC CHART

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	5.9	NM	0.68	1.8	0.65	47	81
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	1.65	165		1.1	1.0	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 biatrial enlargement in the face of minimal LV hypertrophy, is most consistent with Unclassified Cardiomyopathy (UCM); however, HCM would be an alternative diagnosis. It is likely that at least some degree of atrial enlargement is secondary to recent fluid therapy/overload, making it difficult to establish a baseline. There is also mild LV remodeling and fibrosis which



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indicates diastolic dysfunction, which can contribute to fluid intolerance. No additional issues are identified.

Regardless of classification, the finding of biatrial dilation may suggest that recent pleural effusion is secondary to cardiac intolerance. The timeline is somewhat confounding as IV fluids were initiated following the diagnosis of effusion. SQ fluids were infrequent, although may have contributed to an early volume overloaded state. My assumption is this was a case of subclinical disease that unfortunately led to easily being pushed into a congested state. Consider cardiac supportive Pimobendan for long-term benefit as additional options are limited by renal disease. With mild atrial dilation, Plavix is not clearly warranted at this time. This patient is in kidney failure and use of Lasix may be debilitating. Given a lack of respiratory sings, simply removing the fluid, discontinuing the fluids and following up at home may be a reasonable approach. It is also possible the pleural effusion is entirely independent of these cardiac findings, and an alternative cause such as neoplasia is at play. If the fluid/dyspnea returns, then Lasix may have to be utilized. Alternatively euthanasia should be considered, due to difficultly managing 2 disease processes. Finally, a fluid cytology may be beneficial to ensure no ancillary issue has been missed.

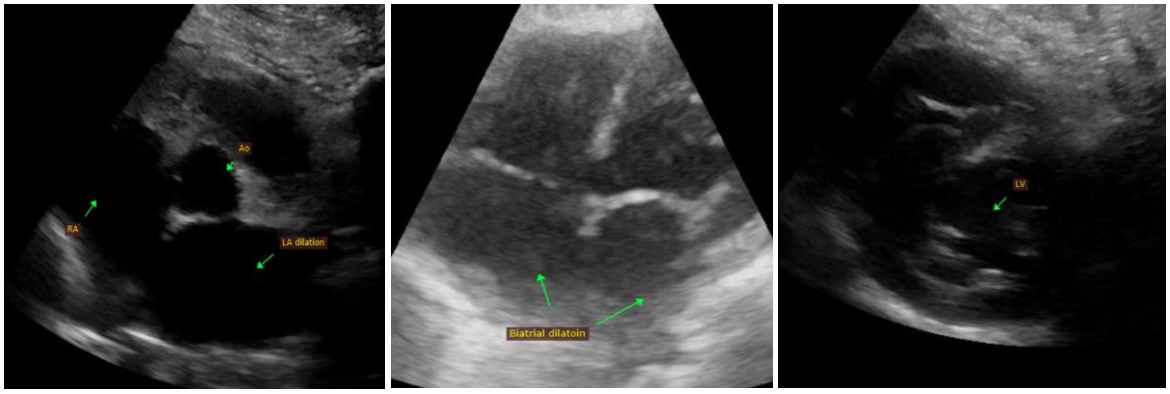
It is important to note that this patient's cardiac intolerance may limit treatment of kidney disease going forward and the overall prognosis is guarded. Cautious use of fluids in the future may be necessary, with close monitoring for evidence of intolerance. Patient will always remain at risk for recurrent episodes of CHF/fluid intolerance and development of 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

Institute Pimobendan 1.25mg PO q12h. Depending on clinical status, no obvious indication for Lasix at this time. Consider further fluid sampling if recurrent/refractory.

A recheck echocardiogram is recommended in 2-3 months once stabilized to reassess atrial dimensions independent of fluids and need for continued medications. A full echocardiogram is recommended in 6 months.

IMAGES



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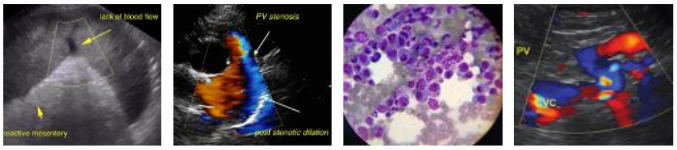

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
info@sonopath.com