



PATIENT

Will Human Society
of Guaynabo

SPECIES

Canine

BREED

Terrier Mix

SEX

Male Intact

AGE

11 weeks

WEIGHT

12.2lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

G. Ferrer, DVM

HOSPITAL NAME

Paseos Veterinary
Center

REFERRING VET

Dr. Ferrer

INVOICE

25132

DATE

7/5/22

PRESENTING CLINICAL SIGNS

History: Presented to evaluate ascites. Has been dewormed several times and several fecal sample has been negative. Was given Doxycycline and also on furosemide and pt has not improve. An abdominal ultrasound was done. Report of findings below: Ascites. This finding, in combination with possible caudal vena cava and hepatic vein dilation, is concerning for an "upstream" issue (i.e., right-sided congestive heart failure, obstruction of the thoracic caudal vena cava). Other considerations include hepatic arteriovenous fistula, hypoalbuminemia (secondary to a protein-losing enteropathy, hepatic failure, or less likely, renal loss), other. PE: abdominal distension and fluid wave. Tachycardia, but no obvious heart murmur was auscultated. U/A: 7-5-22. BP: 174mmHg.

-Abnormal PE/Chem/CBC/UA Results: CBC: HCT: 25% (37-55), RBC 3.96 (5.5-8.5), MPV 12.3 (3.9-11.1) CHEM: Gluc: 126 (60-110) PHOS: 9.8 (2.9- 6.6) TP: 4.5 (5.4-8.2) Glob: 1.7 (2.3-5.2) CHEM on 6-20-22: Phos: 7.9 (2.5-6.8) Potassium: 7.9 (3.5-5.8) TP: 4.1 (5.2-8.2) Albumin : 1.9 (2.3-4) Globulin 2.3 (2.5-4.5) 4DX: all neg.

-Abdominal radiographs: Ascites and loss of serosal detail. Abdominal effusion total protein: 2.2 , Color: clear with blood tinged.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The RV is largely unremarkable without significant RV hypertrophy. No obvious septal flattening. The LV is normal dimension with adequate myocardial function. The left atrium is mildly enlarged. Severe RA enlargement with bowing of the septum. The full extent of the septum cannot be visualized, and an ASD is not ruled out. The tricuspid valve appears mildly thickened with mild to moderate TR. The MPA is not significantly dilated and flow through the region is normal. The aortic outflow is normal. Mild AI. No pericardial or pleural effusion noted. No obvious cardiac masses. Hepatic congestion with large volume ascites.

CARDIAC CHART

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	NA	NA	NM	1.2	30	54	0.23
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LA 2D short axis Base view (cm)	LVIDd Avg; 2D and m-mode short axis (cm)	LVIDs Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
PATIENT	211	1.3	2.0	5.5	1.7	3.0	2.1
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
BODY WEIGHT DEPENDENT PARAMETERS				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
*Note: All measurements based upon multi-modal images and methods. An average value is reported.				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
				15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
				40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
				50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

Adapted from June Boon, Veterinary Echocardiography, 1998
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435
Hansson et al, Vet Rad and Ultrasound 2002
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Unfortunately, this is a non-diagnostic study. What can be said is this patient has severe right atrial enlargement with evidence of right-sided congestive heart failure. The underlying pathology is difficult to define and a defect such as an ASD would be most likely given the findings and history (RA dilation, no murmur, etc); however, ancillary pathology is certainly not ruled out. The left heart is largely normal without significant abnormalities identified. Regardless of definitive diagnosis, the prognosis is poor given that CHF has already developed.

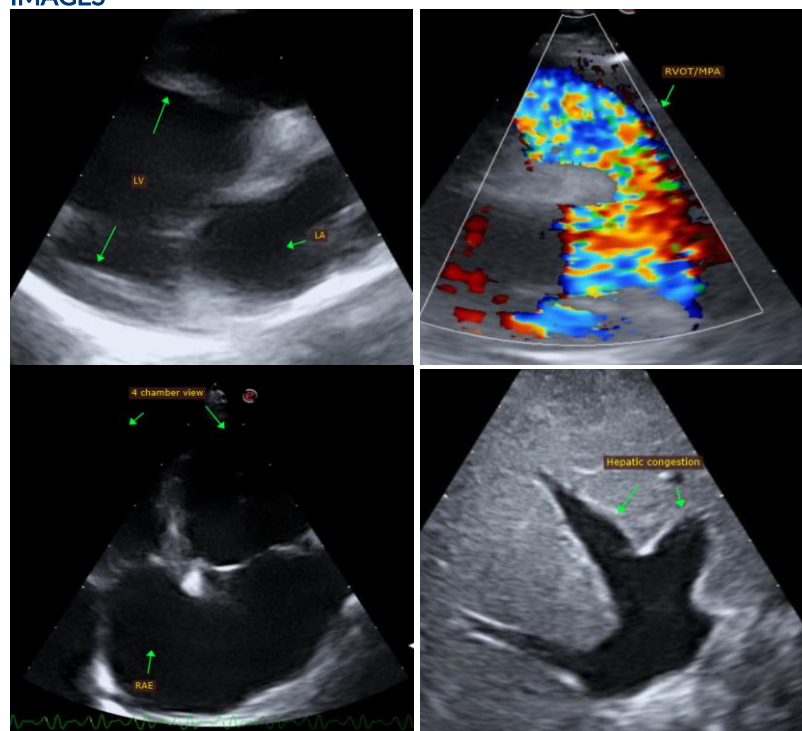
Full cardiac support is indicated as below. Periodic centesis should be performed to maintain comfort and appetite. Patient is at risk for fulminant right-sided CHF, malignant arrhythmias and/or sudden death going forward. If the patient does not respond to therapy and QOL suffers, humane euthanasia should be elected.

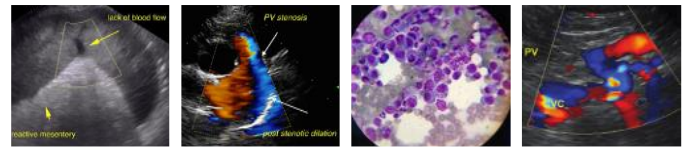
PLAN

Immediate referral to a Specialty facility for advanced imaging and further evaluation is advised. If declined or not possible, baseline chest radiographs, blood pressure and ECG are recommended. Institute spironolactone 1-2mg/kg PO q12h. Institute Pimobendan 0.3mg/kg PO q12h. Institute Lasix 1-2mg/kg PO q12h. If referral is declined and quality of life suffers, humane euthanasia should be elected.

If patient improves on the medications, recheck echocardiogram is recommended in 6 months to reassess.

IMAGES





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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.

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Canine

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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Maggie Machen Lamy, DVM
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com

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