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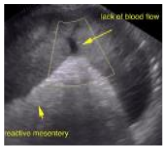
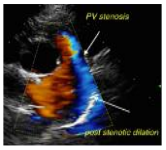
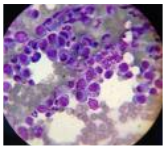
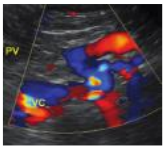

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PATIENT
Will HS of Guaynabo

SPECIES
Canine

BREED
Terrier Mix

SEX
Male Intact

AGE
5 months

WEIGHT
21.4lbs

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

IMAGING PERFORMED BY
G. Ferrer, DVM

HOSPITAL NAME
Paseos Veterinary Center

REFERRING VET
Dr. Ferrer

INVOICE
26770

DATE
10/6/22

PRESENTING CLINICAL SIGNS

History: Recheck echo. Ascites; removed almost 2,800mls liter 9-22-22. No murmur.
-Current medications: Pimobendan 2.5mg BID, Furosemide 12.5mg: 1 BID, Spironolactone 25mg: 1/2 BID. SPO2 reached 95%.
-Abnormal PE/Chem/CBC/UA Results: BW: 10-6-22 CBC MCV 61.5 (61.6 - 73.5 fL) Platelets 558 (148 - 484 K/µL) PDW 8.7 (9.1 - 19.4 fL) Plateletcrit 0.54 (0.14 - 0.46 %) CHEM: Lipase 3,303 (100 - 1,500 U/L)
Pertinent previous echo findings (MML 7/22): no RVH, no LVE/LVH, mild LAE, severe RAE, mild/mod TR, MPA normal, mild AI, ascites

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. The RA is small in dimension, with mild TV thickening. Mild TR: normal velocity. A large proximal chamber is visualized without obvious flow seen crossing into the small RA. The MPA is relatively small (likely due to volume underloading) and flow through the region is normal. The aortic outflow is normal. Mild AI. No pericardial or pleural effusion noted. No obvious cardiac masses.
*A bubble study was performed from the right cephalic vein. **Bubbles can be seen entering the small right atrium. No bubbles appreciated in the proximal chamber suggesting an imperforate septum.**

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	2.7	NM	1.48	31	60	0.47
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	NM	0.95	0.95	9.7	2.3	3.2	2.2
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
				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)

BODY WEIGHT DEPENDENT PARAMETERS
**Note: All measurements based upon multi-modal images and methods. An average value is reported.*

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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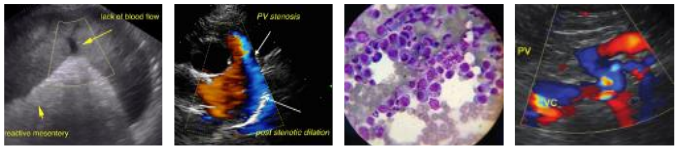

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Unusual case. With patient growth and additional images, it is now apparent that there is a proximal chamber above the RA most consistent with a Cor Triatriatum Dexter (CTD). The RA is actually small, without obvious pathology. What is unusual is the septum between the two chambers appears imperforate, without flow seen crossing into the RA. This is supported by the bubble study, with bubbles bypassing the chamber as well. It is important to note that this is a presumptive diagnosis as anatomic distortion can impeded accurate interpretation. Additionally, concurrent abnormalities remain possible in this case particularly with mild LA dilation.

CTD is extremely uncommon, and the finding of a suspect imperforate septum is limited to a single case in dogs upon a brief literature review. The proximal chamber is essentially a dilated caudal vena cava without normal venous return. The finding likely accompanies anomalous venous return from the caudal portion of the body. These findings are speculative; however, suspicion is high.

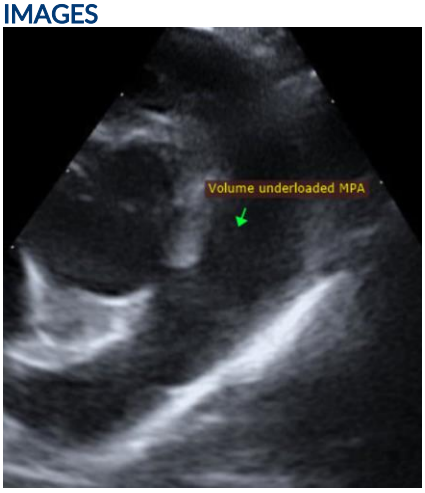
Based upon this study, there may be interventional or surgical options in this case (cutting balloon, balloon dilation, surgical correction). Highly recommend referral to University of Florida for advanced imaging (CT/MRI) and discussion of possible correction if desired. Otherwise, continued CHF management as previously prescribed can be utilized, with euthanasia once QOL suffers. Discussion with the owner is advised.

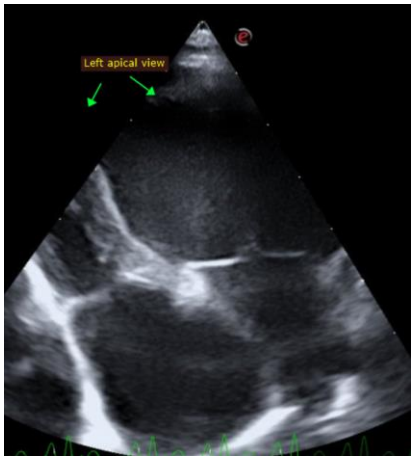
PLAN

Continue all medications as previously recommended. Consider consultation with UF if desired.

Recheck renal values every 3-4 months. A recheck echocardiogram is recommended in 6 months.

IMAGES





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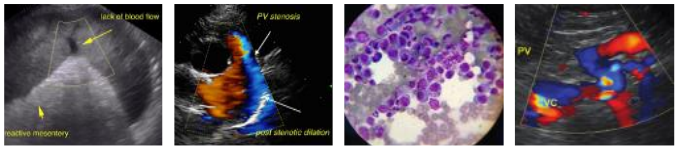

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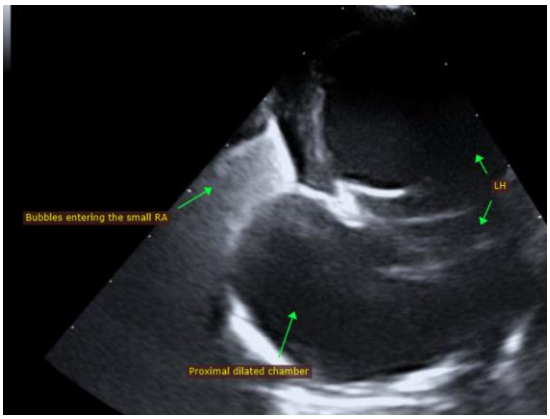

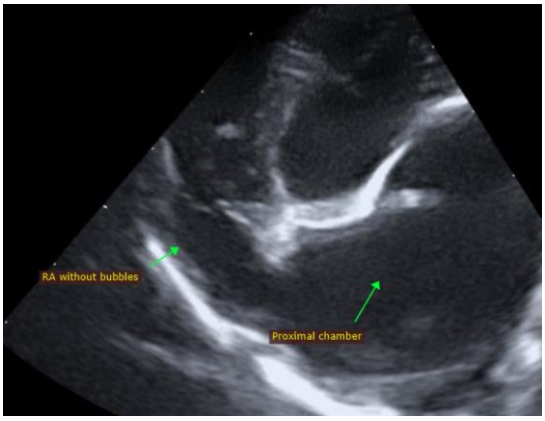

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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