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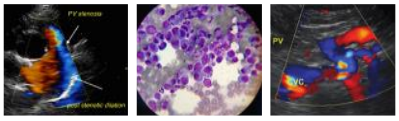

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PATIENT
Lexi Deugwell

SPECIES
Canine

BREED
Pomeranian

SEX
Female Spayed

AGE
5.23.11

WEIGHT
14.7lbs

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

IMAGING PERFORMED BY
Andi Parkinson, RDMS

HOSPITAL NAME
Northwind Animal Hospital

REFERRING VET
Dr. Repsher

INVOICE
22642

DATE
2.16.22

PRESENTING CLINICAL SIGNS

History: Recheck echo. Abdominal distention has since been noted and Lasix increased.
-Pertinent abnormal PE/Chem/CBC/UA Results: mild ALT elevation 234, ALP 1379, BUN mild elevation 33, rads: severe cardiomegaly, minimal broncho interstitial pattern.
-Current medications: Furosemide 20mg q8hr, Enalapril 2.5mg -1.5-tab SID, Spironolactone 25mg 1/2-tab q12h.
-Sedation used: Not required to complete full diagnostic ultrasound.
-Pertinent previous ultrasound results (07/02/2021 MML): Severe MR, severe LA/LVE, moderate TR, moderate to severe PAH, mild RHE. LA: 3.4, LV: 3.9, TR: 4.7.
-STAT: Not requested.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with mild prolapse into the left atrial lumen. Marked eccentric mitral regurgitation with marked left atrial and auricular dilation. Normal MR velocity. Significant LV dilation with hyperdynamic myocardial function. Subtle septal flattening. The tricuspid valve appears thickened with septal prolapse and moderate TR. Velocity consistent with severe pulmonary hypertension. Mild right heart dilation. The pulmonic and aortic valves are normal in morphology and mobility. Normal aortic and pulmonic outflow velocities with laminar flow. No AI/PI. No pericardial or pleural effusion noted. Ascites seen on subcostal views. No obvious cardiac masses.

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	4.9	4.4	NM	3.5	51	92	NM

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	1.1	0.9	6.7	4.0	3.7	1.8

*Normal chamber parameters expressed as a mean value (SD)

BODY WEIGHT DEPENDENT PARAMETERS			
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)

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

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve persists with evidence of progression. The left atrial dilation is marked with development of ascites. The right heart is similar to previous with significant PAH. Finally, ascites is confirmed on exam and further medications are warranted as below.

In light of these findings, refractory CHF is confirmed. This patient is now stage D with a high risk for complication. I would not further increase Lasix if the patient is feeling relatively well, as the dose is approaching toxicity. Our goal is to maintain or improve quality of life for the short-term with high risk for sudden death. Monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home. Cough suppression to improve QOL can also be considered (hydrocodone, 0.2-0.4mg/kg up to q4-6h PRN) for any residual mechanical cough in the face of normal sleeping respiratory rates. The average survival time of canine patients with active pulmonary edema is 8-9 months on medications, however they generally are able to maintain a good quality of life for that period. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for acute progression of the cough, labored breathing, exercise intolerance or collapse episodes in the future.

Elected anesthesia is not advised.

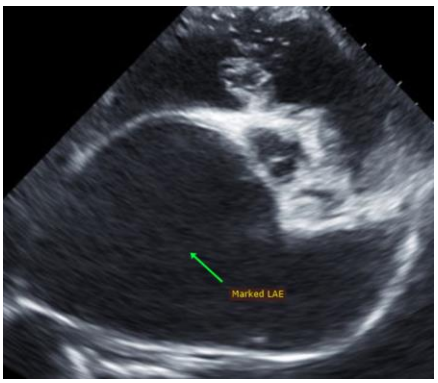
PLAN

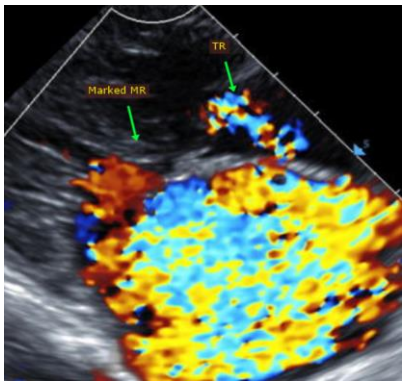
Administer Pimobendan 0.3mg/k PO q9h. Pending BP assessment >130mmHg, continue Enalapril as prescribed. Institute Sildenafil 1-2mg/kg PO q12h. Continue Spironolactone as prescribed. Continue Lasix as prescribed as the dose is already quite high.

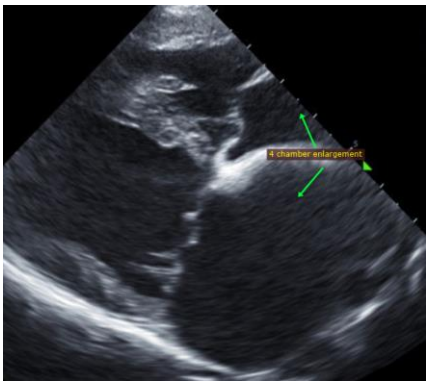
Monitor SRRs at home. Monitor renal values and BP in 10-14 days then every 3-4 months while on diuretics.

Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of associated clinical signs occurs in the interim.

IMAGES







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
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