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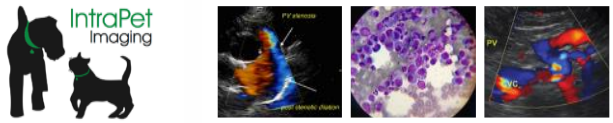

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PATIENT
Lucy Tomecek

SPECIES
Canine

BREED
Chihuahua

SEX
Female Spayed

AGE
10.26.09

WEIGHT
15.8lbs

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

HOSPITAL NAME
Banfield White Marsh

REFERRING VET
Dr. Racz

INVOICE
26028

DATE
8.25.22

PRESENTING CLINICAL SIGNS

History: Recheck echo. Progressive cough. History of III-IV/VI murmur. Raspy tone on left.
-Current medications: Hydrocodone, Furosemide 12.5 mg – weaning dose
-Sedation used: Not required to complete full diagnostic ultrasound.
-Pertinent previous ultrasound results (3/2021 MML): Moderate MR, moderate LAE, mild LVE, moderate TR, mild PAH: 3.1m/s. LA: 2.5, LV: 3.8.
-STAT: Offered and declined by DVM.
-Imaging performed by: Stephanie Warga RDCS, RVT.

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at both 25 and 50mm/s; 1mm/mV. The average heart rate is 160bpm with an underlying normal sinus rhythm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. Isolated APCs are seen throughout with extended periods of bigeminy. No ectopic beats, pauses or dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with frequent APCs and atrial bigeminy.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve is diffusely thickened with prolapse into the left atrial lumen. Lack of coaptation in systole. There is marked eccentric mitral regurgitation present. The MR velocity is normal. There is marked left atrial enlargement. There is mild left ventricular dilation and increased sphericity indicative of volume overload. Left ventricular systolic function is hyperdynamic. There is normal systolic flow velocity across the aortic valve. The aortic valve appears trileaflet with normal mobility. No AI. The main pulmonary artery is dilated. Normal pulmonic outflow velocity with laminar profile. Trivial pulmonic insufficiency. Moderate right atrial and right ventricular dilation. The tricuspid valve is thickened and prolapsing with severe tricuspid regurgitation. The tricuspid regurgitant velocity is elevated, indicative of severe pulmonary hypertension (PG 80mmHg). Scant pericardial effusion. No obvious pleural effusion. No cardiac masses are seen.

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	6.0	4.2	NM	2.7	34	64	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	140	1.3	0.94	7.2	3.4	3.8	2.4
*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)

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 disease persists with evidence of significant progression. Marked mitral and tricuspid regurgitation are noted. Biatrial and ventricular enlargement in addition to severe pulmonary hypertension indicates the risk for spontaneous right OR left-sided congestive heart failure is high. Scant pericardial effusion is concerning for early right-sided congestion, and **more aggressive cardiac support is recommended** including sildenafil therapy. If the patient appears unstable, highly recommend overnight hospitalization for supportive care at a 24-hour facility. Additionally cough suppression may be useful in the face of normal breathing rates in the future.

Unfortunately, with this degree of heart disease and congestion, the prognosis is guarded to poor with an average survival time of 6-12mo at this point. Most dogs are able to maintain a good quality of life for some time however with medications. Going forward, patient will remain at high risk for recurrent CHF (left or right sided), collapse episodes and/or development of malignant arrhythmias/sudden death in the future.

The ECG shows frequent isolated APCs, which are not surprising given the degree of atrial dilation. What is seen here does not warrant therapy; however, it does put the patient at risk for development of rapid atrial fibrillation. Monitor at home for clinical signs, such as acute syncope and/or lethargy.

Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit once stabilized.

Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes. Monitoring of sleeping breathing rates is recommended as the best way to screen for improvement/recurrent CHF at home.

Elective anesthesia is not advised.

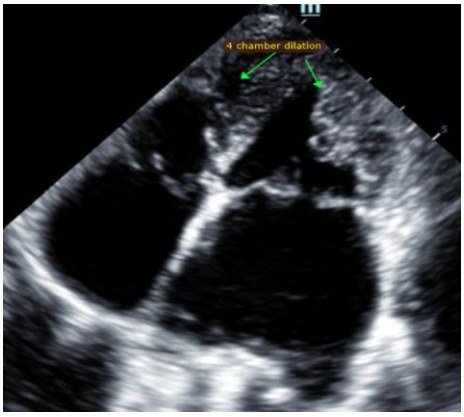
PLAN

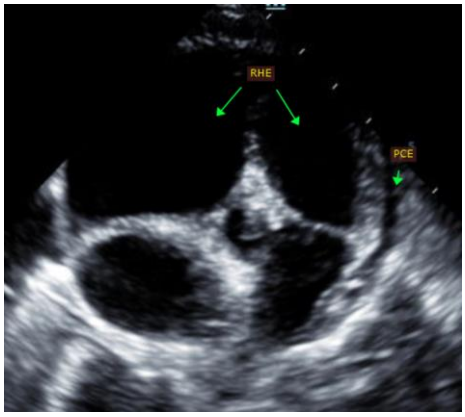
Institute sildenafil 1-2mg/kg PO q8h. Institute spironolactone 1-2mg/kg PO q12h. Institute Pimobendan 0.3mg/kg PO q12h. Continue furosemide 1-2mg/kg PO q12h (do not wean). Continue Hydrocodone as needed for cough suppression.

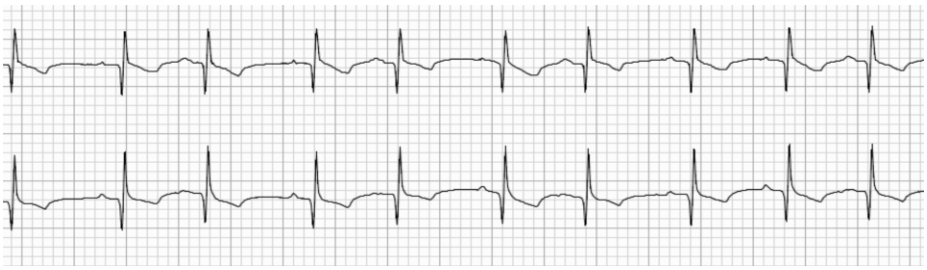
Recheck a kidney panel and BP in 10-14 days, then every 3-4 months. If doing well and BP >130mmHg, institute ACE 0.5mg/kg PO q12h.

A recheck echocardiogram and ECG are recommended in 4-6 months to screen for progression, sooner if clinical signs arise.

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.

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