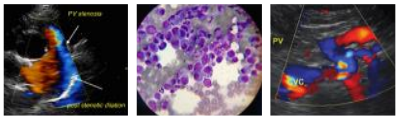
IMAGING PERFORMED BY

IntraPet.com



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT
Jax Mallonee

SPECIES
Canine

BREED
Pomeranian

SEX
Male Neutered

AGE
8.1.09

WEIGHT
6.5lbs

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

IMAGING PERFORMED BY
Andi Parkinson, RDMS

HOSPITAL NAME
Chadwell Animal Hospital

REFERRING VET
Dr. Gold

INVOICE
22632

DATE
2/18/22

PRESENTING CLINICAL SIGNS

History: Increased resp effort. Grade III heart murmur. 2/15 V/D, anorexia, lethargic.
-Pertinent abnormal PE/Chem/CBC/UA Results: WBC 33,000 ALP 394 ALT 134 BUN 46. –
Radiographs: Cardiomegaly, right sided heart enlarged recently.
-Current medications: Cerenia, Pred, Flagyl, Zeniquin, Butorphanol.
-Sedation used: Not required to complete full diagnostic ultrasound.
-STAT: REQUESTED

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild diffuse thickening of mitral valve leaflets with no prolapse into the left atrial lumen. Trivial mitral regurgitation with normal left atrial dimension. Normal LV diameter with adequate myocardial function. The tricuspid valve appears mildly thickened with mild tricuspid regurgitation. Velocity consistent with moderate pulmonary hypertension. Mild right heart prominence. Mild MPA prominence. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No obvious aortic or pulmonic insufficiency. No pericardial or pleural effusion noted. 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	4.8	3.5	NM	1.3	50	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	110	1.3	0.9	2.9	1.5	2.6	1.5
*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

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The primary finding is moderate pulmonary hypertension with mild tricuspid regurgitation. The estimated systolic pulmonary arterial pressure is 60mmHg, with normal being <25mmHg. This is mild right heart enlargement and MPA prominence. Clinical signs of weakness, heavy breathing, cyanosis, and syncope are attributed to severe PAH.

The underlying genesis of PAH is poorly understood in cases other than heartworm infestation, though it occurs with increased frequency in a variety of forms of chronic lung disease and in patients with idiopathic pulmonary fibrosis. If not performed, a heartworm antigen test is always recommended.

Given the signalment, history and echocardiogram findings, it is likely this patient has underlying lower airway disease (COPD/chronic bronchitis) causing the cough that has begun to affect the heart (PAH). The respiratory effort may reflect this underlying pathology and further treatment may be warranted. **It is important to note that the respiratory signs is not typically CAUSED BY PAH, rather they LEADS TO PAH.** Patients with severe PAH can eventually develop right-sided congestive heart failure (ascites), debilitating cyanosis and labored breathing and exertional syncope if poorly controlled.

Given reported increased respiratory effort, use of Sildenafil is reasonable as below. If any cough is noted, additional treatments such as bronchodilators, cough suppressants, antibiotics, etc. may also be warranted.

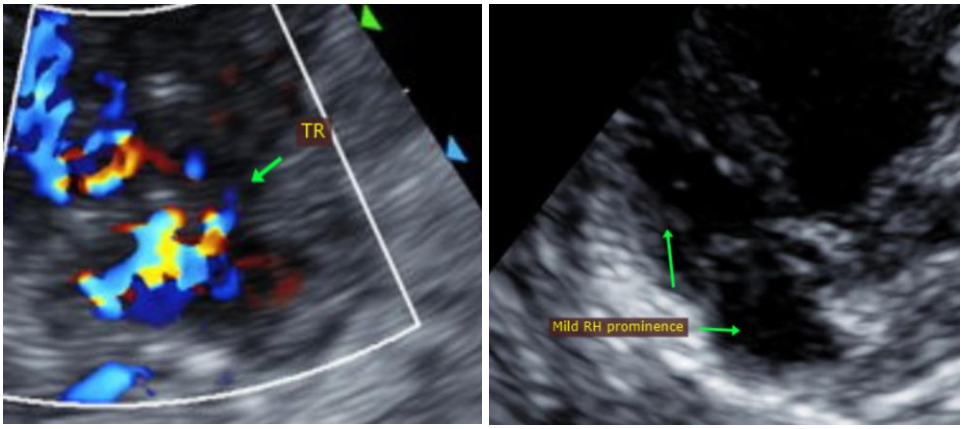
Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a labored breathing, exercise intolerance or collapse episodes.

PLAN

Institute sildenafil 1-2mg/kg PO q12h. Consider ancillary respiratory therapy such as a course of fluoroquinolone, Hydrocodone, etc. Consider heartworm test and advanced airway diagnostics as mentioned should the cough persist/worsen.

A recheck echocardiogram is recommended in 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.

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