



DATE **CLINICAL BACKGROUND & STUDY DETAILS**

4.10.26

PATIENT

Pyppi Duncan

SPECIES

Canine

BREED

Chihuahua Mix

SEX

FS

AGE

1.17.11

WEIGHT

23.4lbs

History: Onset of labored breathing with audible crackles noted last night. Client administered Diphenhydramine, and the patient slept. This morning: inappetent for homemade diet, ate Cesar brand dog food. Lethargic, not following normal routine, no interest in play. Inappropriate urination on couch today. Chronic intermittent coughing/gagging noted, previously attributed to allergies. History of Lyme disease diagnosed last year; treated with antibiotics, currently testing negative on follow-up testing. History of collapsing trachea (diagnosed by Dr. Hicks). Chronic halitosis. Recent camping trip last weekend, remained in crate/cage at campsite. No vomiting or diarrhea. No known toxin exposure.

Pertinent abnormal PE/Chem/CBC/UA Results: CXR showed cardiomegaly with CHF.

Current medications: Gabapentin, Cerenia, Lasix, Vetmedin.

Sedation used: Not required to complete full diagnostic ultrasound.

Pertinent previous ultrasound results: No previous.

STAT: Approved.

Imaging performed by: Stephanie Warga RDCS, RVT.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild thickening of mitral valve leaflets with no prolapse into the left atrial lumen. No mitral regurgitation with no left atrial dilation. Small LV diameter with increased wall thickness and normal myocardial function. The tricuspid valve appears mildly thickened with trace tricuspid regurgitation. Velocity consistent with moderate pulmonary hypertension. Mild right atrial enlargement. Moderate right ventricular enlargement with hypertrophy. Subtle septal flattening. The pulmonic and aortic valves are normal in morphology and mobility. Mild MPA and branch dilation. Normal pulmonic or aortic outflow velocities. No AI or PI. No pericardial or pleural effusion noted. No cardiac tumors observed.

CARDIAC CHART

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

HOSPITAL NAME

Animal Emergency
Hospital

REFERRING VET

Dr. Willer

INVOICE

47521

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	4.0	NM	1.1	50	80	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	160	1.2	0.9	10.6	1.8	1.8	0.9
*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)

Adapted from June Boon, Veterinary Echocardiography, 1998	30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435	35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
Hansson et al, Vet Rad and Ultrasound 2002	40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
Bonagura et al. Echocardiography: principles of interpretation, Vet	50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The diagnosis is moderate pulmonary hypertension with secondary right heart/MPA enlargement. This is based upon an elevated TR velocity and right heart enlargement. The left heart is essentially normal with evidence of depletion. Reassessing lab work is recommended. No pericardial effusion is identified; however, there does appear to be soft tissue (fat) within the pericardial space. No additional issues are seen.

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 recommended. Regardless of etiology, patients with this degree of PAH can develop right-sided congestive heart failure (ascites), debilitating cyanosis, labored breathing and exertional syncope if poorly controlled.

Given the echo findings, PAH is the likely secondary to underlying respiratory disease. Sildenafil is recommended in this case for potential long-term benefit. **No indication for Lasix or Pimobendan at this time, as CHF is not apparent.** Further pulmonary workup and treatment should be investigated, including a CXR review by a Radiologist (strongly recommended), use of antibiotic and/or steroid therapy, Theophylline, etc.

Monitor closely at home for development of any associated clinical signs, including cough, exertional dyspnea/syncope or significant lethargy. Unfortunately, the prognosis overall is guarded given the severity of disease.

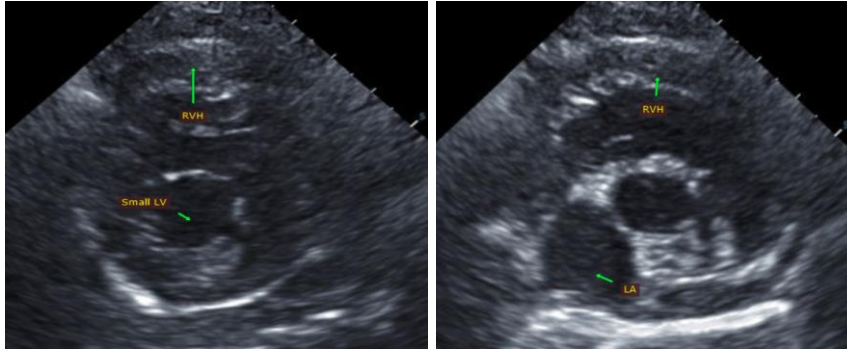
Omega fatty acid supplementation (anti-inflammatory) may be of some long-term benefit. Monitor for worsening of labored breathing, exercise intolerance or collapse episodes.

PLAN

Administer Sildenafil (for PAH) 1-2mg/kg PO q8-12h. Discontinue Lasix and Pimobendan. Pending CXR review, further pulmonary workup and treatment as discussed.

Recommend recheck echocardiogram in 6 months to reassess pulmonary pressures, sooner if any development of clinical signs.

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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