



PATIENT

Penny Thomas

SPECIES

Canine

BREED

Chihuahua Mix

SEX

Female Spayed

AGE

11 years

WEIGHT

6.69lbs

INTERPRETED BY

Maggie Machen
 Lamy, DVM, DACVIM
 (Cardiology)

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

West Engene Animal
 Hospital

REFERRING VET

Dr. Sundholm

INVOICE

22553

DATE

2/14/22

PRESENTING CLINICAL SIGNS

History: Penny presented for panting and exercise intolerance of about 6 months duration. The owners noticed that even with the exertion of jumping up onto a bed, Penny would begin breathing quickly and panting. Penny was BAR, nervous. HR 160 with no murmur or arrhythmias. RR 100, with noticeable increased effort particularly after walking around the exam room.

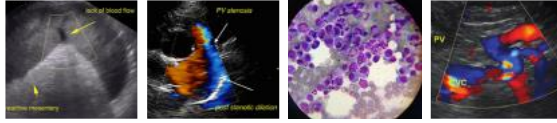
ECHOCARDIOGRAM FINDINGS

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 obvious mitral regurgitation with no left atrial dilation. Normal LV diameter with normal myocardial function. The tricuspid valve appears thickened with septal prolapse and mild tricuspid regurgitation. Mild right atrial enlargement. Mild right ventricular enlargement consistent with pulmonary arterial hypertension. TR velocity is elevated. The pulmonic and aortic valves are normal in morphology and mobility. Mild MPA and branch dilation. No pulmonic insufficiency. Normal pulmonic or aortic outflow velocities. No pericardial or pleural effusion noted. No cardiac tumors observed.

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	4.0	1.5	1.4	59	92	0.13
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	132	1.1	0.93	3.0	1.2	1.7	0.7
*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)
				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



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Mild tricuspid regurgitation is identified, likely secondary to pulmonary hypertension. The estimated PG is 60-80mmHg (normal being <25). This is causing enlargement of the right atrium and ventricle. 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 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 radiographic report, it is likely this patient has underlying airway disease that has led to pulmonary hypertension over time. I recommend lifelong Sildenafil therapy in this case, based upon the current clinical signs. Depending on response to medication, additional respiratory therapy may also be warranted, such as Theophylline, a course anti-inflammatory steroid, 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.

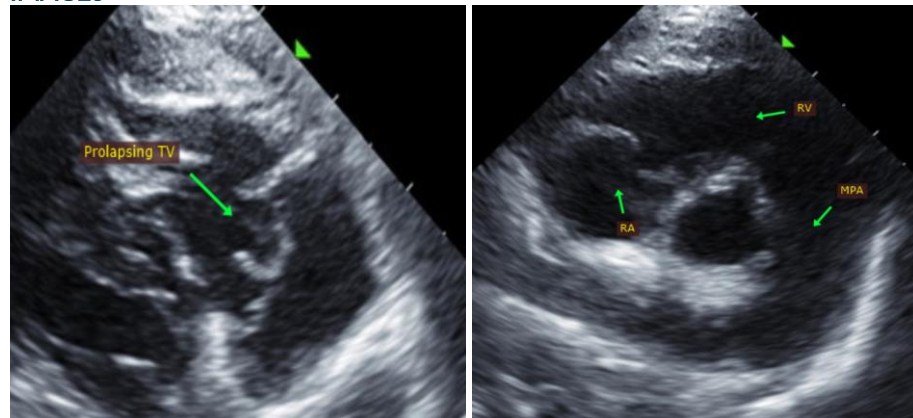
Omega fatty acid supplementation (anti-inflammatory) may be of some long-term benefit. Monitor for worsening of labored breathing, exercise intolerance or collapse episodes.

PLAN

Administer Sildenafil 1-2mg/kg PO q12h.

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

IMAGES





PATIENT

Penny Thomas

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.

SPECIES

Canine

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.

BREED

Chihuahua Mix

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

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