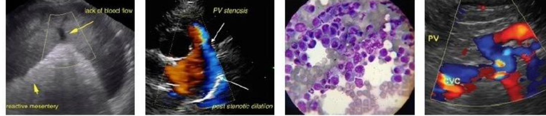

PATIENT
Oliver Braat

SPECIES
Canine

BREED
Maltese

SEX
Male Neutered

AGE
14 years

WEIGHT
22.8lbs

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

IMAGING PERFORMED BY
Loetitia St-Jacques, LVT/RVT

HOSPITAL NAME
Fairgrounds Animal Hospital

REFERRING VET
Dr. Johnson

INVOICE
25164

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PRESENTING CLINICAL SIGNS

History: Presented with increased respiratory rate and effort. Harsh lung sounds noted bilaterally on thoracic auscultation. Has been diagnosed with chronic bronchitis & chronic tracheal collapse. No heart murmur on today's exam. Screen for PAH.
-Current medications: Prednisone and Hydrocodone.
-Sedation: Butorphanol.

ECHOCARDIOGRAM FINDINGS

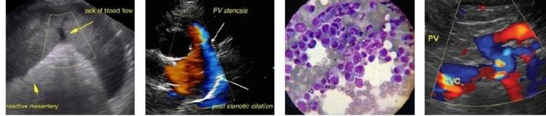
2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with no prolapse into the left atrial lumen. Mild eccentric mitral regurgitation with mild left atrial dilation. Normal MR velocity. Normal LV diameter with adequate myocardial function. The tricuspid valve appears mildly thickened with moderate tricuspid regurgitation. Velocity consistent with moderate PAH. Mild to moderate right atrial enlargement. The RV is increased in dimension with mild hypertrophy. Mild MPA dilation. 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	5.9	4.0	NM	1.4	67	94	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	73	1.0	1.2	10.3	2.1	2.7	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)
Adapted from June Boon, Veterinary Echocardiography, 1998				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Hansson et al, Vet Rad and Ultrasound 2002				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				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)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease causing mild mitral and moderate tricuspid regurgitation. Mild left atrial enlargement indicates the current risk for left-sided complication is low. The TR velocity and right heart changes are suggestive of moderate PAH. No additional issues are noted in this study.



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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. With a chronic cough history, this is the likely cause. An acute increase in cough/labored breathing is likely primary respiratory in origin, with an acute secondary exacerbating insult (infectious or inflammatory) suspected. It is important to note that the PAH does not cause the clinical signs; rather it develops secondary to airway disease/hypoxia.

Coverage with broad spectrum pulmonary antibiotics (fluoroquinolone) is recommended, with oxygen support and sedation if needed. Reasonable to institute Sildenafil and Pimobendan given the severity of the clinical signs and degree of PAH seen here.

Once stable, continued use of theophylline and/or taper course of anti-inflammatory steroids can also be beneficial in these cases, to treat exertional dyspnea or acute flare ups and decrease the inflammatory component as much as possible. PRN use of cough suppressants may also be beneficial. Unfortunately, the prognosis overall is guarded to poor with severe airway disease.

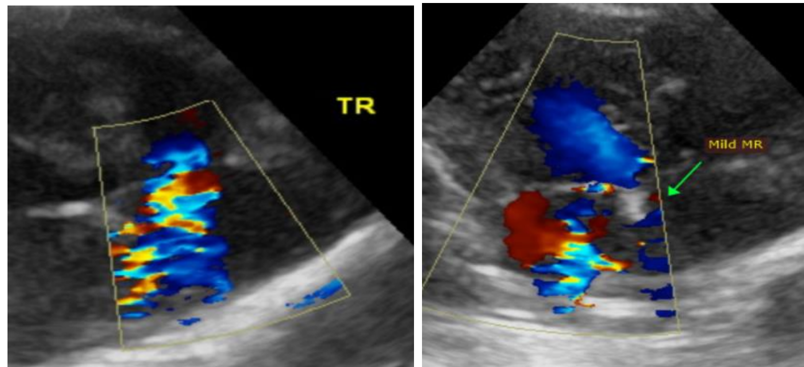
Omega fatty acid supplementation (anti-inflammatory) may be of some long-term benefit. Monitor for worsening of labored breathing, exercise intolerance or collapse episodes.

PLAN

Recommend coverage with pulmonary antibiotics (Enrofloxacin or similar). Further hospitalization/airway treatment as needed. Administer Sildenafil 1-2mg/kg PO q8h; if doing well in 1-2 weeks decrease to q12h dosing. Administer Pimobendan 0.3mg/kg PO q12h. Consider serial CXR for comparison.

Recommend recheck echocardiogram in 6 months, sooner if any development of clinical signs.

IMAGES



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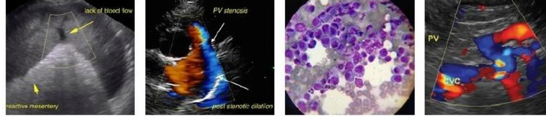

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pawsonography@gmail.com 530-786-8340

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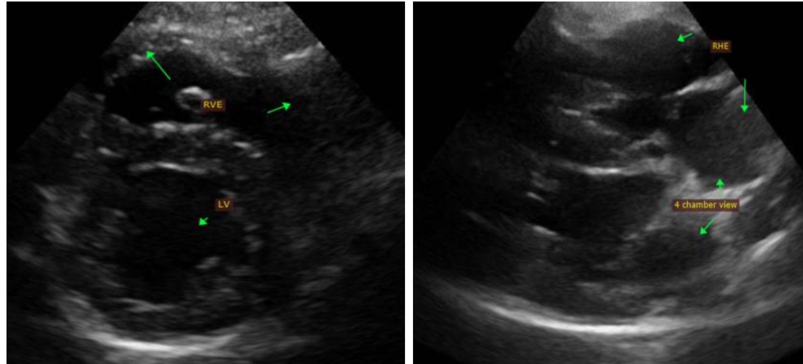

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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