



PATIENT

Lolita Ostojic

SPECIES

Canine

BREED

Westie

SEX

Female Spayed

AGE

13.5 years

WEIGHT

20lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Jessica Miller

HOSPITAL NAME

Marshc Animal
Hospital

REFERRING VET

Dr. Milwicki

INVOICE

24349

DATE

5/24/22

PRESENTING CLINICAL SIGNS

History: Chronic rhinitis, assess prior to rhinoscopy. History of a heart murmur and pulmonary hypertension. Sildenafil was not tolerated.

-Current medications: Dexamethasone EOD.

-Pertinent previous echo findings (10/2021 GP): LV: 2.6, LA: 2.1, TR: 4.0m/s. Recommended Theophylline and Sildenafil.

ECHOCARDIOGRAM FINDINGS

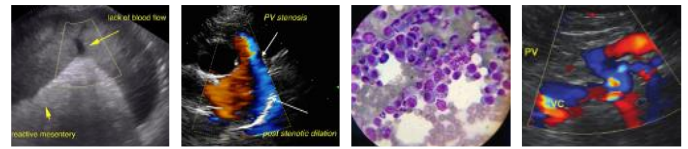
2D, m-mode, color flow and doppler imaging is available. Mild diffuse thickening of mitral valve leaflets with no significant prolapse into the left atrial lumen. Trivial mitral regurgitation with a normal left atrial dimension. Normal LV diameter with adequate myocardial function. The tricuspid valve 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 and mild 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	NA	3.8	1.3	1.3	35	67	0.4
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	NM	2.4	1.5	9.1	1.6	2.7	1.7
*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)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				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)

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. The left heart appears largely normal without significant pathology. Overall, these findings are similar to the prior study in 2021 with a stable pressure gradient and no reported clinical signs.



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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. In this particular breed which is predisposed to pulmonary fibrosis, this is the suspected underlying cause. Patients with severe PAH can eventually develop right-sided congestive heart failure (ascites), debilitating cyanosis and labored breathing and exertional syncope if poorly controlled.

Sildenafil was reportedly poorly tolerated in this patient, although ideally this would be utilized going forward. Consider institute Pimobendan as an alternative, although this is a much less potent pulmonary vasodilator. No clinical signs are mentioned in the history; however, in 2021 there were some respiratory issues. If these persist independent of the nasal tumor, I would consider using alternative therapies such as Theophylline as was previously recommended. If any cough is noted, additional treatments such as cough suppressants may also be warranted. Finally, if clinical signs of severe PAH develop such as exertional syncope, recommend reinstitute Sildenafil or consider trialing an alternative such as Tadalafil.

Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. **Pre-oxygenate for 5-10 minutes prior to induction and recover in O2 as able.** Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

This breed is predisposed to Sick Sinus Syndrome and a baseline ECG is also strongly recommended prior to anesthesia.

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

Consider Pimobendan 0.3mg/kg PO q12h, particularly prior to anesthesia. A baseline ECG and BP are strongly recommended. Depending on clinical signs consider respiratory therapy, such as Theophylline, Hydrocodone, etc. Consider heartworm test and advanced airway diagnostics as mentioned should a cough persist/worsen. If syncope develops in the future, reinstitute Sildenafil 1-2mg/kg PO q8-12h or trial Cialis/Tadalafil 1mg/kg PO q24.

A recheck echocardiogram is recommended in 6 months to screen for progression, sooner if clinical signs arise.



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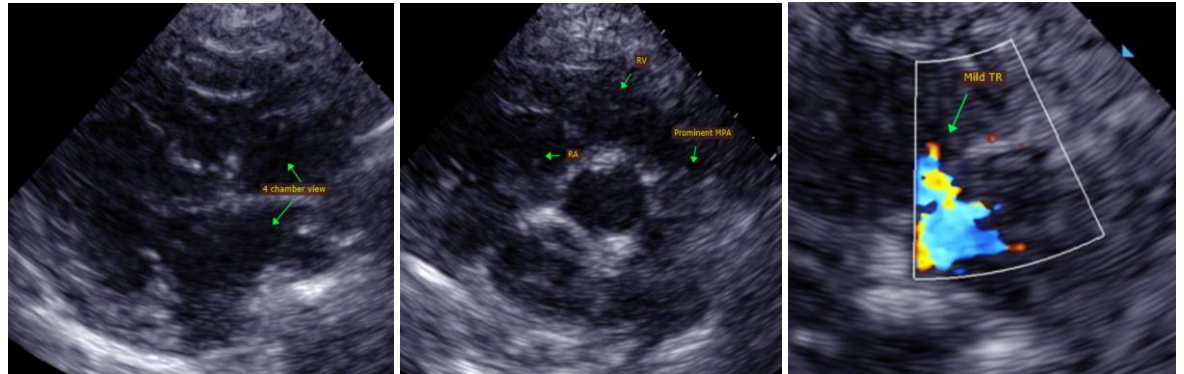
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IMAGES



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