



PATIENT

Nany Hernandez
Medina

SPECIES

Canine

BREED

Yorkshire Terrier

SEX

Female Spayed

AGE

10 years

WEIGHT

8lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Gabriel Ferrer,
DVM

HOSPITAL NAME

Pulse Pet Ultrasound
Services

REFERRING VET

Dr. Lopez

INVOICE

21686

DATE

10/22/21

PRESENTING CLINICAL SIGNS

History: Patient has a history of a heart murmur. Pansystolic grade II/VI heart murmur w/ PMI L side. PT is QAR. Pink + moist MM. Mild increase in lung sounds but no wheezes or crackles.
-Current medications (10/10/21): Vetmedin 2.5mg : 1/2 tablet BID Benazepril HCL tab 5mg: 1/4 of tablet SID Furosemide 12.5 mg: 1/2 tablet BID
-Abnormal PE/Chem/CBC/UA Results: CBC: WBC 20.93 (5.05 - 16.76 K/ μ L) Lymphocytes * 6.17 (1.05 - 5.10 K/ μ L H) Monocytes * 2.73 (0.16 - 1.12 K/ μ L) Chem: Total Protein 8.5 (5.2 - 8.2 g/dL) Globulin 5.5 (2.5 - 4.5 g/dL) ALT 153 (10 - 125 U/L) GGT 21 (0 - 11 U/L) Lipase 1,856 (200 - 1,800 U/L) Heartworm Test: Negative.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.
Minimal cardiomegaly. No obvious evidence of CHF.

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. Mild eccentric mitral regurgitation with no left atrial dilation. Normal LV diameter with adequate myocardial function. Mild LV hypertrophy (0.8cm globally). The tricuspid valve appears normal with trivial tricuspid regurgitation. Normal right atrial and ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension. 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			NM	1.3	76	98	0.21
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	100	1.0	1.3	3.6	1.4	2.4	0.6
*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



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease causing mild mitral and trivial tricuspid regurgitation. Lack of significant left atrial enlargement indicates the current risk for complication is low. Mild LV thickening is identified, which may be a normal variant, reflect volume depletion from Lasix or be secondary to pathology such as systemic hypertension. A baseline BP is recommended. No concurrent issues such as systolic dysfunction or pulmonary hypertension are noted in this study.

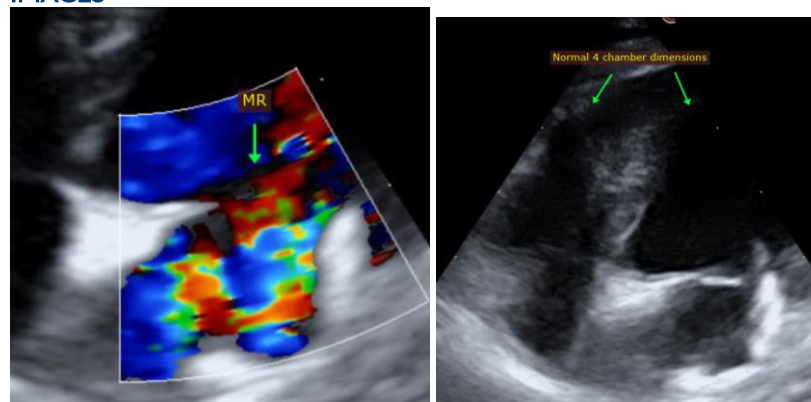
Given these findings, any respiratory signs are unlikely to be cardiac in origin and primary respiratory causes should be considered. The patient is on full cardiac support for congestive heart failure with no reported symptoms or historical support. These medications are unnecessary prior to significant cardiac enlargement or onset of clinical signs of congestive heart failure and should be discontinued. Consider further respiratory work up/treatment if indicated in this breed predisposed to primary airway issues going forward. (hydrocodone, taper course of steroids, Enrofloxacin, TTW/BAL, etc).

Assessment of progression in the future will help predict long term prognosis, which is highly variable at this stage (B1). Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

No cardiac contraindication for general anesthesia prior to chamber enlargement.

Plan: Baseline BP recommended. Discontinue triple therapy. Recommend conservative monitoring with a recheck echocardiogram in 6-12 months, 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.

Maggie Machen Lamy, DVM
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
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