IMAGING PERFORMED BY

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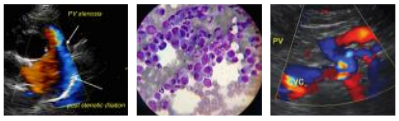

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PATIENT

Zoie Waters

SPECIES

Canine

BREED

Yorkie

SEX

Female Spayed

AGE

2012

WEIGHT

5.34lbs

INTERPRETED BY

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

HOSPITAL NAME

Everhart Veterinary Hospital

REFERRING VET

Dr. Betta

INVOICE

DATE

10/7/21

PRESENTING CLINICAL SIGNS

History: Presented on 9/24 for cough which started after grooming appt about 1 week prior. On exam, no murmurs or arrhythmias noted. HR of 131 bpm but crackles in L cranial left lung lobe noted.
Pertinent abnormal PE/Chem/CBC/UA Results: CBC/Chem: nsf, 4DX negative x 4, bp: 136/59 (85), 138/57 (79)
Current medications: Started on Clavamox 37.5mg PO q12hr and Furosemide 6mg PO q12hr - cough improved but still persists. No change in respiratory rate noted at home.
Sedation used: Sedation not required.
Pertinent previous ultrasound results: No previous.
STAT: Not requested

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental information only.

Generalized 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 mild prolapse into the left atrial lumen. No mitral regurgitation with no left atrial dilation. Normal LV diameter with adequate myocardial function. The tricuspid valve appears normal with no tricuspid regurgitation. Prominent right heart and MPA. 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	36	70	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	158	0.87	0.77	2.4	1.3	2.5	1.6
*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)
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

Overtly normal cardiac structure and function documented in this study. There is no significant valvular regurgitation or chamber enlargement noted. The right heart/MPA appear prominent which may suggest early pulmonary hypertension secondary to the cough symptom. Additionally the LVIDs is mildly increased for this body size, which may be a marker of early systolic dysfunction (albeit rare in this signalment). Follow up is advised. These findings would suggest cardiomegaly on CXR is a normal variant, which is common in this breed.

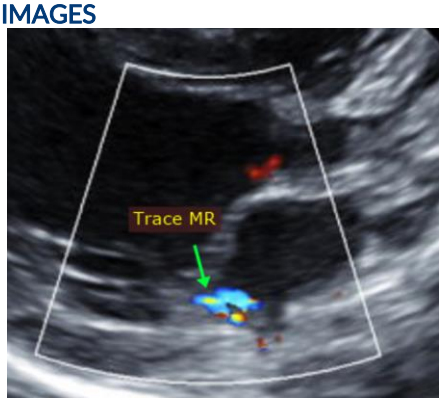
These findings make the cough certainly non-cardiac in origin. Continued work up/treatment for infectious/inflammatory causes is recommended. Consider TTW/BAL, course of fluoroquinolone, taper course of prednisone, hydrocodone, etc. Given these findings, **Lasix can and should be safely discontinued.**

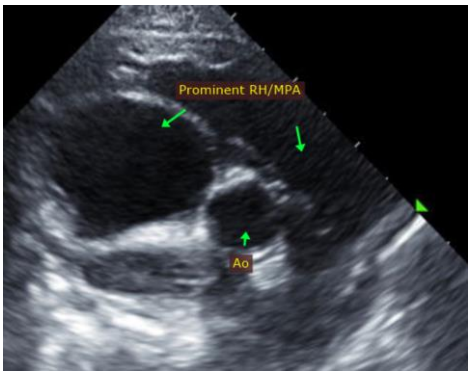
Chronic respiratory issues can lead to pulmonary hypertension if poorly controlled and a recheck echocardiogram is recommended should any exertional syncope/dyspnea occur.

No cardiac contraindication for general anesthesia, however pre-medicating with a vagolytic is recommended.

A recheck echocardiogram is recommended in 1 year, sooner if a murmur develops in the future, or clinical signs of PAH develop as above.

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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