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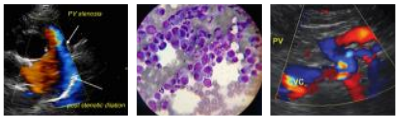

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PATIENT
Ike Gribbin

SPECIES
Canine

BREED
Bulldog

SEX
Male Neutered

AGE
11.7.10

WEIGHT
75.0

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

HOSPITAL NAME
Nexus Veterinary Specialists

REFERRING VET
Dr. Steele

INVOICE
27333

DATE
11.8.22

PRESENTING CLINICAL SIGNS

History: Recheck echo. Progressive chronic cough. History of chronic cough for about one year, previously mild dry cough happening a few times per day. Mild progressive increase in respiratory effort also noted over the last year. Over last two weeks, cough is substantially worse. Dry cough that is accompanied by marked expiratory effort w/expiratory push and wheeze. Unable to sleep or exercise. Inspiratory crackles present bilaterally. Additional history of allergies/atopy, mast cell tumor on limb (treated with Stelfonta injection in2021), and osteoarthritis.
-Radiographs: Reveal marked bronchointerstitial pattern and suspect mainstem bronchial collapse.
-Pertinent abnormal PE/Chem/CBC/UA Results: Labs pending from RDVM. See attached rads.
-Current medications: Carprofen 50mg BID, Gabapentin 300mg BID, Benadryl 25mg 2.5 BID, Theophylline 250mg BID, Cytopoint monthly, Hydrocodone 5mg 1.5 tabs 4 times daily, Cerenia 80mg once daily, Doxycycline (started yesterday) 100mg tabs 2 BID, Dasuquin, Simparica
-Sedation used: Not required to complete full diagnostic ultrasound.
-Pertinent previous ultrasound results (9/21/21 MML): Mild MR, mild LAE, borderline LV with mild dysfunction, mild TR, no RHE. LA: 2.9, LV: 4.6.
-STAT: Not requested
-Imaging performed by: Andi Parkinson, BS, RDMS.

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 mitral regurgitation with minimal left atrial dilation. Normal MR velocity. Normal LV dimension with adequate myocardial function. The right heart is mildly enlarged. The tricuspid valve appears normal with mild tricuspid regurgitation. Normal velocity. 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 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	5.5	2.0	NM	1.3	38	69	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	122	0.7	0.46	34.0	2.8	3.9	2.3
*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

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease persists with stable left heart disease. Mild mitral regurgitation remains subclinical without LA or LV enlargement. The systolic function has resolved and there is no evidence of progression. What may be significant however, is mild right heart enlargement is identified, although the TR velocity is normal. My suspicion is there is early pulmonary hypertension despite this mismatch, likely secondary to significant respiratory disease. No additional issues noted in this study.

Given these findings, the cough remains noncardiac in origin. The symptom appears clinically significant and refractory, and advanced imaging, such as BAL or TTW may be warranted. Consider a Radiologist review of the films for more advanced pulmonary evaluation. Sildenafil is not clearly warranted; however, this can be trialed to assess for any clinical response if any exertional syncope or dyspnea are noted.

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.

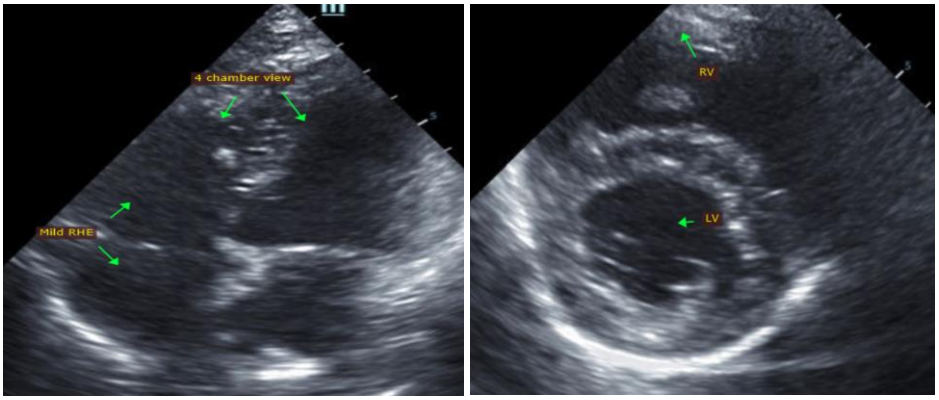
Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively 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.

PLAN

Further respiratory evaluation/treatment is recommended as dictated by the clinical picture. Consider a trial of Sildenafil if warranted: administer 1-2mg/kg PO q12h and assess response.

Recommend conservative monitoring with a recheck echocardiogram in 6 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
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