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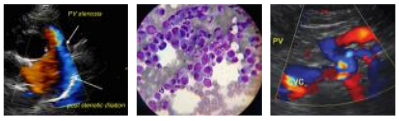

SonoPath
Clinical Sonography & Telecytology
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PATIENT
Abbey Harris

SPECIES
Canine

BREED
Rat Terrier

SEX
Female Spayed

AGE
3.5.08

WEIGHT
11.8lbs

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

HOSPITAL NAME
Happy Tails Veterinary Hospital

REFERRING VET
Dr. Calpeno

INVOICE
24055

DATE
5.5.22

PRESENTING CLINICAL SIGNS

History: History of elevated SDMA. History of elevated ProBNP.
-Pertinent abnormal PE/Chem/CBC/UA Results: NSF. ProBNP: 1077
-Current medications: Ursodiol 200mg ¼ SID, Galliprant 20mg ½ BID.
-Blood pressure: Taken after giving torb/midazolam: 135/95 Mean 110, 145/90 Mean 110, 130/90 Mean 110mmHg.
-Sedation used: Midazolam and Torbugesic IM prior to sonographer arrival.
-Pertinent previous ultrasound results: No previous. STAT: Not requested.
-Imaging performed by: Stephanie Pearce RDCS, RVT.

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

Normal cardiac silhouette. No obvious evidence of CHF.

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at both 25 and 50mm/s; 2mm/mV. The average heart rate is 120bpm (range 65-188bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. No ectopic beats, pauses or dysrhythmias observed.
ECG diagnosis: Profound respiratory sinus arrythmia.

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. No mitral regurgitation with no left atrial dilation. Normal MR velocity. Normal LV diameter with adequate myocardial function. The LV walls are mild to moderately hypertrophied (0.8-1.0cm globally). The tricuspid valve appears normal with no 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	NA	NA	NM	1.2	42	76	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	220	1.5	1.0	5.4	1.3	1.9	1.1

*Normal chamber parameters expressed as a mean value (SD)

BODY WEIGHT DEPENDENT PARAMETERS			
**Note: All measurements based upon multi-modal images and methods. An average value is reported.*	3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
	5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
	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)

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

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Essentially normal cardiac structure and function. No obvious valvular regurgitation or chamber dilation. LV hypertrophy is noted, which is typically due to systemic hypertension, a primary or infiltrative process in the myocardium, pseudohypertrophy due to dehydration or anemia, and/or be a normal variant. The reported blood pressure and lab work are normal, ruling out these possibilities. Given that the LA is normal, simple follow up is advised. No concurrent issues are noted in this study.

The ECG is most consistent with a profound respiratory sinus arrythmia, albeit with dramatic rate variation. No obvious SVT or VT is appreciated to explain the tachycardia, and this is considered benign in origin.

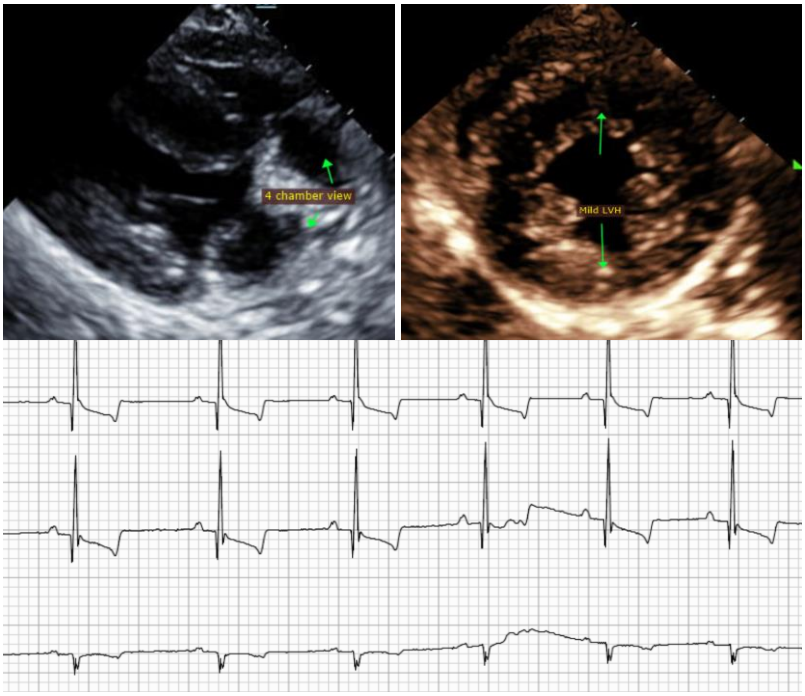
Prognosis is guarded, prior to evaluating for progressive changes.

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.

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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