



PATIENT

Kali Whipple

SPECIES

Canine

BREED

English Shepherd

SEX

Female Spayed

AGE

14 years

WEIGHT

32.1lbs

INTERPRETED BY

Maggie Machen
Lamy, DVM
DACVIM (Cardiology)

IMAGING PERFORMED BY

Pamela Harrigan,
RDCS

HOSPITAL NAME

Mass Veterinary Services

REFERRING VET

Dr. Masloski

INVOICE

25440

DATE

7/20/22

PRESENTING CLINICAL SIGNS

History: Kali presented to r DVM on the 21st of June following collapse episodes. The episodes are not always associated with exercise and are brief with no LOC. Kali was diagnosed with vestibular disease in January. She has been noted to have weakness in her hind limbs and has been drinking a bit less. Kali has been noted to be a bit "out of it" especially in the evenings. Eating well but is also on entyce. Previously been on a grain free diet. On exam: irregular rhythm, no murmurs noted, PSS, lung fields clear. BP: 160mmHg. Started Theophylline 150 mg SID. She has increased coughing since starting the Theophylline.

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

A single lead ECG is available; 25mm/s, 20mm/mV. The average heart rate is 90bpm (range 45-136bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. P and QRS morphologies are positive. No ectopic beats, pauses or dysrhythmias observed.

ECG diagnosis: Sinus bradycardia with respiratory variation.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.

Left ventricle: The LV diameter is normal with adequate myocardial function. LV wall thicknesses are normal.

Left atrium: The left atrium is normal.

Mitral valve: The mitral valve is normal. No mitral regurgitation.

Aortic valve/Aorta: The aortic valve is normal in morphology and mobility. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.

Right ventricle: Normal right ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension.

Right atrium: Normal RA dimension.

Tricuspid valve: The tricuspid valve appears normal with trace tricuspid regurgitation.

Pulmonic valve/Pulmonary artery: The pulmonic valve is normal in morphology and mobility. No pulmonic insufficiency. Normal RVOT velocity; laminar flow.

Pericardium/other: No pericardial or pleural effusion noted. No obvious cardiac masses.

2-Dimensional Measurements

Ao diam (cm)	2.3
LA diam (cm)	2.5
LA:Ao (Swe)	1.1
IVS thickness (cm)	0.8
LVID diastole (cm)	3.1
PW thickness (cm)	0.8
LVID systole (cm)	2.1
FS (%)	32

Doppler Measurements

PV Vmax (m/s)	0.56
AoV Vmax (m/s)	1.7
MR Vmax (m/s)	NA
TR Vmax (m/s)	NA
TR PG (mmHg)	NA

INTERPRETATION OF THE FINDINGS

Overtly normal cardiac structure and function. The systolic function is intact, and no additional issues are identified. No evidence of diet-related cardiomyopathy at this time; however, avoiding nontraditional diets is recommended as able.



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The ECG is most consistent with a profound sinus arrhythmia with suspected respiratory variation. This is typically a normal finding secondary to high vagal tone (causes for high vagal tone can be investigated including GI, respiratory, neurologic disease, etc.) or can be inappropriate and reflect sinus node dysfunction. The only way to know the difference is to assess response to exercise (does the heart rate/rhythm have a normal response?) or an atropine challenge (0.04mg/kg IV or IM). Further assessment is recommended, particularly given reported collapse episodes. If the rate does not stimulate appropriately (should develop a regular sinus tachycardia and maintain for 10-15 minutes), consider a holter monitor or referral as the next step in evaluation.

It is unclear if the low resting heart rate is contributing to collapse episodes or simply may be secondary to a primary neurologic issue. The latter is suspected, although an Atropine challenge may be helpful.

Given these findings, the cough is unlikely to be cardiac in origin and primary respiratory causes should be considered. Consider further respiratory work up/treatment (hydrocodone, taper course of steroids, Enrofloxacin, TTW/BAL, etc.). Theophylline is typically utilized twice a day and may be more beneficial at this dosing. That being said, if the cough does not respond to the medication increase, this should be discontinued as its benefit is symptomatic.

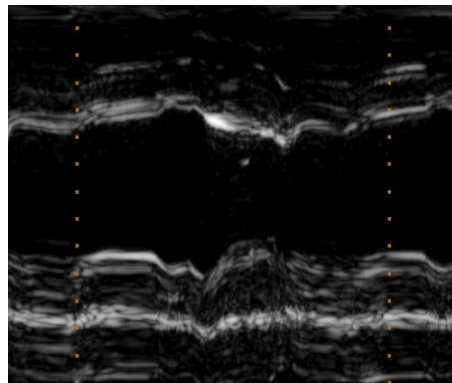
RECOMMENDATIONS

- No cardiac medications are clearly indicated.
- Consider an exercise response test and/or atropine challenge as discussed.
- High vagal tone is confirmed, consider primary neurologic disease.
- Recommend trial increase of Theophylline. If no significant clinical improvement, discontinue the medication and attempt alternative therapy.
- No cardiac contraindication for general anesthesia pending a normal response. If the response is abnormal, referral is advised, and anesthesia is high risk.
- Monitor for development of a murmur, cough, labored breathing, exercise intolerance or collapse episodes.

PLAN

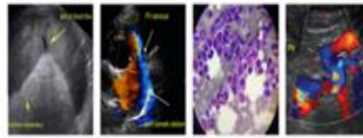
- Recommend a recheck echocardiogram should a murmur or any clinical signs of cardiac compromise develop in the future.

IMAGES





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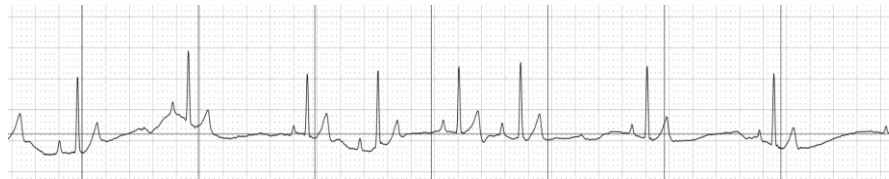
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

Echocardiogram performed by: Pamela Harrigan, RDCS
Pet Animal Ultrasound Service (4paus.com)