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ANIMAL SOUNDS NW
MOBILE VETERINARY ULTRASOUND
IMAGING PERFORMED BY
AnimalSoundsNW.com 541-357-9423

PATIENT

Ashe Gaines

SPECIES

Canine

BREED

Shepherd Mix

SEX

Male Neutered

AGE

12 years

WEIGHT

~50lbs

INTERPRETED BY

Maggie Machen
Lamy, DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Sara Hansen

HOSPITAL NAME

The Veterinary
Hospital

REFERRING VET

Dr. Yamada

INVOICE

26052

DATE

8/26/22

PRESENTING CLINICAL SIGNS
History: No history provided.

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; 50mm/s, 10mm/mV. The average heart rate is 135bpm (range 125-150bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive. Isolated VPCs are identified. Two in a 40 second tracing; monomorphic, singles only. No supraventricular premature beats, pauses or other dysrhythmias observed.
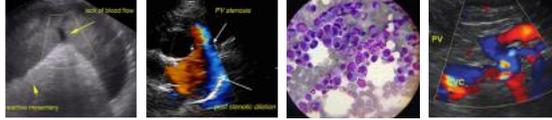ECG diagnosis: Normal sinus rhythm with rare isolated VPCs.

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. Moderate mitral regurgitation with mild left atrial dilation. Normal LV diameter with adequate myocardial function. The tricuspid valve appears normal with mild tricuspid regurgitation. Normal velocity. 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 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	5.0	2.0	NM	1.5	37	66	0.33

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	NM	1.2	1.0	22..7	3.1	5.0	3.2
*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)
				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
Adapted from June Boon, Veterinary Echocardiography, 1998				15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
Hansson et al, Vet Rad and Ultrasound 2002				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				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)

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease causing moderate mitral and mild tricuspid regurgitation. Mild left atrial enlargement indicates the current risk for complication is low. No obvious additional issues are noted in this study.

The ECG does show occasional ventricular premature contractions (VPCs). VPCs are generated from abnormal conductive or fibrotic tissue in the ventricles of the heart muscle, and even frequent single VPCs will often cause no clinical signs in dogs. When sustained however, ventricular tachycardia can lead to symptoms such as lethargy, collapse and sudden death. VPCs are a very non-specific finding. They can be due to significant cardiac disease (mild only in this study) or be extra-cardiac in origin, i.e., due to pain, stress, inflammation, cancer, GI disease, DIC/sepsis, etc. In a senior large breed dog, systemic evaluation may be warranted. An abdominal ultrasound to monitor for any underlying abnormalities, in addition to full lab work can be considered. Unfortunately, there is always an elevated risk for collapse and sudden death in any arrhythmic patient, and even on medications this risk unfortunately still persists.

Based strictly upon the amount of arrhythmia present on the available ECG, anti-arrhythmic therapy is not clearly indicated. Pending results of systemic work up, can consider a holter monitor especially if any significant lethargy or collapse is noted.

Prognosis is highly variable at this stage (B1) and monitoring for progression is advised.

Fish oil supplementation is recommended for dogs with arrhythmias (500-1000mg of omega 3 and 6 once to twice daily).

Monitor at home for collapse, exercise intolerance, and/or lethargy. If a holter monitor is elected, this will dictate whether therapy is needed and follow up protocol.

Anesthetic risk is considered moderately elevated. Avoid ketamine, telazol, Dexdomitor (or other alpha-2 agonists) and acepromazine. Recommend having lidocaine CRI available for use in the event of worsening ventricular arrhythmias under anesthesia (CRI 50—75mcg/kg/min).

PLAN

Consider holter monitor as discussed. Consider further work up through labs, abdominal ultrasound, etc.

A recheck echocardiogram/ECG is recommended in 6 months, sooner if symptoms of cardiac disease arise (cough, labored breathing, etc.).
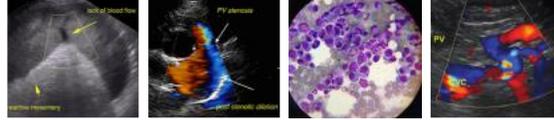
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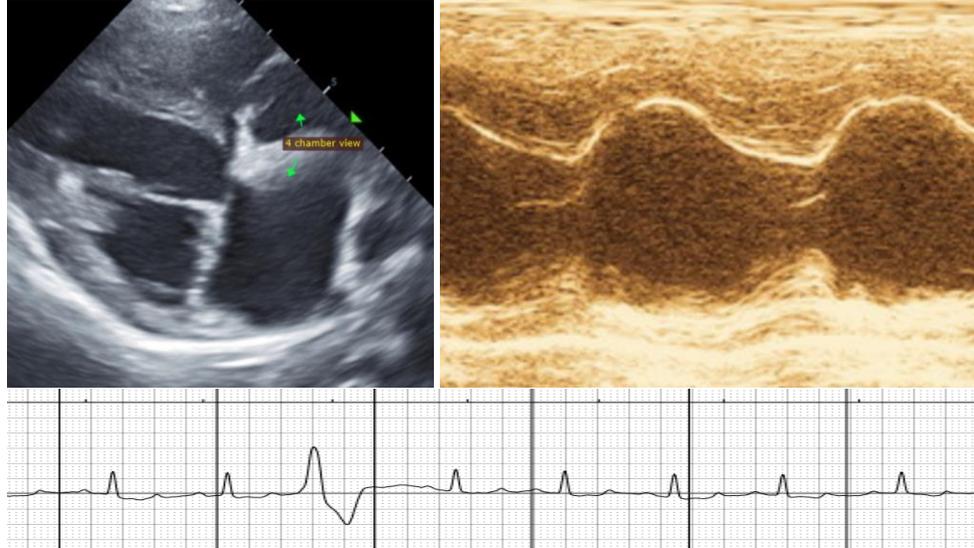**REFERRING VET**

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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)
info@sonopath.com