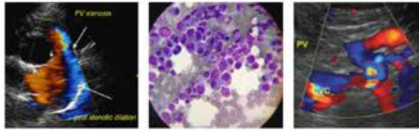
IMAGING PERFORMED BY

SVS Mobile Imaging 262 - 366 - 5970
fredgromalak@gmail.com



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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PATIENT
Caedus Roberts

SPECIES
Canine

BREED
Beagle X

SEX
Neutered Male

AGE
11 Years

WEIGHT
47.8 Pounds

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY
Kim Liedberg

HOSPITAL NAME
SVS Imaging WI

REFERRING VET
Dr. Khatter

INVOICE
40220

DATE
8/4/22

PRESENTING CLINICAL SIGNS

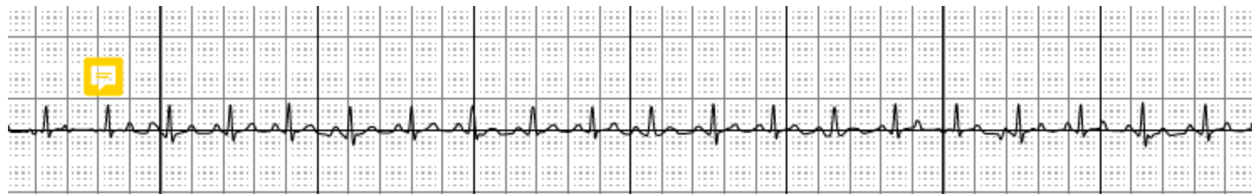
Hx of pancreatitis, 3.6 left side systolic heart murmur noted on exam. Has had pruritus and was treatd.
Abnormal PE/Chem/CBC/UA Results: ProBNP 103

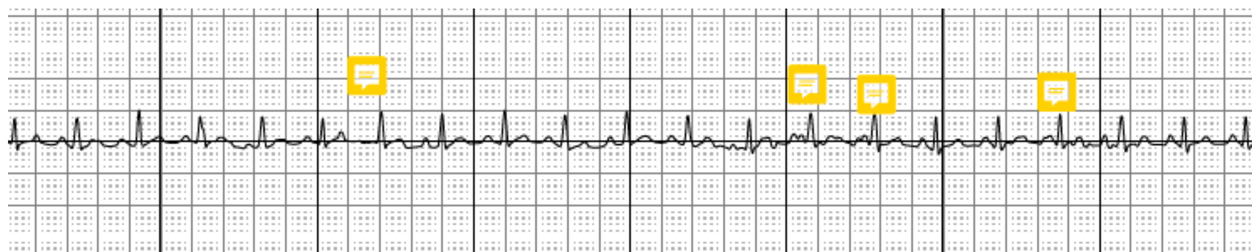
ULTRASONOGRAPHIC EXAMINATION OF THE HEART

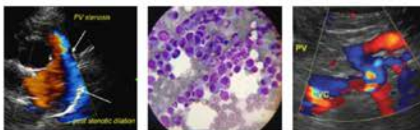
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swedish)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	4.1	2.14	1.35	1.41	43	NM	0.23
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** kg	**LA** 2D long 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				
PATIENT	131	1.34	0.88	21.7	3.08	Long 3.61	Long 2.04

Adapted from June Boon, Veterinary Echocardiography, 1998
Sisson D et al. JVIM 1991; 5: 232, and Jacobs et al. Am J Vet Res 1985; 46:1705

Electrocardiogram (AliveCor)







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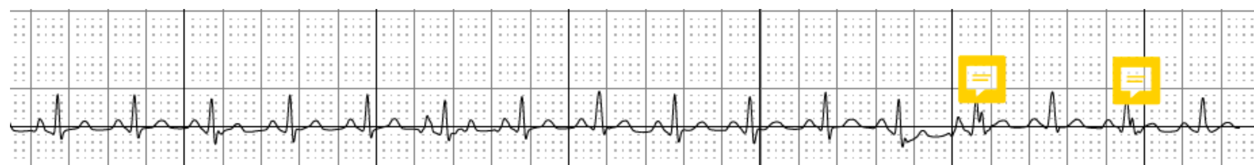


Heart rate 153 bpm

Occasional beat with a notched QRS, suggestive of a buried P wave in the QRS (AV dissociation).

Two QRS waves without P waves

A few P waves that appear bi-waved, which may be suggestive of a blocked P wave vs. beats throughout the ECG show possible blocked P waves and AV dissociation.

*An ECG of longer duration is required to confirm whether Caedus is suffering from Second Degree Atrioventricular Heart Block (High Grade).

Echocardiographic findings

Mitral valve

- Moderate to marked thickening and irregularity; consistent with myxomatous degeneration
- Mild prolapse of septal leaflet.
- Marked mitral regurgitation.
- Mild left auricular enlargement.
- LA: Ao ratio: within normal limits (WNL)
- LA normalized for BW (LAN = 1.1); very mild enlargement
- LVIDd normalized for BW (LVIDND = 1.5); WNL
- LVIDs normalized for BW (LVIDNs = 0.77); WNL

Aortic valve

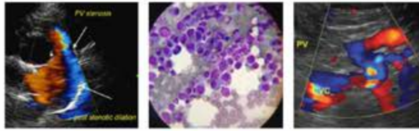
- No abnormalities
- No aortic insufficiency

Tricuspid valve

- Mild to moderate thickening and irregularity of the septal leaflet; consistent with myxomatous degeneration
- No prolapse.
- Mild tricuspid regurgitation.
- No right ventricular or atrial enlargement.

Pulmonic valve

- No valvular abnormalities
- No pulmonary insufficiency.



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- Turbulent blood flow (right ventricular outflow tract) with velocity of 2.21 m/s
- No obvious signs of stenosis to explain the turbulent blood flow
- Main pulmonary artery within normal limits.

Other

- No signs of pericardial or pleural effusion
- No evidence of pulmonary edema.
- Pulmonary veins, no abnormalities.
- No obvious signs of a mass.
- Endocardium and myocardium: NAF

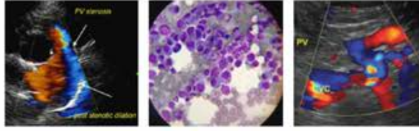
ULTRASONOGRAPHIC FINDINGS

- Myxomatous degeneration of the mitral (moderate to marked) and tricuspid (mild to moderate) valves, ACVIM stage B2, with very mild left atrial enlargement. The left ventricle within the normal reference range.
- An ECG of longer duration is required to confirm whether Caedus is suffering from Second Degree Atrioventricular Heart Block (High Grade).
- The results of the echocardiogram do not meet the criteria of the EPIC study, i.e., medication is not required at this time. However, it may be considered if he is demonstrating any of the signs described below.
- Furthermore, one should consider treatment with pimobendan if general anesthesia is required (e.g. dentistry), as it will help stabilize the heart and decrease the associated risks.
- A cause for the turbulent blood flow in the right ventricular outflow tract is not identified.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Suggestions/recommendations include:

- Evaluation of arterial blood pressure
- Monitoring of the resting (sleeping) respiratory rate (RRR) is highly recommended once to twice a week. The RRR should NOT EXCEED 30 breaths per minute (bpm). If the respiratory rate is greater than 30 bpm, *or* if there is a gradual increase (over a day or two) toward 30 bpm, the patient should be evaluated immediately for congestive heart failure and the appropriate treatment initiated.
- Other clinical signs clients should monitor for include coughing (particularly at night), fatigue, lethargy, decreased exercise tolerance (i.e., not being able to walk for as long before becoming tired, or "running out of breath" while playing, or going up and down stairs, as well as syncope (collapsing or fainting spells). Restlessness, or agitation during the night, or being unable to find a comfortable position to sleep are also very common clinical signs.



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- Mild salt restriction is suggested (less than 0.9 grams/1000 kcal of food). Monitor salt content in treats

- Monitoring for progression of heart disease with a re-evaluation of an echocardiogram every 6 to 8 months, or sooner if clinical signs develop, is recommended.

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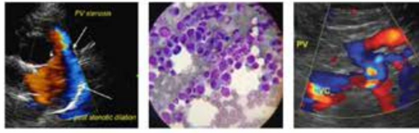

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

Lisa.Carioto@sonopath.com