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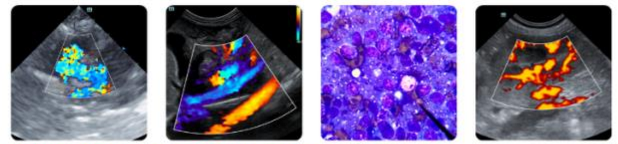

Clinical Sonography & Telecytology
Educational Teleconsultation Services™

PATIENT

Sydney Silver

SPECIES

Canine

BREED

Westie

SEX

Neutered Male

AGE

15 Years

WEIGHT

17.6 pounds

INTERPRETED BY

Camden Rouben DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY

Kathleen Byrnes

HOSPITAL NAME

Stewart's Mountain View AH

REFERRING VET

Dr. Stewart

INVOICE

14610

DATE

03/25/26

PRESENTING CLINICAL SIGNS

- P presented for echo due to bradycardia, heart rate will range from 40- 120 bpm

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (M-Mode)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT	3.17	2.84	1.72	1.23	38.16	70.25	0.18
CANINE CARDIAC PARAMETERS	**RVOT** VMAX (m/s)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**LAD** LA MAX 4 Chamber	**LVIDd** Avg; 2D and m-mode short axis (cm)	**LVIDs** Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER		0.7-1.7	0.7-1.6				
PATIENT	0.78	1.59	0.95	8.0	19.5 mm	2.78	1.72

Cardiac Presentation

Based off of the images provided, the left atrial size is within normal limits. The mitral valve leaflets are mildly thickened and there is trace to mild mitral regurgitation. There is no significant prolapse of the mitral valve leaflets. The right atrial size is within normal limits. There is mild tricuspid regurgitation and thickening of the tricuspid valves. Based off of the tricuspid regurgitation velocities alone, there is suspected pulmonary hypertension in regard to the pulmonic insufficiency and mild distention of the main pulmonary artery. The right ventricle size appears within normal limits for structure and function. The left ventricular wall thicknesses are within normal limits. The left ventricular systolic and diastolic function appear within normal limits, and the overall sizes are within normal limits in systole and diastole. The aortic valve has normal morphology. The aortic outflow velocities are within normal limits. There is no evidence of aortic insufficiency. The pulmonic valve has normal morphology. There is evidence of very mild pulmonic insufficiency and the pulmonic outflow velocities do have a delayed excursion pattern. There is no evidence of pleural or pericardial effusion based off of the images provided. There is no evidence of intracardiac masses based off of the images provided.

ECG

The average heart rate does range from 40 to 120 with an average ventricular heart rate of 112 beats per minute. It is an underlying sinus arrhythmia with intermittent APCs, very rare VPCs, monomorphic and occasional second-degree AV block Mobitz type 2 with 2:1 and 3:1 conduction.

Thoracic Radiographs

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There are four views presented. In terms of the thoracic radiographs, the cardiac silhouette is of normal size with a vertebral heart score of 10. The cranial adjacent cardiopulmonary vasculature and caudal cardiopulmonary vasculature is within normal limits. The trachea does have evidence of a redundant tracheal membrane at the thoracic inlet. There is no significant evidence of intrathoracic masses or cardiogenic or non-cardiogenic pulmonary edema or pleural fusion based off of the images provided.

ULTRASONOGRAPHIC FINDINGS

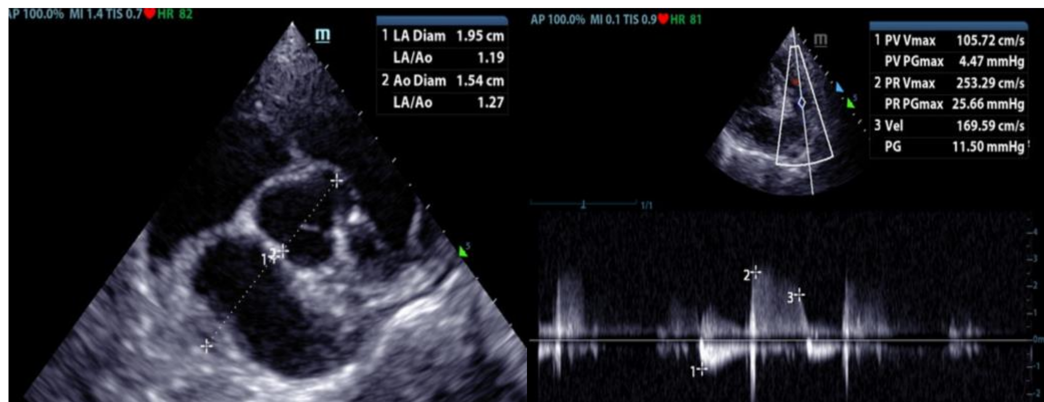
- Based off of this comprehensive overall assessment, this patient does have very degenerative valve disease affecting the mitral and tricuspid valves, ACVIM stage B1.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The regurgitation noted at the tricuspid, mitral, and pulmonic valves are also likely enhanced by the AV block as well as bradycardia. Based off of this entire patient's clinical picture, a full CBC, chemistry and blood pressure assessment is warranted to rule out causes of the bradyarrhythmia.

On top of that, based off of the patient, an atropine response test may be considered in this particular patient to rule out an increased vagal tone as the cause of the significant bradyarrhythmia in the atrioventricular block. This patient, given its breed and ECG, does have an increased concern for sinus node dysfunction, so a 24-hour Holter monitor should be considered in this particular patient.

No cardiac-specific medications are warranted for the patient's very mild degenerative valve disease. The thoracic radiographs do not show evidence of significant cardiac enlargement or congestive heart failure. If the patient does have a positive response to atropine, then the use of sympathomimetics should be considered in this patient to combat its bradyarrhythmia.



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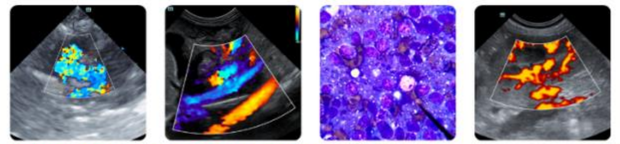

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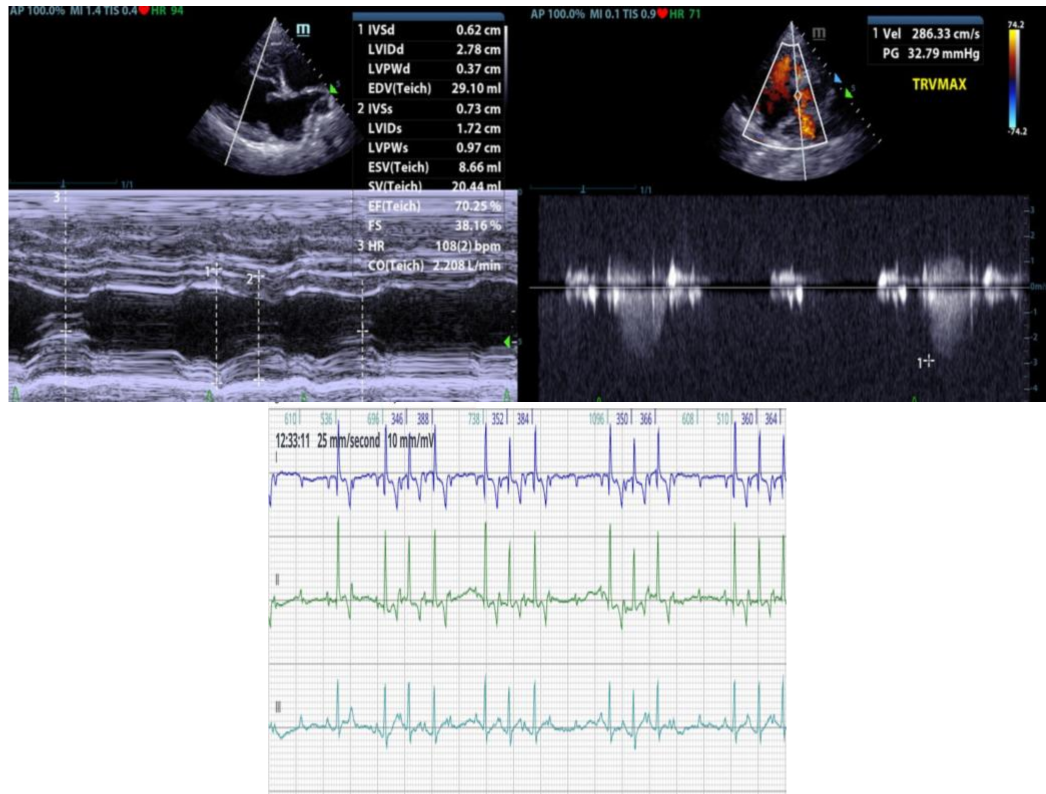

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Camden Rouben DVM, DACVIM (Cardiology)

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