

PATIENT

Gracie Vernon

SPECIES

Canine

BREED

Schnauzer

SEX

Female Spayed

AGE

13 years

WEIGHT

14.6lbs

INTERPRETED BY

Maggie Machen
 Lamy, DVM, DACVIM
 (Cardiology)

IMAGING PERFORMED BY

Sara Hansen

HOSPITAL NAME

Pawsitive Wellness
 Veterinary Care

REFERRING VET

Dr. Hardy

INVOICE

23306

DATE

3/28/22

PRESENTING CLINICAL SIGNS

History: Seizure and two syncopal episodes over the weekend.
 -Abnormal PE/Chem/CBC/UA Results: Pct high .605, ALT HIGH 182, ALKP 401, GGT 13.
 -Sedation used: Torb.

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip.

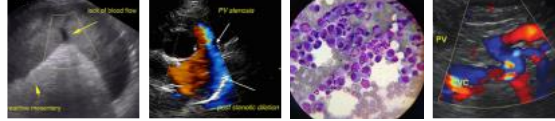
Morphology/MEA cannot be definitively commented on.
 A single lead ECG is available; 50mm/s, 10mm/mV. The average heart rate is 100bpm (range 75-142bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive. No ectopic beats, pauses or dysrhythmias observed.
 ECG diagnosis: Normal sinus rhythm with respiratory variation.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse nodular thickening of mitral valve leaflets. Mild prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with moderate to severe left atrial enlargement. MR velocity is normal. Mild LV dilation with hyperdynamic myocardial function and evidence of volume overload. The tricuspid valve appears mildly thickened with mild tricuspid regurgitation. Normal velocity. Normal right heart and MPA dilation. The pulmonic valve is normal in appearance and mobility. No PI. Normal pulmonic outflow velocities. Aortic valve appears normal with normal outflow velocities. No aortic insufficiency noted. No pericardial or pleural effusion seen. No obvious cardiac tumors.

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	5.3	2.0	1.8	1.8	42	74	0.16
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	85	1.5	0.7	6.6	2.8	3.6	2.1
*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 severe mitral and mild tricuspid regurgitation. Moderate to severe left atrial enlargement indicates there is an elevated risk for spontaneous congestive heart failure. No additional comorbidities are seen such as systolic dysfunction. The ECG is unremarkable with a respiratory sinus arrhythmia. The heart rate is relatively slow; however, this is presumably due to sedation and difficult to interpret.

Suspect syncopal episodes in this patient are most likely cardiogenic in origin. Possible causes include poor forward blood flow leading to hypoxia, early CHF, severe pulmonary hypertension (not seen), an intermittent arrhythmia and/or blood pressure swings (possible). No arrhythmias are seen on the ECG; however, this does not rule out intermittent brady or tachyarrhythmias (which this signalment is predisposed to). In light of severity of disease on echocardiogram, there is concern this patient is progressing to early congestive heart failure and full lifelong cardiac supportive therapy is warranted as below. **Screening chest radiographs are highly recommended as a baseline.** Long term prognosis is guarded to poor; however, most dogs are able to maintain a good QOL on medications for an average of 8-12 months. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future. Should syncope persist despite medication changes and Lasix initiation, a holter monitor, sildenafil trial, and/or additional diagnostics may be warranted to rule out other contributing causes.

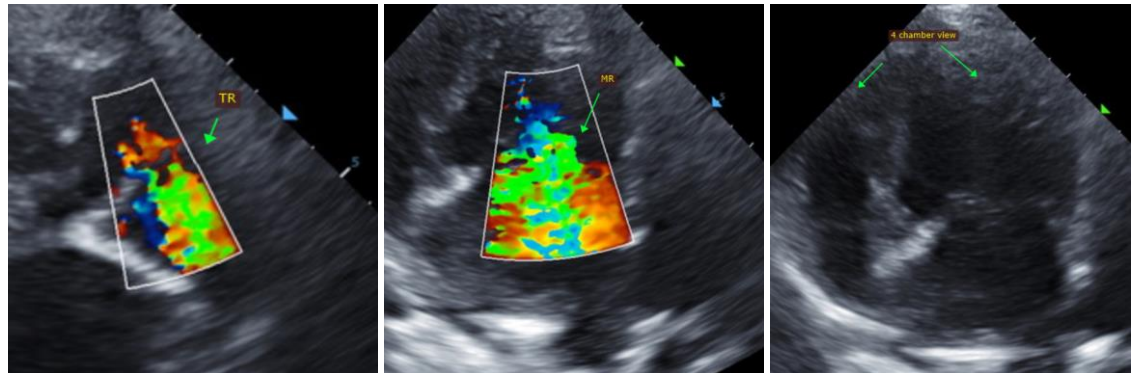
Monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home. Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or worsening collapse episodes in the future.

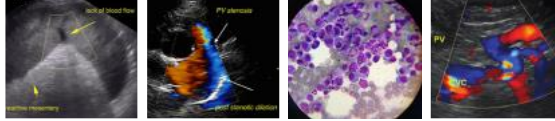
PLAN

Screening BP and chest radiographs recommended. Institute furosemide 1mg/kg PO q12. Administer spironolactone 1-2mg/kg PO q12h. Institute Pimobendan 0.2-0.3mg/kg PO q12h. Pending BP result >130mmHg, institute ACEI 0.5mg/kg PO q12h. Monitor SRRs at home. Monitor renal values and BP in 10-14 days, then every 3-4 months while on diuretics. If syncope persists, a holter monitor is strongly recommended in this predisposed breed.

Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any clinical signs occur in the interim.

IMAGES





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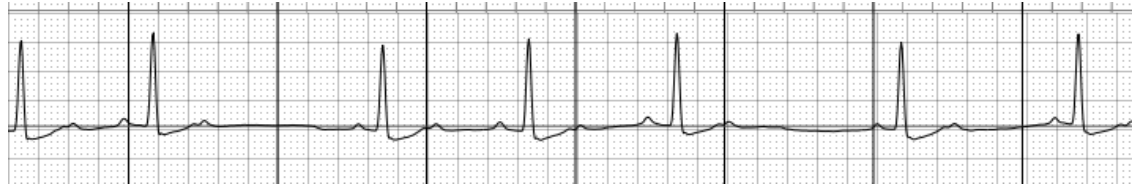
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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
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