



## PATIENT PRESENTING CLINICAL SIGNS

Casey Chialis History: Patient presented for seizures, underlying heart disease. Current treatments: in O2 therapy, on Lasix 20 mgs 1/2 tab PO q 12 hrs, Vetmedin 1.25mgs 1 PO BID, Spironolactone. Abnormal PE/Chem/CBC/UA Results: BG- 445. U/A- pending dipstick keytones, glucose (trace).

## SPECIES

Canine

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

## BREED

Havanese

## SEX

Neutered Male

## AGE

12 Years

## WEIGHT

11 Pounds

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	<1.3	28-40	40-100	<0.6
PATIENT	--	--	2.7	2.8	45	79.8	0.41
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				
PATIENT	125	1.6	0.9	--	4.8	4.0	--

## INTERPRETED BY

R. McKenzie Daniel, DVM, DABVP (Canine and Feline)

## IMAGING PERFORMED BY

Kelly Vazquez

## HOSPITAL NAME

Westwood Regional VH

## REFERRING VET

Dr. Silver

## INVOICE

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## DATE

5/31/22

## Cardiac Presentation

The echocardiogram for this patient presented severe excessive **left atrial size** expressed both in the LA/AO and LA max measurements. Deviation of the intraatrial septum towards the right atrium indicative of increased LA pressure was present. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. No overt evidence of valvular prolapse or chordae tendineae rupture. Doppler indicated measurable moderate eccentric insufficiency. The **left ventricle** presented normal thicknesses with maintained linear contour with increased left ventricle volume. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology. No overt or significant TR on doppler. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx. 1:1 pa/ao ratio). Mild volume pericardial and free pleural fluid was noted. No echographically detectable evidence of infiltrative disease or cardiac tumors were visible. The cranial **mediastinum and pericardial regions** were free of overt masses in the visible window. Focal areas of subjective pulmonary comet tail artifact, which is nonspecific yet may be associated with edema, microconsolidation, thromboembolic disease, neoplasia or other pulmonary abnormalities was present. Intermittent probable arrhythmia noted.



**PATIENT**

**Urinary System**

Casey Chialis

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of – cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

**SPECIES**

Canine

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some mild increased echogenicity and loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 4.0 cm in length. The right kidney measured 4.0 cm in length.

**BREED**

Havanese

**SEX**

Neutered Male

**Adrenal Glands**

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.74 cm width at the caudal pole and 0.56 cm width at the cranial pole.

**AGE**

12 Years

The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.38 cm width at the caudal pole.

**WEIGHT**

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**Spleen**

The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age-related remodeling with minor potential for inflammatory or neoplastic disease.

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**Liver**

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. No evidence of hepatic vascular congestion.

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The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

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**Gastrointestinal**

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained mild nonshadowing ingesta/chyme was present.

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The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material.

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Normal visible colon wall layers were present with apparent formed feces in lumen.

**Pancreas**

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**PATIENT**

Casey Chialis

The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.

**SPECIES**

Canine

**Free Abdomen**

No omental masses, lymphadenopathy or evidence of peritoneal free fluid was present.

**BREED**

Havanese

- Chronic mitral valve disease (ACVIM stage C)
- Mild volume pericardial and pleural effusion
- Probable arrhythmia
- Sonographically unremarkable mild geriatric abdomen

**SEX**

Neutered Male

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**AGE**

12 Years

The study is consistent with chronic degenerative valvular changes and moderate eccentric mitral valve insufficiency, which has progressed to significant left heart dilation and likely consistent with cardiogenic mild volume pericardial and pleural free fluid. Contributing factors to the pericardial and pleural free fluid cannot be definitively excluded yet considered less likely.

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Consider hospitalization with IV diuretic therapy and as needed oxygen until patient is stabilized. ECG assessment is strongly suggested for further assessment of the probable arrhythmia and potential for atrial fibrillation in this patient. The seizure activity may potentially be syncopal episodes secondary to underlying significant heart disease and arrhythmia. Pimobendan at 0.3 mg/kg PO BID, Lasix/spironolactone combination at 1-2 mg/kg PO BID with monitoring of systemic BP and renal parameters is recommended. If BP is >130, ace-inhibitor medication may also be considered (not advised if BP is <130). Rate control is recommended pending ECG analysis or if clinically indicated. Baseline monitoring of resting respiration rate, as well as thoracic radiographs for evidence of resolved persistent or progressive evidence of edema or pleural free fluid suggested. Long-term very guarded prognosis pending response to medical therapy and ECG.

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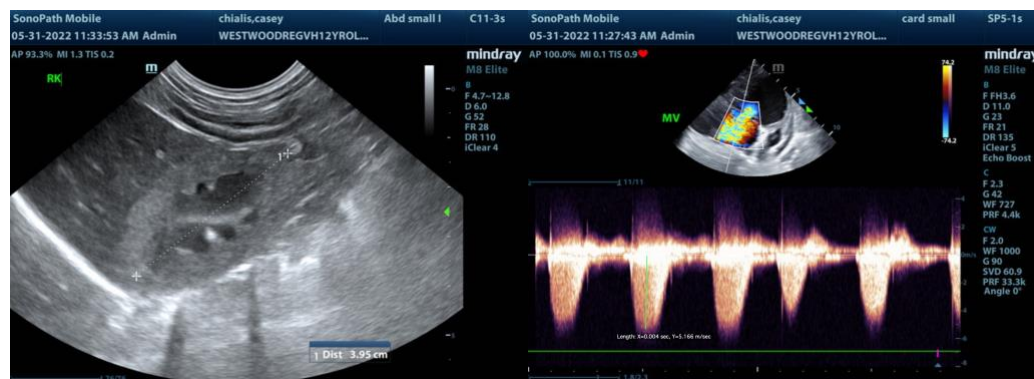
Recheck echocardiogram suggested in 4-6 months or sooner if continued clinical signs of CHF are noted.

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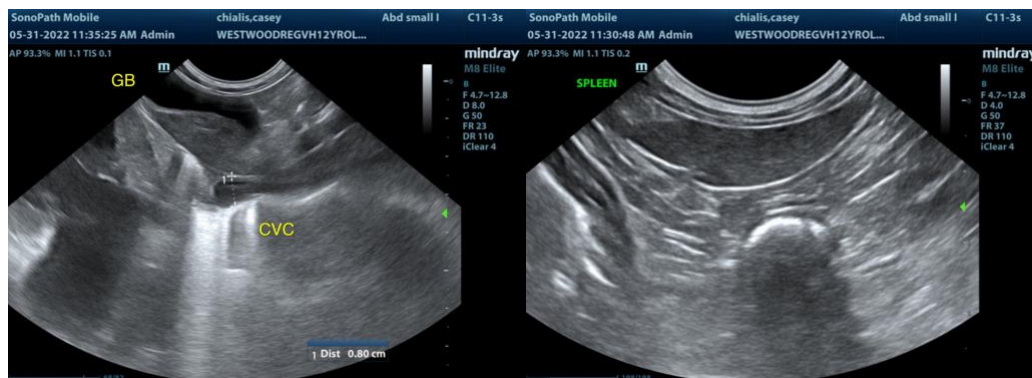
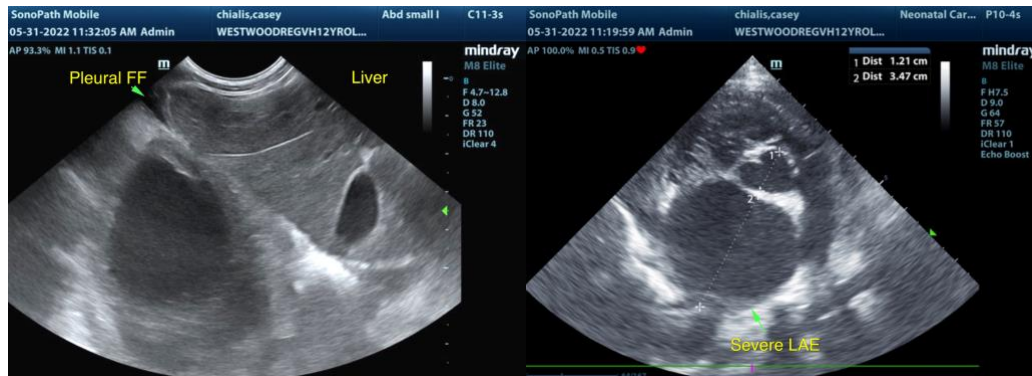
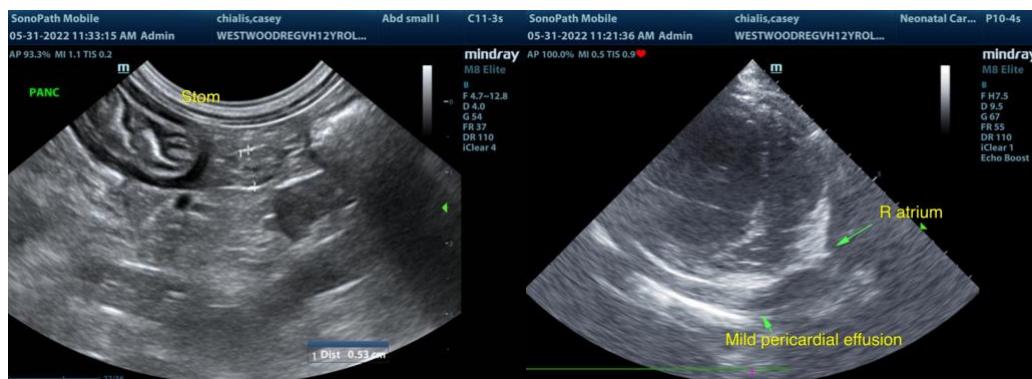
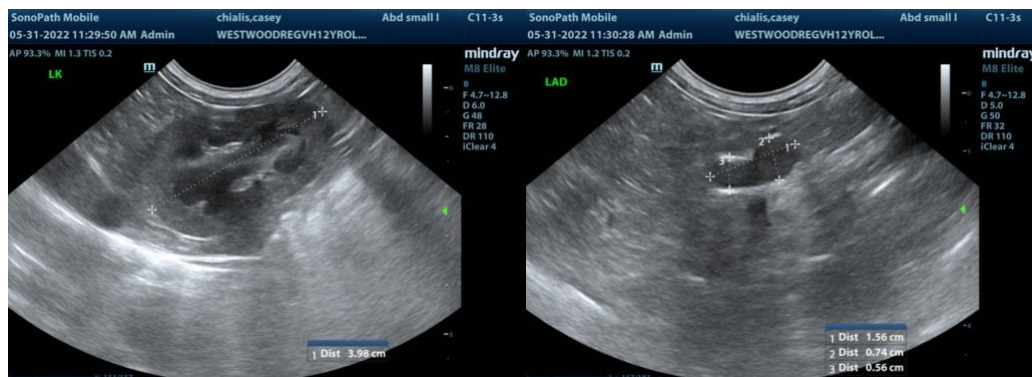
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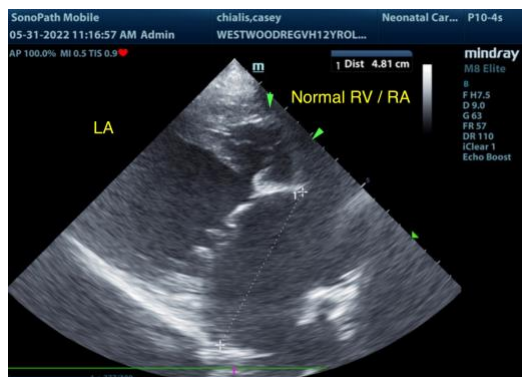
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

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