



## PATIENT PRESENTING CLINICAL SIGNS

Marlo Reichstein

History: Proteinuria. Current meds: Semitra.

Abnormal PE/Chem/CBC/UA Results: Total protein 4.7, BUN 47, creatinine 2.1, chol. 493, CPK 57, SDMA 27, Urine/protein creatinine ratio 2.5. U/A: pH 5.0, protein 3+.

## SPECIES

Canine

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

## BREED

Wheaton Terrier

## SEX

Neutered Male

## AGE

8 Years

## WEIGHT

31 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	--	2.0	1.1	1.1	42	76.3	0.2
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	113	1.55	1.2	--	3.0	3.1	--

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Kelly Vazquez

## HOSPITAL NAME

Marsh Hospital for  
Animals

## REFERRING VET

Dr. Milwicki

## INVOICE

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## DATE

5/23/22

### Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. The **left ventricle** presented thicknesses with linear contour and was not dilated nor restricted. 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. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. Mild TR present on doppler. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. Trace pulmonic insufficiency present on doppler. **Pulmonary outflow** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window.

### Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 cm exhibited normal thickness and tone. Anechoic urine and quiet sediment were present. The ureteral



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papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted. Aortic trifurcation was normal.

The residual prostate was free of pathology.

**SPECIES**

Canine

The kidneys were normal in size and margination. Mild loss of corticomedullary border demarcation present. No evidence of pyelectasia present. Subtle subjective nonuniform cortex echotexture noted. The left kidney measured 4.6 cm in length. The right kidney measured 5.1 cm in length. A small cortical cyst was present in the left kidney.

**BREED**

Wheaton Terrier

**Adrenal Glands**

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 1.9 cm in length x 0.71 cm width at the caudal pole.

**SEX**

Neutered Male

The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 2.3 cm in length x 0.46 cm width at the caudal pole.

No evidence of adrenal tumors.

**AGE**

8 Years

**Spleen**

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. 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. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

**WEIGHT**

31 Pounds

**Liver**

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion.

The gallbladder was mildly distended in size. Primarily anechoic content with mild primarily dependent nonmineralized debris present. No evidence of peripheral gallbladder inflammation. The cystic and common bile ducts were normal.

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**Gastrointestinal**

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The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction or foreign material.

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.

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**Pancreas**

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.

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**Free Abdomen**



**PATIENT** No overt lymphadenopathy or peritoneal effusion was present.

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## ULTRASONOGRAPHIC FINDINGS

### SPECIES

Canine

- Normal cardiac structure and function
- Mild TR and trace pulmonic insufficiency- estimated pulmonary pressure gradient based on measured TR velocity, not consistent with elevated pulmonary pressure.
- Bilateral chronic nephropathy
- Mild gallbladder debris (non-mucocele)

### BREED

Wheaton Terrier

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

### SEX

Neutered Male

Although nonspecific, the sonographic appearance of the bilateral kidneys is consistent with chronic nephropathy and highly suggestive of breed associated or familial protein losing nephropathy, often associated with Wheaton Terriers. If clinically indicated, further assessment to rule out contributing factors to the PLN, such as assessment for vector borne disease and/or leptospirosis titers/PCR, may be considered.

### AGE

8 Years

Continued therapy for PLN, including current angiotensin receptor blocker, reduced protein diet and monitoring of systemic BP and serial sonographic monitoring of renal parameters would be reasonable. Urine culture and sensitivity on sterile urine sample suggested, if not recently done. No indication for cardiac medications.

### WEIGHT

31 Pounds

For an additional charge, internal medicine consult can be utilized through SonoPath.com. You can select the internal medicine drop down at <http://spa.sonopath.com/>.

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One of the world's top internists & SonoPath associate Dr. Remo Lobetti BVSc, MMedVet, PhD, DECVIM can evaluate your case through SonoPath. <https://sonopath.com/resources/sonopath-services/internal-medicine-teleconsultation-services>

## IMAGING PERFORMED BY

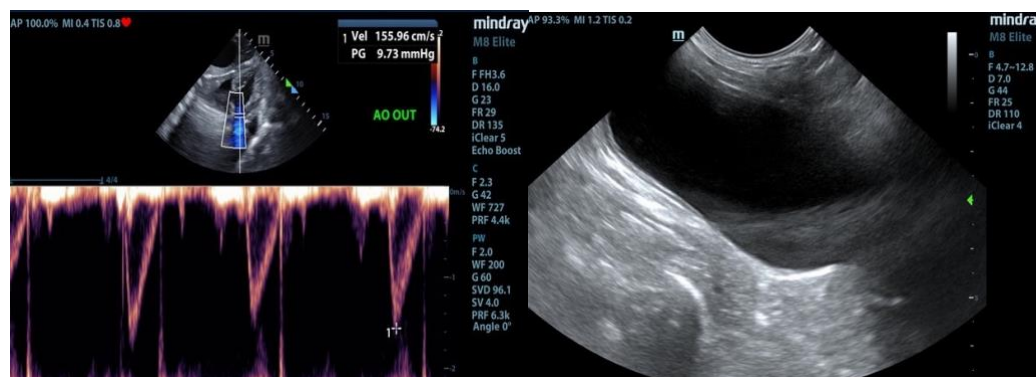
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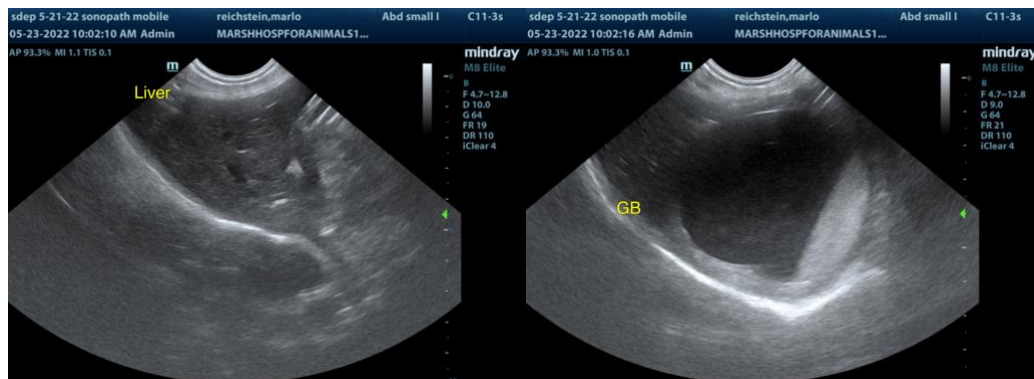
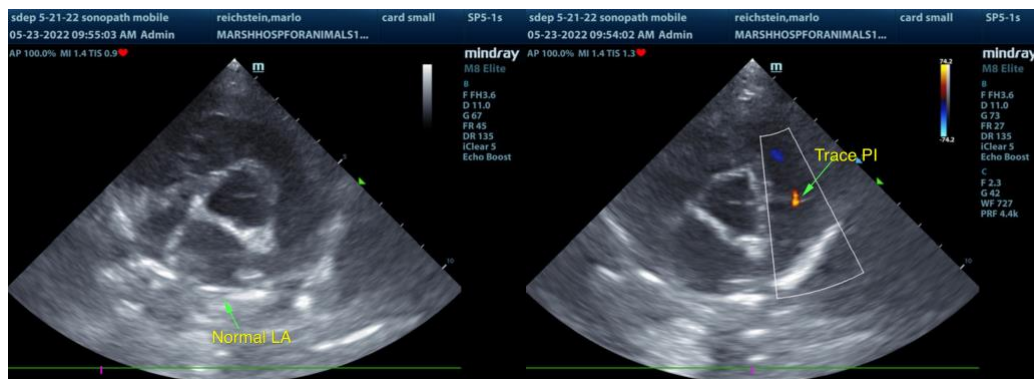
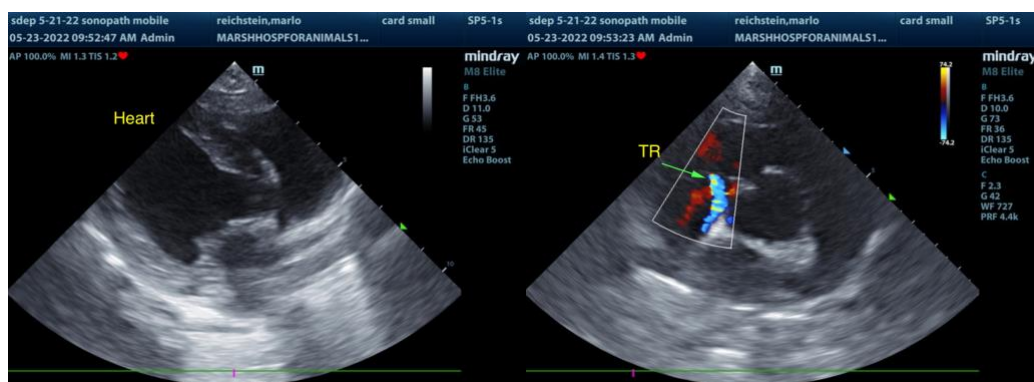
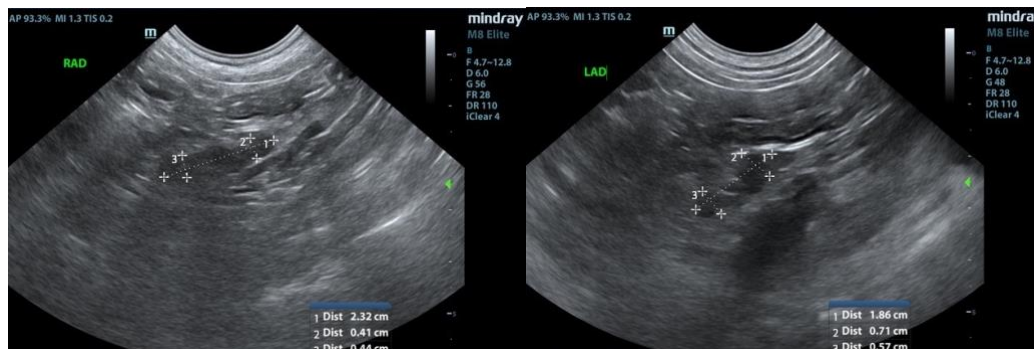
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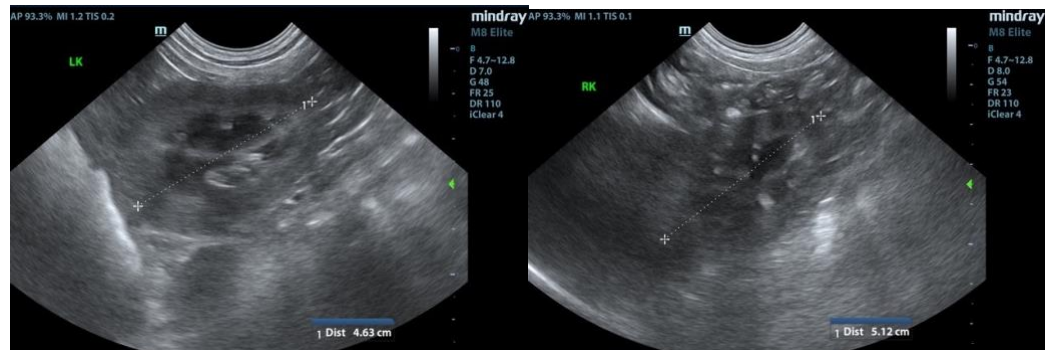
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

**R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)**  
info@SonoPath.com