


**PATIENT PRESENTING CLINICAL SIGNS**

Wing Reilly Recheck double cavity, last one performed Nov. 2021. Current meds: Tylan, spirinolactone, budesonide, sildenafil.

**SPECIES ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

Canine

**BREED**

Mixed

**SEX**

Spayed Female

**AGE**

9 Years

**WEIGHT**

7.3 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	<1.6	28-40	40-100	<0.6
PATIENT			NM	1.3	50	85	0.1
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	NM	1.64	1.2		1.4	1.3	

**Cardiac Presentation**

The left atrium and left ventricle were of normal size. Mild subjective flattening of the IVS was present. The cranial and caudal mitral valve leaflets presented minor thickening with mild MR. Left ventricle exhibited normal thickness with mild alinear contour and was not dilated or restricted. The myocardium exhibited mild non-homogeneous echogenicity, consistent with myocardial remodeling. Contractility of the ventricular walls was adequate, as evidenced by the fractional shortening measurement. The left ventricular outflow tract demonstrated normal systolic laminar flow with mild aortic valve insufficiency. Right atrium and auricle revealed increased size, anechoic content, and without evidence of spontaneous contrast. No overt masses. Tricuspid valve demonstrated vegetative thickening with moderate TR. The right ventricle exhibited significant concentric and eccentric hypertrophy with evidence of myocardial remodeling and variable thickness. Pulmonary outflow tract demonstrated significant increased size and normal systolic laminar flow with pulmonic valve insufficiency. In diastolic pulmonic valve insufficiency measured 0.88 cm. Pulmonic artery measured 1.4 cm diameter. No visible pericardial or free pleural fluid as well as no evidence of cranial mediastinal, pericardial or extracardiac masses in the visible window.

**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

**Urinary System**

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.

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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 increased echogenicity and moderate loss of corticomedullary symmetry and definition expected for the age of the patient. No



<b>PATIENT</b>	evidence of pelvic dilation was present. The left kidney measured 3.1 cm. The right kidney measured 3.7 cm.
Wing Reilly	
	<b><i>Adrenal Glands</i></b>
<b>SPECIES</b>	The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.42 cm at the cranial pole and 0.37 cm at the cranial pole. The right adrenal gland measured 0.37 cm at the cranial pole and 0.34 cm at the caudal pole.
Canine	
	<b><i>Spleen</i></b>
<b>BREED</b>	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.
Mixed	
	<b><i>Liver</i></b>
<b>SEX</b>	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 non-distended in size. The gallbladder wall was thickened in appearance consisting of an echogenic double rim corresponding to the inner and outer portions of the wall. This is consistent with gallbladder wall edema. Possible causes may include acute inflammation, hypoalbuminemia, right sided heart failure and anaphylaxis.
Spayed Female	
	<b><i>Gastrointestinal</i></b>
<b>AGE</b>	The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained echogenic, nonshadowing ingesta most consistent with post prandial presentation without signs of ileus, obstruction or foreign material.
9 Years	
	The small intestine presented intact wall layering with segmental propensity for prominent muscularis layer. Minor small intestinal retained chyme noted.
<b>WEIGHT</b>	Normal visible colon wall layers were present with apparent formed feces in lumen.
7.3 Pounds	
<b>INTERPRETED BY</b>	<b><i>Pancreas</i></b>
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	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.
	<b>ULTRASONOGRAPHIC FINDINGS</b>
<b>IMAGING PERFORMED BY</b>	<ul style="list-style-type: none"> <li>• Right ventricle severe concentric and eccentric hypertrophy with myocardial remodeling</li> <li>• Enlarged pulmonary artery with pulmonic valve insufficiency</li> <li>• TR/MR</li> <li>• Bilateral chronic renal changes</li> <li>• Minor gallbladder wall edema</li> <li>• Chronic inflammatory enteropathy pattern</li> </ul>
Kelly Vazquez	
<b>HOSPITAL NAME</b>	<b><u>INTERPRETATION OF THE FINDINGS &amp; FURTHER RECOMMENDATIONS</u></b>
Marsh Hospital for Animals	No overt evidence of right-sided heart failure given the lack of hepatic congestion and ascites. However, the minor gallbladder wall edema may suggest mildly elevated right heart pressure. Overall, the cardiac presentation was subjectively similar to the previous echocardiogram. If the patient is stable, continued current medical protocol recommended. However, going forward this patient is at continued risk for
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**PATIENT**

Wing Reilly

congestive right heart failure, malignant arrhythmias and potential sudden death. Exercise restriction is advised. Recheck echocardiogram suggested in 6 months, sooner if clinical signs consistent with RHF arise.

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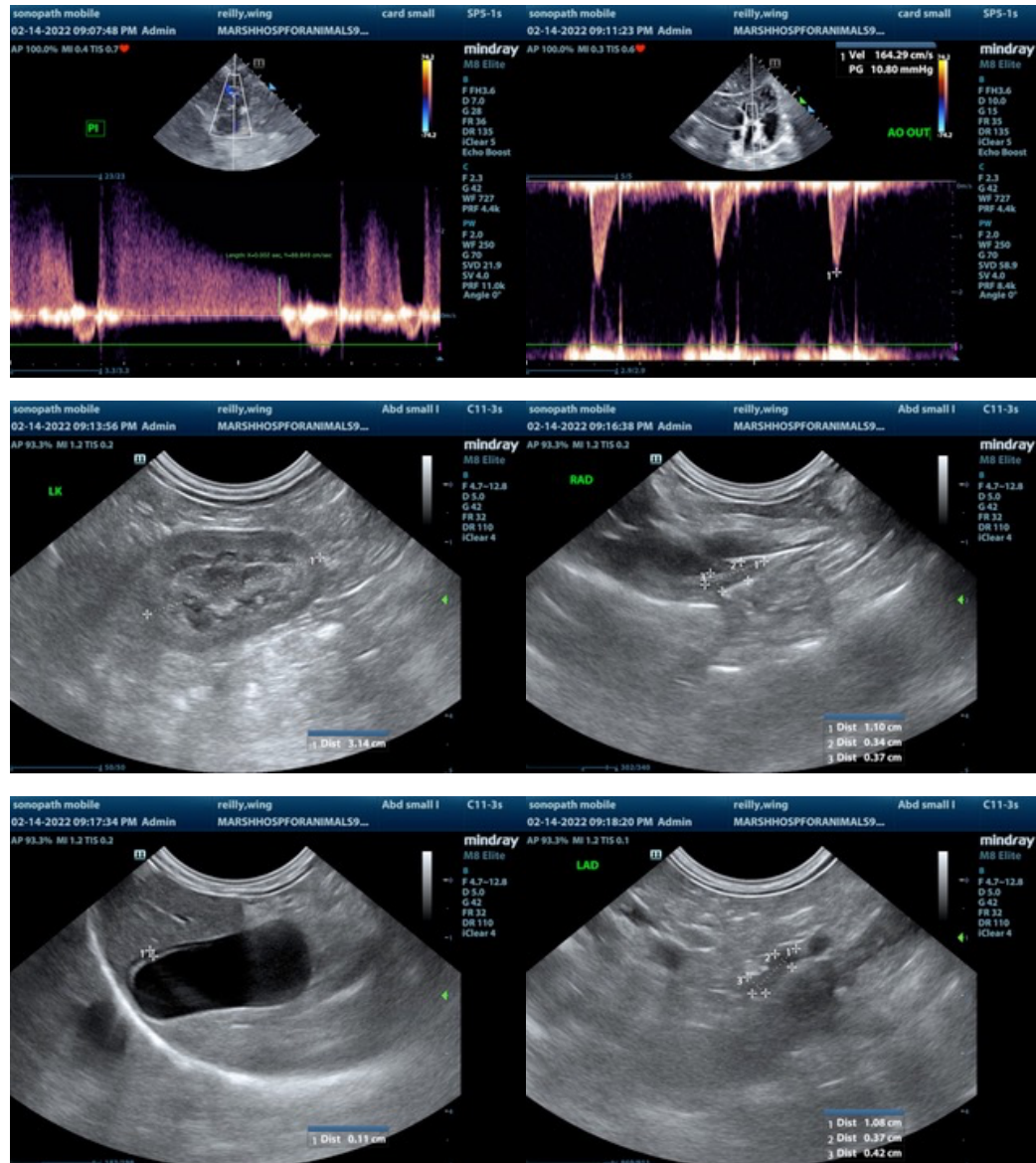
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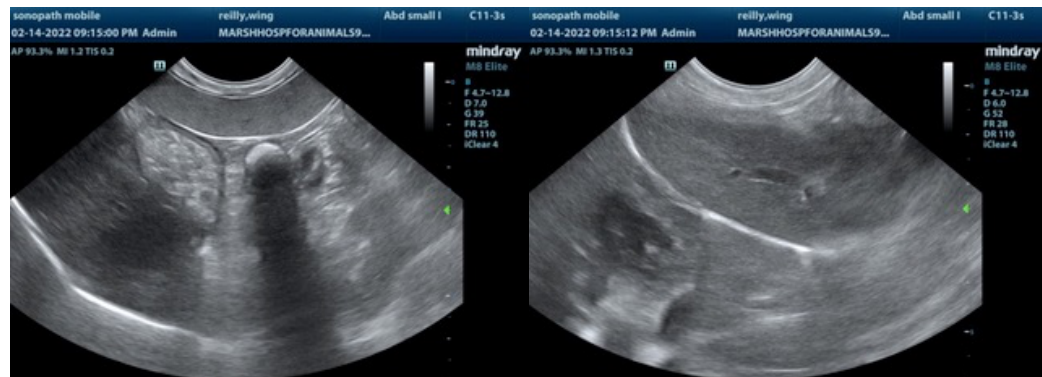
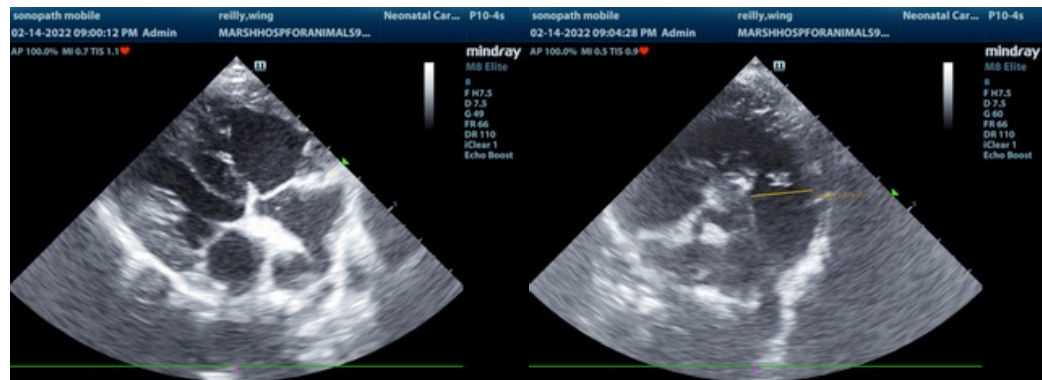
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)

info@SonoPath.com