



## PATIENT PRESENTING CLINICAL SIGNS

Raven Morrison acute regional (cranial) peripheral edema, low albumin, previous history of liver disease (previous report attached), coughing meds-usodiol  
Abnormal PE/Chem/CBC/UA Results: Sodium/Potassium ratio 27, total protein 44, alb 20, normal liver enzymes, USG 1.010, negative protein, Glu 4.7, BUN 3.4.

## SPECIES

Canine

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

## BREED

NSDTR

## SEX

Spayed Female

## AGE

10 Years

## WEIGHT

20 kg

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	5.0	1.7	NM	1.3	39.8	72	0.25
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	108	1.45	1.2		3.44	3.3	

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Kelly Reschny

## HOSPITAL NAME

Wellington AH

## REFERRING VET

Dr. Dennis

## INVOICE

35793

## DATE

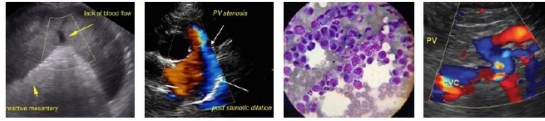
3/1/22

### Cardiac Presentation

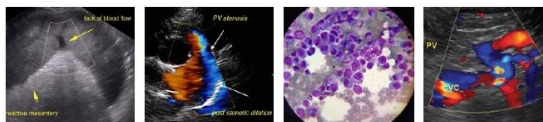
The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable mild insufficiency. 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 or chamber overload. **Tricuspid** valvular assessment revealed subtle concurrent thickening with minor TR. 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). No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The cranial **mediastinum** and **pericardial** 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 4.0 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.



<b>PATIENT</b>	No overt pathology in the area of the uterine remnant or aortic trifurcation.
Raven Morrison	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 loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 6.3 cm. The right kidney measured 5.4 cm.
<b>SPECIES</b>	
Canine	<b>Adrenal Glands</b>
<b>BREED</b>	The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 2.1 cm length x 0.60 cm at the caudal pole. The right adrenal gland measured 2.1 cm length x 0.62 cm at the caudal pole.
NSDTR	<b>Spleen</b>
<b>SEX</b>	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.
Spayed Female	
<b>AGE</b>	
10 Years	<b>Liver</b>
<b>WEIGHT</b>	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. The gallbladder was non-distended in size with thin walls and mild non-dependent to mineralized luminal gallbladder debris. No evidence of peripheral gallbladder inflammation. The common bile duct was normal.
20 kg	
<b>INTERPRETED BY</b>	<b>Gastrointestinal</b>
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained moderate primarily nonshadowing ingesta most consistent with post prandial presentation without signs of ileus, obstruction or foreign material.
<b>IMAGING PERFORMED BY</b>	The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. Segmental non-shadowing digesta/chyme present.
Kelly Reschny	Normal visible colon wall layers were present with apparent formed feces in lumen.
<b>HOSPITAL NAME</b>	<b>Pancreas</b>
Wellington AH	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>REFERRING VET</b>	<b>Free Abdomen</b>
Dr. Dennis	No omental masses, lymphadenopathy or peritoneal free fluid.
<b>INVOICE</b>	<b>ULTRASONOGRAPHIC FINDINGS</b>
35793	<ul style="list-style-type: none"> <li>• Compensated mitral valve insufficiency, normal left atrium (ACVIM B1)</li> <li>• Minor TR – estimated pulmonary pressure gradient not consistent with clinical pulmonary hypertension.</li> </ul>
<b>DATE</b>	
3/1/22	



**PATIENT**

Raven Morrison

- Non-cardiogenic peripheral edema
- Bilateral mild chronic renal changes
- Mild hepatic parenchymal remodeling – subjectively benign.
- Moderate non-dependent to mineralized gallbladder debris – mild non-obstructive, potentially dependent choleliths.
- Overtly normal gastrointestinal tract with gastric and segmental small bowel ingesta/chyme

**SPECIES**

Canine

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**BREED**

NSDTR

The lack of left atrial enlargement indicates that the hemodynamic effects of the eccentric mitral valve insufficiency are low, and indicates that potential complication secondary to the mitral valve insufficiency is low. No indication for cardiac medications.

**SEX**

Spayed Female

Given the lack of reported gastrointestinal signs, negative urine protein and normal hepatic functionality, an obvious cause of the hypoalbuminemia was not definitively evident. Resting cortisol level as well as GI panel to include PLI, TLI, cobalamin and folate to rule out occult disease could be considered. Potential for non-specific vasculitis. Empirically, continued hepatosupportive medications including Ursodiol with monitoring for evidence of progressive cholestasis recommended. Continued monitoring of albumin levels and for evidence of gastrointestinal signs/PLE is recommended.

**AGE**

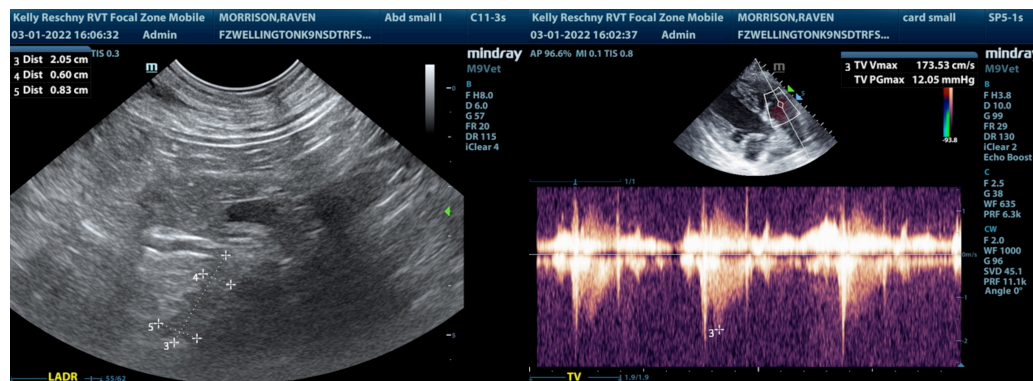
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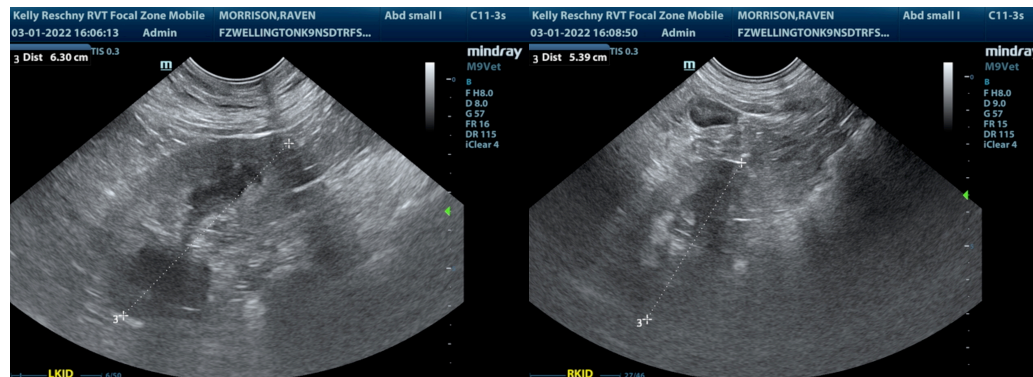
Kelly Reschny

**HOSPITAL NAME**

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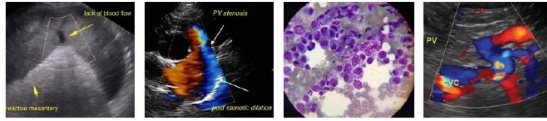


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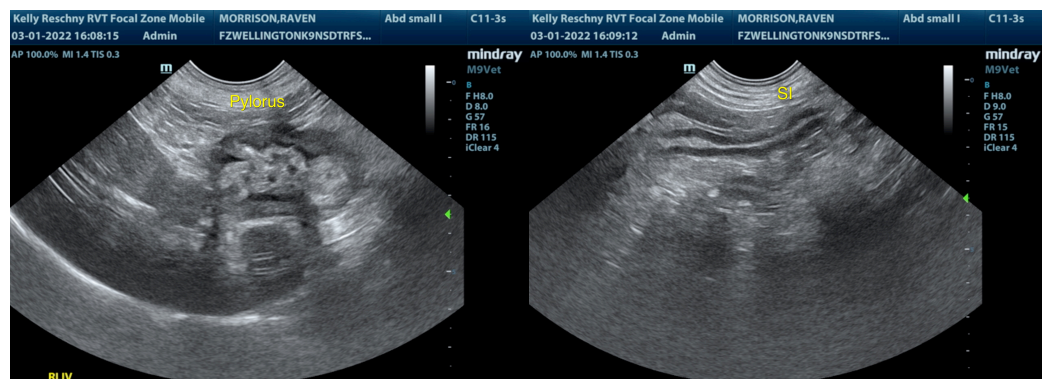
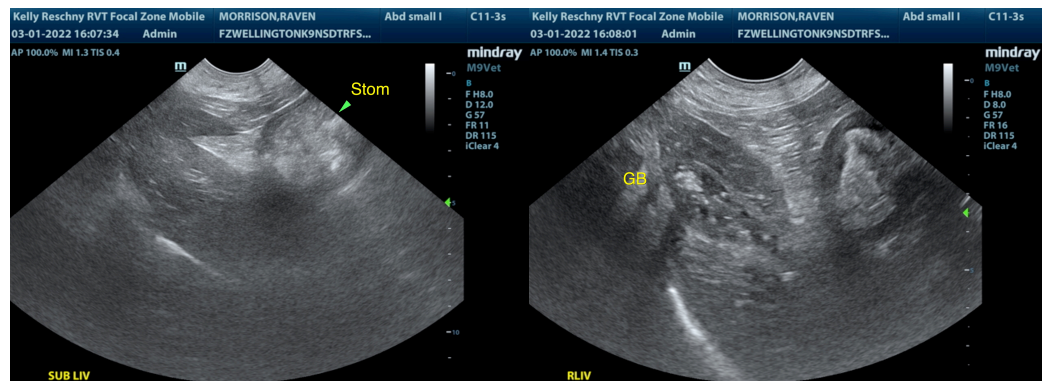
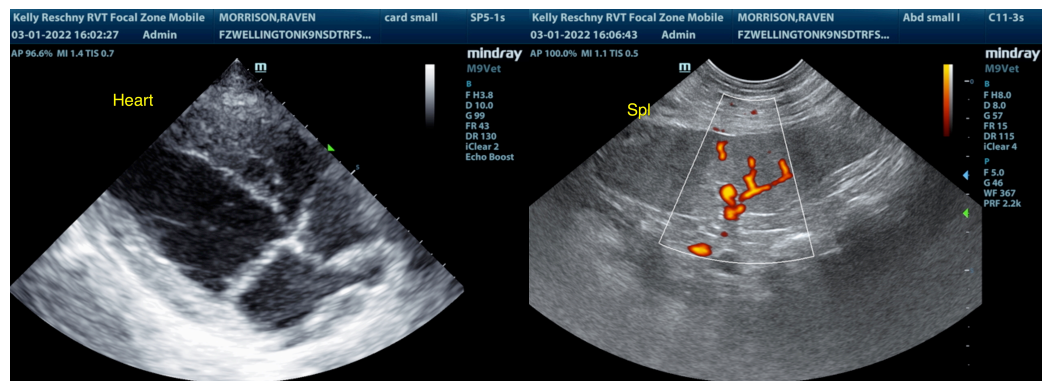
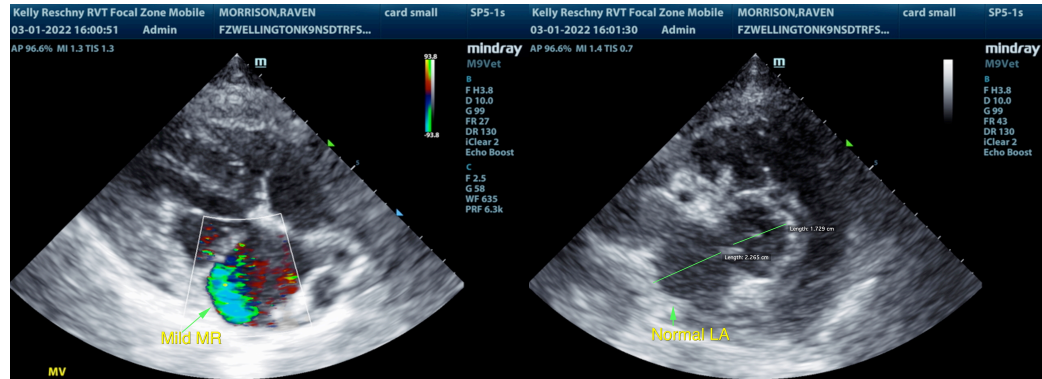
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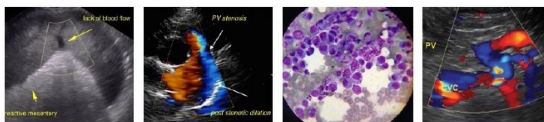
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**PATIENT**

Raven Morrison

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.

**SPECIES**

Canine

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

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NSDTR

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Spayed Female

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