


**PATIENT**

Cooper Shaw

**PRESENTING CLINICAL SIGNS**

chronic intermittent episodes of vomiting/diarrhea, tachycardia, with murmur and thrill

**SPECIES**

Canine

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

Golden Retr

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
<b>NORMAL PARAMETER</b>	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
<b>PATIENT</b>	5.3		--	1.36	39	69	0.3
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)
<b>NORMAL PARAMETER</b>	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
<b>PATIENT</b>	126	1.86	0.97		3.4	3.7	

**SEX**

MN

**AGE**

9 years

**WEIGHT**

41 kg

**INTERPRETED BY**

 R. McKenzie Daniel,  
 DVM, DABVP

**IMAGING  
 PERFORMED BY**

Kelly Reschny

**HOSPITAL NAME**

Wellington AHC

**REFERRING VET**

Dr. Dennis

**INVOICE**

13110

**DATE**

1/19/22

**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 mild vegetative thickening consistent suggestive of endocardiosis. Doppler indicated measurable eccentric insufficiency. No evidence of mitral valve prolapse or chordae tendinea rupture was noted. 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 demonstrated adequate linear morphology. 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. No overt arrhythmia was present.



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***Urinary System***

Cooper Shaw

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 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 was noted.

**SPECIES**

Canine

No overt pathology was noted in the area of the residual prostate.

**BREED**

Golden Retr

The area of the aortic trifurcation was free of pathology.

**SEX**

MN

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 6.7 cm in length. The right kidney measured 6.7 cm in length.

**AGE**

9 years

***Adrenal Glands***

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.67 cm width at the caudal pole and 0.7 cm width at the cranial pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.85 cm width at the caudal pole.

**WEIGHT**

41 kg

***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.

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***Liver/ Gallbladder***

The liver was subjectively normal in size and contour with generalized normal hepatic parenchyma echogenicity exhibiting mild coarse echotexture. A solitary, non-expansive, mildly nonhomogeneous to isoechoic intraparenchymal nodule was present in the mid liver measuring 2.3 cm in diameter. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

**REFERRING VET**

Dr. Dennis

***Gastrointestinal***

The gastric walls were sonographically unremarkable. The lumen of the stomach contained moderate, focally shadowing ingesta. The ventral gastric body wall width measured 0.45 cm.

**INVOICE**

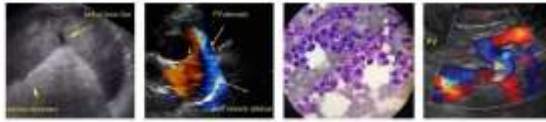
13110

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. Segmental, nonshadowing digesta / chyme was present. The duodenum wall width measured 0.40 cm. The jejunum wall width measured 0.35 cm.

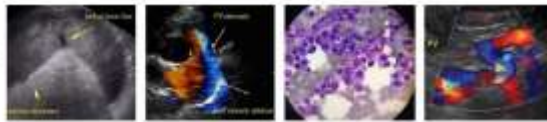
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Normal visible colon wall layers were present with apparent formed feces in lumen.



<b>PATIENT</b>	<b><i>Pancreas</i></b>
Cooper Shaw	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 were evident.
<b>SPECIES</b>	
Canine	<b><i>Free Abdomen</i></b>
	No overt lymphadenopathy or peritoneal effusion was present.
<b>BREED</b>	
Golden Retr	<b>ULTRASONOGRAPHIC FINDINGS</b>
	<b><i>Primary Findings</i></b>
<b>SEX</b>	<ul style="list-style-type: none"> <li>• Overall normal cardiac structure and function</li> </ul>
MN	<ul style="list-style-type: none"> <li>• Mildly thickened mitral valve with associated mild eccentric insufficiency</li> </ul>
<b>AGE</b>	<ul style="list-style-type: none"> <li>• Sonographically unremarkable gastrointestinal tract with gastric and segmental small intestinal ingesta / chyme</li> </ul>
9 years	<ul style="list-style-type: none"> <li>• Nonspecific mid liver Intraparenchymal nodule - suspect benign</li> </ul>
<b>WEIGHT</b>	<b><u>INTERPRETATION OF THE FINDINGS &amp; FURTHER RECOMMENDATIONS</u></b>
41 kg	The cause of the murmur is most consistent with mild chronic degenerative valvular changes and secondary mild eccentric insufficiency. No other clinical issues such as systolic dysfunction, arrhythmogenic disease, additional valvular insufficiencies / stenotic disease, or evidence of clinical pulmonary hypertension were noted. Correlation with pending ECG is recommended. The lack of left atrium enlargement indicates that the risk of future complication secondary to mitral valve insufficiency is relatively low. In a non-clinical patient without evidence of chamber enlargement, cardiac medications are not specifically indicated. Conservative monitoring of the murmur at this stage would be appropriate. Recheck echocardiogram is suggested in 6 months to assess for progression, sooner if clinical signs suggestive of heart disease arise.
<b>INTERPRETED BY</b>	
R. McKenzie Daniel, DVM, DABVP	
<b>IMAGING PERFORMED BY</b>	
Kelly Reschny	Although nonspecific, the liver nodule is suggestive of a focal lipogranuloma or hyperplasia with neoplasia considered a less likely potential. Sonographic monitoring for signs of progression would be appropriate.
<b>HOSPITAL NAME</b>	
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Dr. Dennis	In patients with chronic gastrointestinal signs, mild pancreatitis (which may present as sonographically normal), dysbiosis, dietary indiscretion / food hypersensitivity, inflammatory bowel disease, or less likely infiltrative Intestinal neoplasia are possible. Further assessment may include a GI panel to include PLI/TLI/Cobalamin/Folate, as well as fresh fecal analysis to assess for ova / giardia. Empirically, a limited antigen or hydrolyzed diet trial with potential long term dietary therapy, prophylactic deworming (Panacur 50 mg/kg SID x 5 consecutive days with repeat protocol in 3 weeks even if fecal testing is negative), high colony count probiotic (Provable or Visbiome), antibiotic trial and as needed gastrointestinal support with assessment of clinical response may prove beneficial. Intestinal biopsies may be indicated if GI signs continue despite empirical therapy.
<b>INVOICE</b>	
13110	Resting cortisol level could be considered to rule out occult Addison's Disease, although thought less likely.
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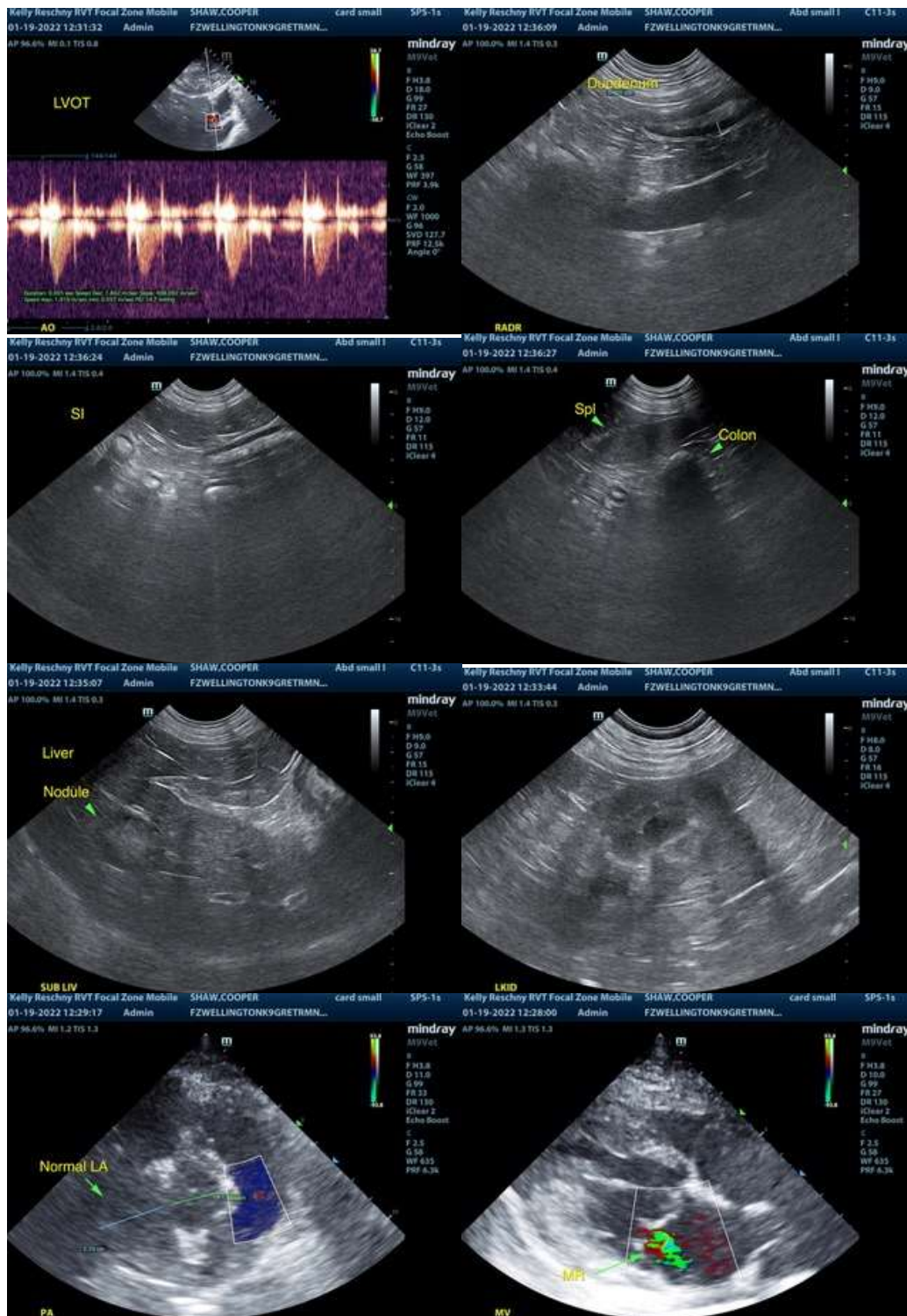
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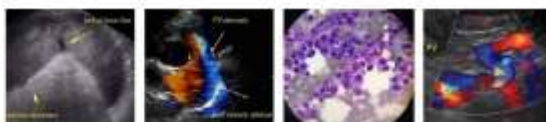
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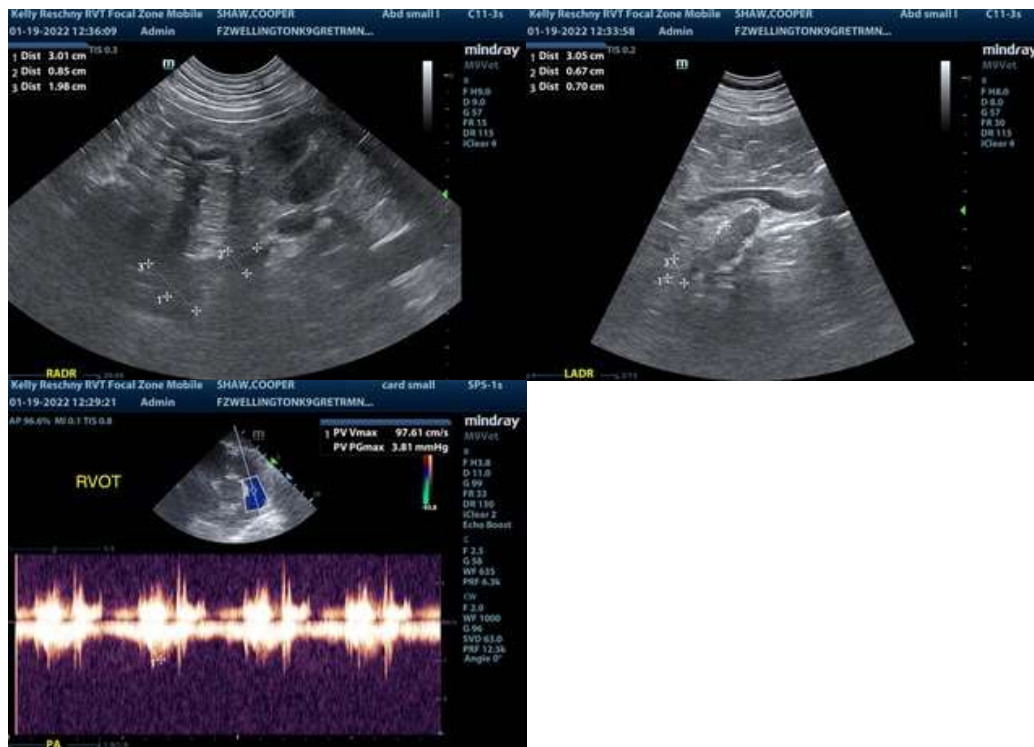
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)**  
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