

PATIENT

Peanut Rodriguez

SPECIES

Canine

BREED

Chihuahua

SEX

MN

AGE

13 yr

WEIGHT

6 lb

INTERPRETED BY

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

IMAGING PERFORMED BY

Sarah Pender CVT

HOSPITAL NAME

SVS Imaging QC

REFERRING VET

Dr. Haenni

INVOICE

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DATE

05/31/2022

PRESENTING CLINICAL SIGNS

History: Inappetence and lethargy, hx of dry hacking cough Owner hand feeds multiple small meals a day of people food Currently taking Enalapril 2.5mg 1/2 tab BID, Theophylline 75 flex tabs 1/2 tab BID Did eat some this morning

Abnormal PE/Chem/CBC/UA Results: CBC: WNL, CRE 0.3, ALT 418. Rest of chem WNL Radiographs show heart enlargement and hepatomegaly 3/6 murmur

ULTRASONOGRAPHIC EXAMINATION OF THE HEART AND ABDOMEN

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	5.9			1.36	52	87	0.18
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	90	1.0	0.85		2.6	2.5	

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 moderate eccentric 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 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.

**PATIENT****Urinary System**

Peanut Rodriguez

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra 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 was 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. Small cortical cysts were present in both kidneys. No evidence of pelvic dilation was present. The left kidney measured 4.1 cm in length. The right kidney measured 4.1 cm in length.

BREED

Chihuahua

The area of the aortic trifurcation was free of pathology.

SEX**Adrenal Glands**

MN

The bilateral adrenal glands were mildly enlarged in size exhibiting mild nonhomogeneous parenchyma. Pinpoint nonspecific hyperechoic foci noted bilaterally. The left adrenal gland measured 0.85 cm width at the caudal pole and 1.6 cm length. The right adrenal gland measured 0.97 cm width at the caudal pole and 1.8 cm length.

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Spleen**WEIGHT**

6 lb

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

The liver presented mildly enlarged in size. The parenchyma of the liver was subjectively normal in echogenicity compared to the spleen and renal cortices. The liver parenchyma was uniform with a mildly coarse echotexture. The capsule of the liver was symmetrically rounded to mildly swollen in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was distended in size with primarily anechoic luminal content and moderate congealed yet nonorganized luminal sludge. The cystic and common bile ducts were normal. No evidence of overt gallbladder inflammation.

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HOSPITAL NAME**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.

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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.

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

INVOICE**Pancreas**

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The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

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**PATIENT***Free Abdomen*

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No overt lymphadenopathy or peritoneal effusion was present.

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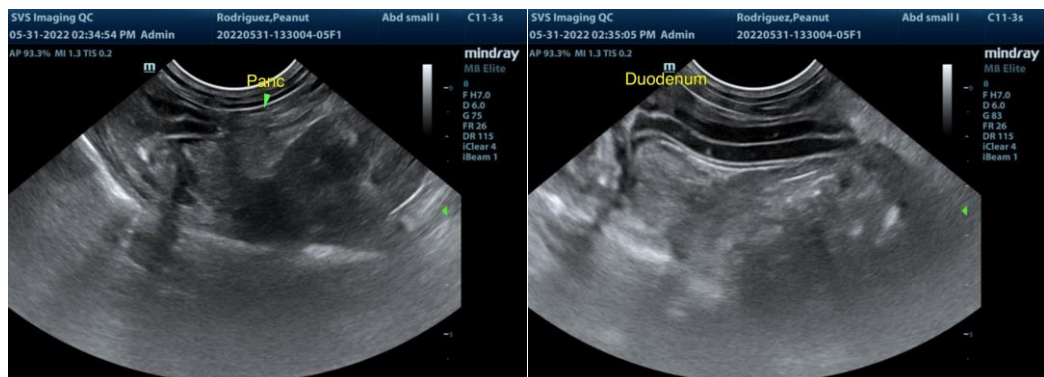
ULTRASONOGRAPHIC FINDINGS

- Chronic mitral valve disease (ACVIM B1)
- Moderate chronic renal changes with cortical cysts
- Mildly enlarged to irregular bilateral adrenal glands-benign hyperplasia, adenomatous changes, potential for early neoplastic criteria though less likely but cannot be excluded
- Pancreatic remodeling-likely age related changes
- Vacuolar hepatopathy pattern-subjectively benign
- Moderate congealed gallbladder debris-early to partial non inflamed gallbladder mucocele
- Overtly normal GI tract

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is consistent with chronic degenerative valvular changes with secondary eccentric mitral valve insufficiency. The lack of LA enlargement indicates that the risk of current and future complication is relatively low. No other clinical issues such as LV systolic dysfunction or evidence of clinical pulmonary hypertension were present. The coughing in this patient is not overtly consistent with cardiogenic origin. Consider possible primary lower airway disease. The prognosis at this stage is highly variable and serial sonographic monitoring is recommended for further prognosis. No overt indication for cardiac medications at this time. Assessment of BP recommended with discontinuation of Enalapril suggested if BP is <130. Recheck echo is suggested in 6 months, sooner if clinical signs of cardiac disease arise.

Although the patient's clinical signs are not overtly suggestive of Cushing's syndrome, a full adrenal workup could be considered if clinically indicated. If evidence of systemic hypertension, concern for possible emerging pheochromocytoma may be indicated. Monitoring for evidence of cranial abdominal or subxiphoid discomfort associated with the gallbladder or potentially the pancreas which may indicate low grade to chronic pancreatitis or progressive gallbladder mucocele recommended. Hepatosupportive medications including Denamarin and Ursodiol may prove beneficial.





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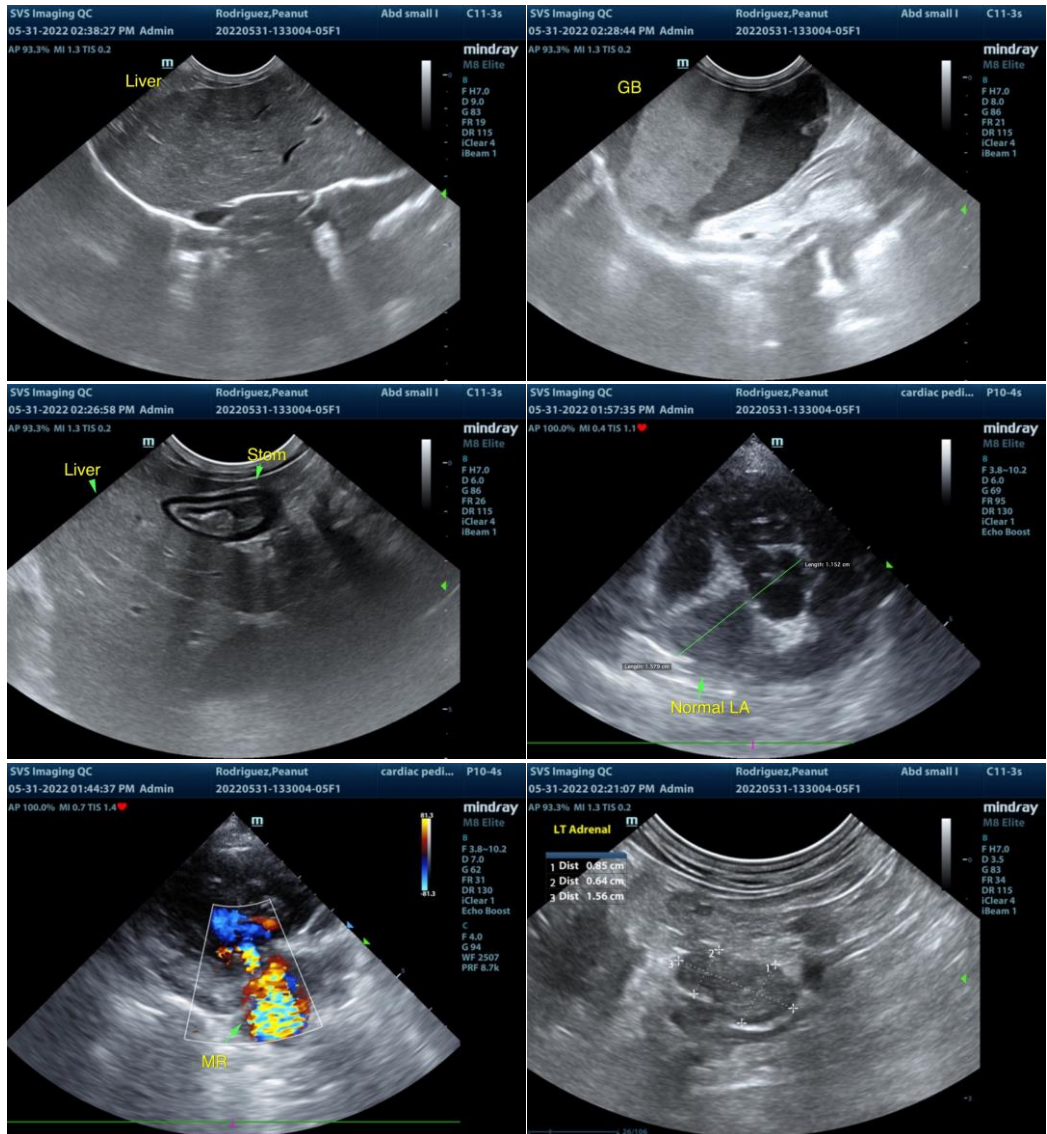
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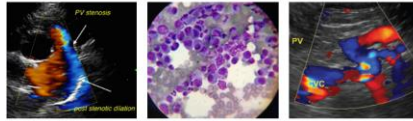
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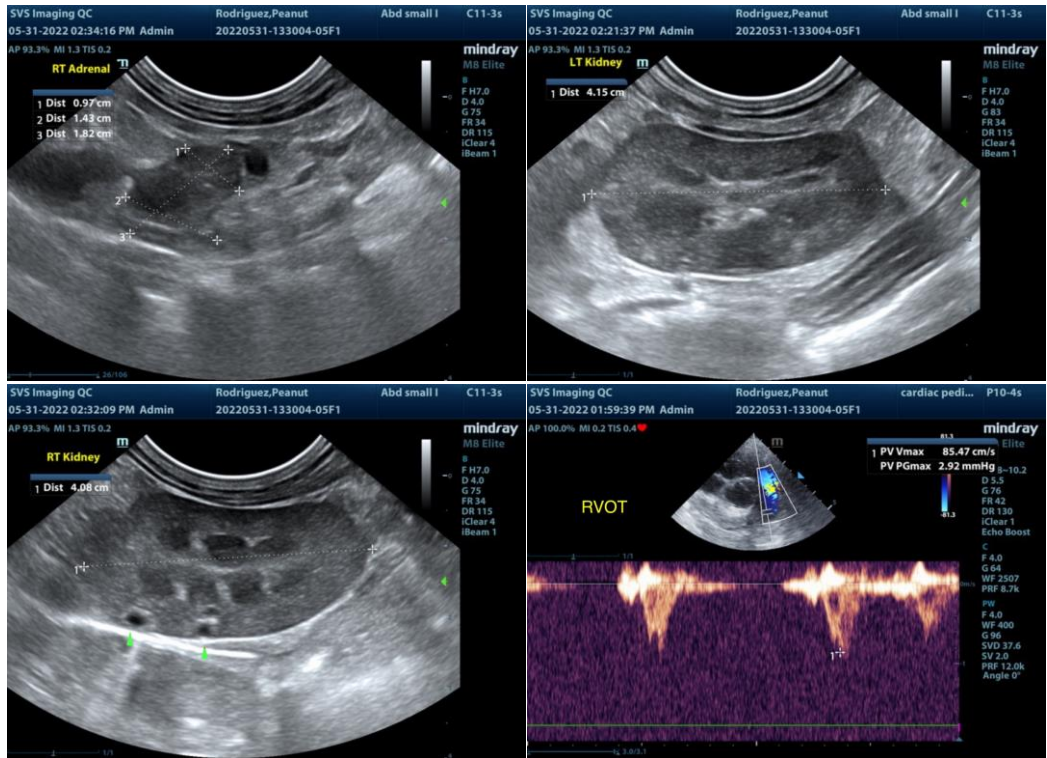
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)

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