



PATIENT

William Westfall

SPECIES

Canine

BREED

Chihuahua

SEX

NM

AGE

9 years

WEIGHT

14 lbs.

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

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DATE

2/8/22

PRESENTING CLINICAL SIGNS

Possible seizures and acting like he has no idea where he is.

Abnormal PE/Chem/CBC/UA Results: Pendulous abdomen, hepatomegaly, renal mineralization, rounded cardiac silhouette, TP 8.2, Alb 5.2, Glu 133, Alt 138, Cl 96, Wbc 5.62, Plt 524, Rbc 5.85, other in normal level. FNA performed of liver.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

CANINE	MR	TR	LA/AO	LA/AO	FS	EF	EPSS
CARDIAC PARAMETERS	VMAX (m/s)	VMAX (m/s)	(Boon method)	(Heart Base; Swe)	(%)	(%)	(cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT		2.0		1.5	36.3	67.7	0.2
CANINE	HR	AV	PV	BODY WEIGHT	LA	LVIDd	LVIDs
CARDIAC PARAMETERS	(BPM)	VMAX (m/s)	MAX (m/s)	(kg)	2D short axis Base view (cm)	Avg; 2D and m-mode short axis (cm)	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	106	1.3	0.85		2.86	2.9	

Cardiac Presentation

The echocardiogram in this patient demonstrated mildly enlarged **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 eccentric mitral valve 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 mild vegetative thickening with mild Insufficiency on color doppler assessment. 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***

William Westfall

The urinary bladder, trigone, and cystourethral junction 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

The area of the aortic trifurcation was free of pathology.

BREED

Chihuahua

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 mild loss of corticomedullary symmetry and definition expected for the age of the patient. Areas of mild nonobstructive medullary mineral were present in both kidneys. No evidence of pelvic dilation was present. The left kidney measured 5.0 cm in length. The right kidney measured 4.3 cm in length.

SEX

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Adrenal Glands**AGE**

9 years

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 1.6 cm length x 0.55 cm width at the caudal pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 2.0 cm length x 0.48 cm width at the caudal pole.

WEIGHT

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Spleen**INTERPRETED BY**

R. McKenzie Daniel,
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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. Potential yet nonspecific areas of increased splenic echogenicity, likely indicative of benign changes such as myelolipomas, were noted. 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.

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Liver/ Gallbladder**HOSPITAL NAME**

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The liver presented increased in size. The parenchyma of the liver was subjectively increased in echogenicity compared to the spleen and renal cortices. The echotexture of the liver parenchyma was uniform with a mild coarse echotexture. Small focal intraparenchymal cyst was present. The capsule of the liver was symmetrical in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non distended in size with echogenic, nonmineralized, non dependent biliary sludge. The biliary sludge was non organized with a hypoechoic to anechoic, irregular to interrupted rim visible between the nondependent sludge and inner wall. No signs of peripheral inflammation.

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Gastrointestinal**INVOICE**

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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.

**PATIENT**

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

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Pancreas**SPECIES**

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.

Canine

Free Abdomen**BREED**

No omental masses, lymphadenopathy or evidence of peritoneal effusion were present.

Chihuahua

ULTRASONOGRAPHIC FINDINGS**SEX*****Primary Findings***

NM

- Chronic mitral valve disease (ACVIM Early B2)
- Minor TR - estimated pulmonary pressure gradient not consistent with overt clinical pulmonary hypertension
- Mild nonobstructive renal mineralization
- Hepatomegaly exhibiting generalized parenchyma hyperechogenicity with focal small benign intraparenchymal cyst
- Early gallbladder mucocele

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**INTERPRETED BY**

The lack of significant left atrium enlargement indicates that the current risk secondary to mitral valve Insufficiency is relatively low. Other clinical issues such as systolic dysfunction or overt clinical pulmonary hypertension as potential causes of syncopal episodes were not present. Potential of paroxysmal arrhythmia cannot be definitively excluded. ECG assessment is warranted. Without evidence of significant left heart enlargement secondary to mitral valve insufficiency, cardiac medications are not specifically Indicated at this stage. Recheck echocardiogram is suggested in 6 months, sooner if clinical signs suggestive of heart disease arise.

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The appearance of the liver was nonspecific but may indicate steroid or other vacuolar hepatopathies, chronic hepatitis/cholangiohepatitis, lipidosis, or fibrosis while round cell hepatic neoplasia cannot be excluded. Assuming normal coagulation parameters, ultrasound guided FNA of the liver using a 25-gauge needle would be warranted for cytology, primarily to assess for evidence of inflammatory cells and to rule out round cell neoplasia. Vitamin K administration would be suggested prior to FNA if elected. Hepatic functionality is likely normal, given the normal glucose and albumin levels, while assuming normal BUN and cholesterol levels. Further assessment may include pending hepatic cytology.

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Although the bilateral adrenal glands were not overt enlarged, screening UCCR could be considered. Thorough neurological examination with potential for advanced imaging may be indicated.

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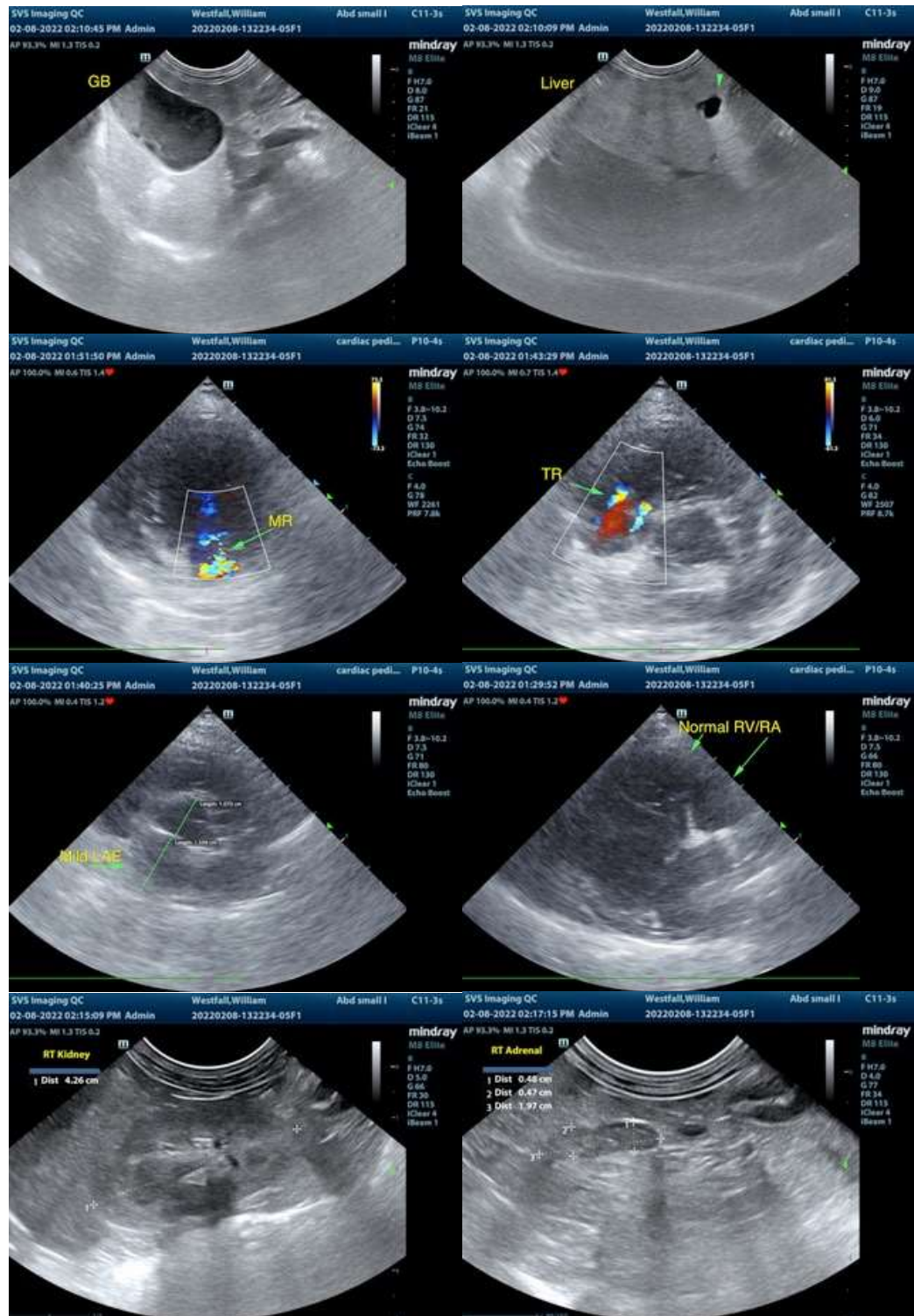
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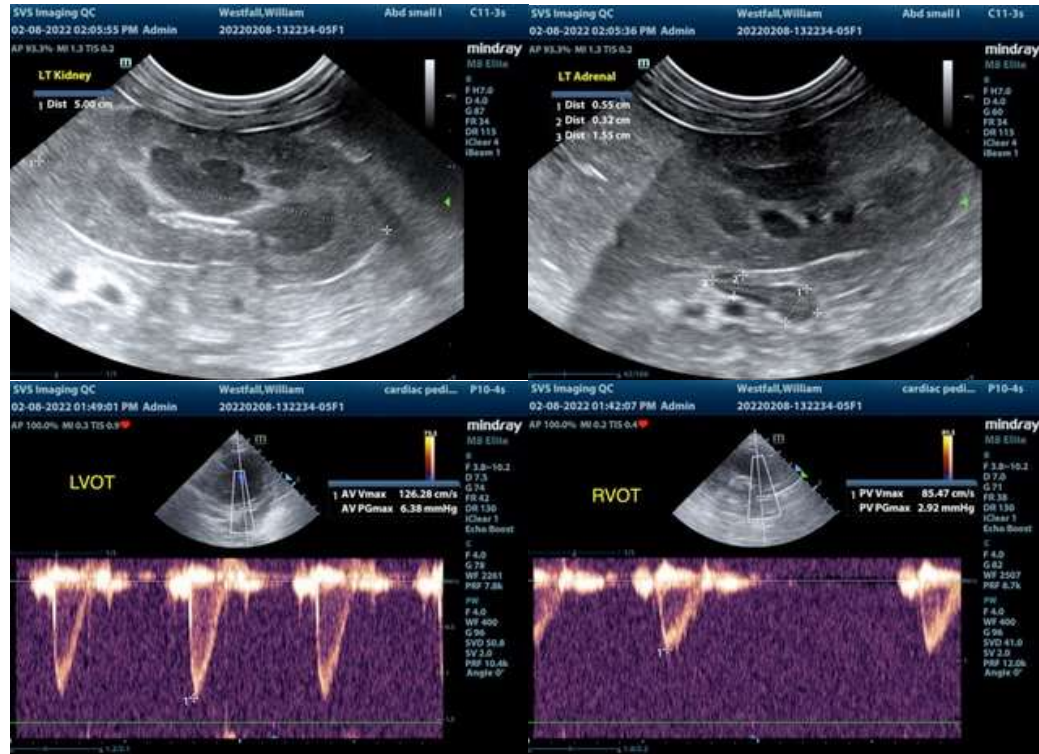
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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