


PATIENT

Thor Rovira

PRESENTING CLINICAL SIGNS

Worsening of heart murmur, collapse events, inappetence. No current meds.

Abnormal PE/Chem/CBC/UA Results: ALP 591 (140 H); Glu 138 (125 H); Neut 14.53 (12.30 H)

SPECIES

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART
BREED

Chihuahua

SEX

MN

AGE

12yr

WEIGHT

25lb

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	5.0	5.3	1.3	1.24	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				
PATIENT	134	1.1	20.		1.7	1.7	

Cardiac Presentation

The mitral valve was mild to moderately thickened without overt prolapse consistent with endocardiosis. Moderate eccentric mitral regurgitation was present. Normal measured MR velocity. Normal LA dimension without evidence of volume overload. No LV dilation was present. LV systolic function is adequate. Subjective flattening of the IVS was present. Normal systolic flow across the aortic valve with normal measured LVOT velocity was present. The main pulmonary artery was mildly dilated. Moderate RA and ventricular enlargement noted. The tricuspid valve was thickened with moderate to significant TR on Doppler. Measured TR velocity consistent with severe pulmonary hypertension (>100 mmHg). Concurrent mild pulmonic insufficiency measuring ~ 2.2 m/s diastolic velocity. No evidence of aortic insufficiency. No pericardial or overt free pleural fluid. No overt cardiac tumors.

INTERPRETED BY

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

IMAGING PERFORMED BY

Shari Reffi CVT

HOSPITAL NAME

Newton Vet

REFERRING VET

Dr. Verhalen

INVOICE

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DATE

01/31/2023

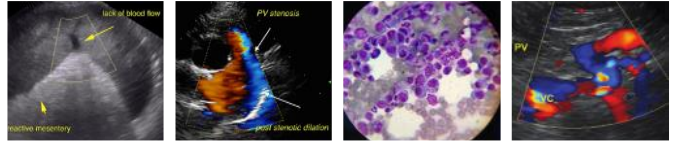
Urinary System

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.

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 evidence of pelvic dilation was present. The left kidney measured 4.2 cm in length. The right kidney measured 4.4 cm in length.

The area of the aortic trifurcation was free of pathology.

Adrenal Glands



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The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.77 cm width at the caudal pole and 0.59 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 0.55 cm width at the caudal pole and 0.61 cm width at the cranial pole.

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Canine

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.

BREED

Chihuahua

Liver/Gallbladder

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. No masses or nodules noted. The capsule of the liver was symmetrical in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion. Overtly normal abdominal caudal vena cava volume. The gallbladder was non-distended in size with potential for scant wall edema was present. Mild echogenic gallbladder debris was present. The cystic and common bile ducts were normal.

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Transdiaphragmatic view revealed comet tail lung pattern, which is echogenic sound wave interface with microconsolidations within the caudal lung field. The lung field should not be visualized by sonogram unless pathology is present. Chest radiographs are recommended to rule out alveolar/lung disease such as neoplasia, thromboembolic disease, chronic inflammatory disease with microconsolidation.

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Gastrointestinal

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.

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.

IMAGING PERFORMED BY

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Pancreas

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.

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Free Abdomen

No omental masses, overt lymphadenopathy or peritoneal effusion was present.

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- Severe pulmonary hypertension with RA/RV enlargement
- Pulmonic insufficiency
- Compensated MR, normal LA
- Benign hepatopathy without overt congestive criteria-suspect vacuolar hepatopathy
- Mild gallbladder debris, possible gallbladder wall edema

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- Moderate chronic renal changes, normal bilateral adrenal glands-no adrenal tumors
- Transdiaphragmatic comet tail artifact

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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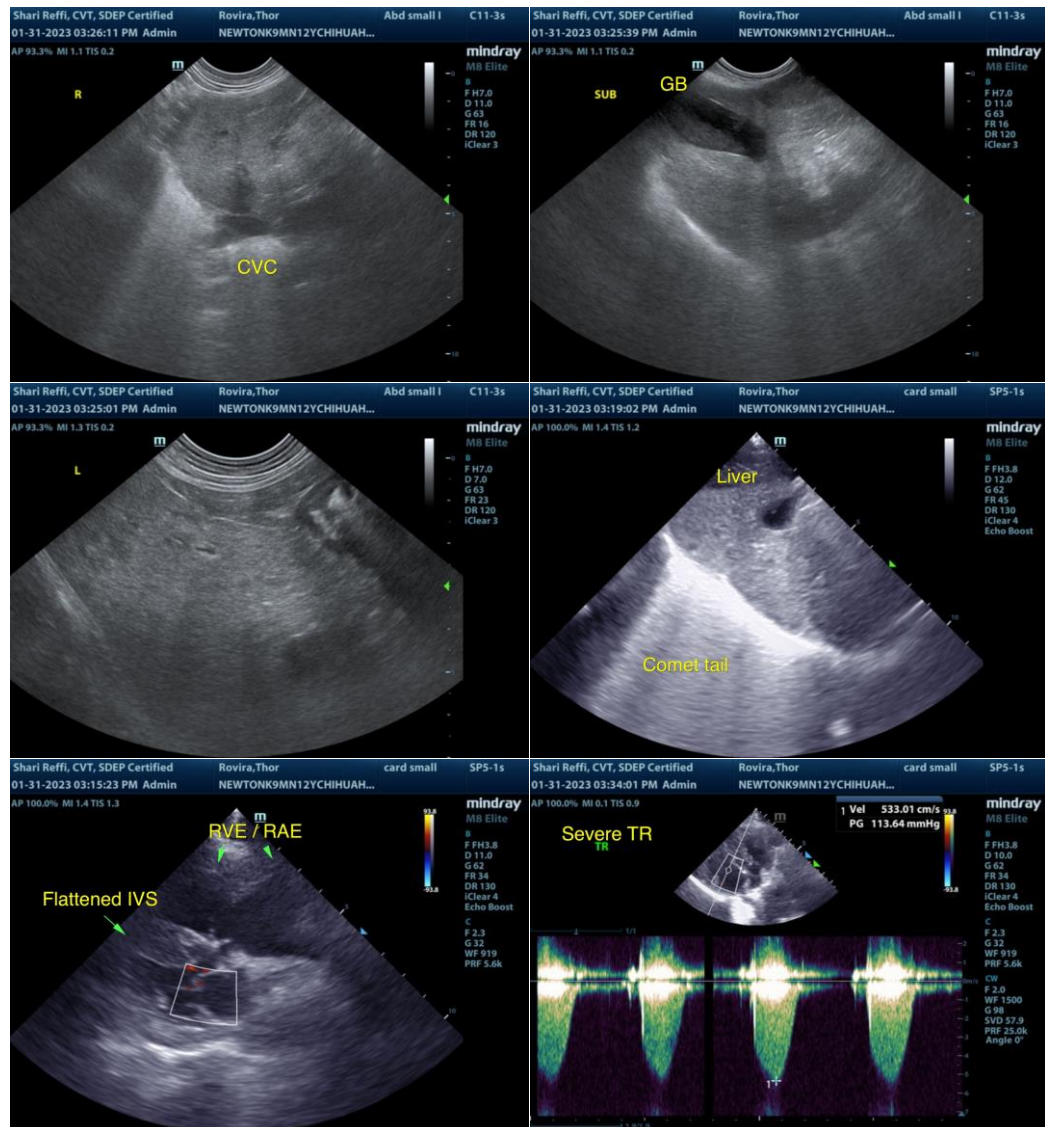
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The severe pulmonary hypertension may be poorly understood in cases other than heart worm infestation, it is sometimes associated with a variety of forms of chronic lung disease with concurrent RA/RV enlargement and puts this patient is at significantly increased risk for right sided congestion/RHF, syncope and/or sudden death. Overall, an extremely guarded to poor long term prognosis is indicated. Cardiac medications with assessment of clinical response are recommended. Sildenafil 1-2 mg/kg PO BID - TID, Pimobendan 0.25 - 0.3 mg/kg PO BID +/- low dose diuretic therapy if evidence of emerging right sided congestion i.e., ascites with as needed respiratory support and anti-tussive medications is recommended. Exercise restriction is advised. Recheck echocardiogram is recommended in 3-4 months, sooner if clinical signs consistent with progressive right sided CHF are noted.





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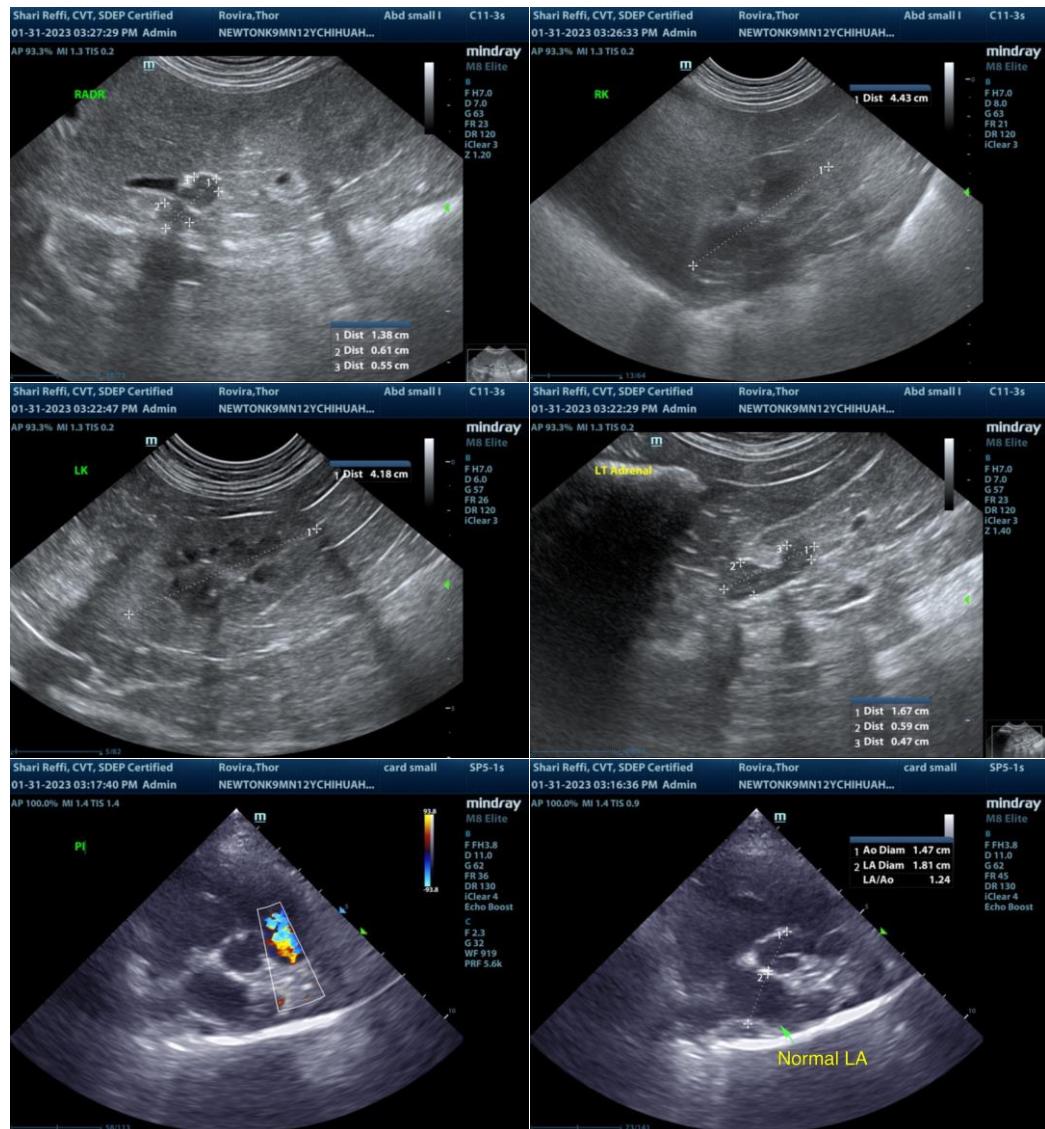
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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