



**PATIENT PRESENTING CLINICAL SIGNS**

Vince Kistle Intermittent anorexia, suspected urinary issues and cardiomegaly. Current meds: Doxycycline 100mg, Prednisone 5mg, metoclopramide.  
**SPECIES** Abnormal PE/Chem/CBC/UA Results: BUN 35, ALT 373, AKLP 1151, WBC 30.68, Neu 25.53, mono 3.44, rod 0.05, MPV 17.4  
 Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

**BREED**

Jack Russell Terrier

**SEX**

Intact Male

**AGE**

16 Years

**WEIGHT**

18 Pounds

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	3.9	NM	1.2	45	79.8	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				
PATIENT	125	1.5	1.0		2.2	2.1	

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Shari Reffi, CVT

**HOSPITAL NAME**

Animal General

**REFERRING VET**

Dr. Castimore

**INVOICE**

34350

**DATE**

1/19/22

**Cardiac Presentation**

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable 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 increased size compared to the left atrium with anechoic content. No overt evidence of masses. **Tricuspid** valvular assessment demonstrated concurrent vegetative thickening with normal kinesis. Moderate insufficiency was present on color doppler assessment. The **right ventricle** exhibited increased size compared to the left ventricle with normal myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx. 1:1 pa/ao ratio). No overt 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 3.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen. A solitary, dependent cystic calculus was present in the bladder. The calculus measured 1.5 cm diameter. The ureteral papillae



<b>PATIENT</b>	were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.
Vince Kistle	The area of the aortic trifurcation was free of pathology.
<b>SPECIES</b>	The prostate was enlarged in size with intact, symmetrical capsule contour. The margins of the gland were intact and able to be differentiated from the surrounding tissue. The prostatic parenchyma was mildly echogenic to heteroechoic without parenchymal mineralization. The prostate measured 2.9 cm diameter. Anechoic, thinly walled parenchyma cysts were present.
Canine	
<b>BREED</b>	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 4.6 cm. The right kidney measured 5.0 cm.
Jack Russell Terrier	
<b>SEX</b>	<b>Adrenal Glands</b>
Intact Male	The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 2.3 cm length x 0.63 cm at the caudal pole. The right adrenal gland measured 1.5 cm length x 0.64 cm at the caudal pole.
<b>AGE</b>	<b>Spleen</b>
16 Years	The spleen was normal in size with mild generalized parenchymal heterogeneity. A solitary, mildly expansive, hypoechoic nodule was noted in the mid lateral spleen with associated capsule distortion, yet without evidence of capsule escape, measuring 0.86 cm. 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.
<b>WEIGHT</b>	<b>Liver</b>
18 Pounds	The liver presented enlarged in size with symmetrical yet swollen contour. The parenchyma exhibited conserved uniform parenchyma with normal echogenicity isoechoic to the spleen and falciform fat. The hepatic vasculature was dilated in appearance, most notable at the level of the hepatic vein / caudal vena cava junction, without evidence of thrombosis. A solitary, non-expansive, discreet, hypoechoic parenchymal nodule was present in the mid liver. The gallbladder was non distended in size with mild, echogenic, nonmineralized biliary sludge. The cystic duct and common bile ducts were normal without evidence of dilation. Potential for very minimal gallbladder wall edema, although not definitive.
<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 was empty with no signs of ileus, obstruction or foreign material.
<b>IMAGING PERFORMED BY</b>	<b>REFERRING VET</b>
Shari Reffi, CVT	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.
<b>HOSPITAL NAME</b>	Normal visible colon wall layers were present with apparent formed feces in lumen.
Animal General	<b>Pancreas</b>
<b>INVOICE</b>	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*

Vince Kistle Generalized reactive mesentery noted. Small volume peritoneal free fluid present. No overt lymphadenopathy.

**SPECIES** **ULTRASONOGRAPHIC FINDINGS**

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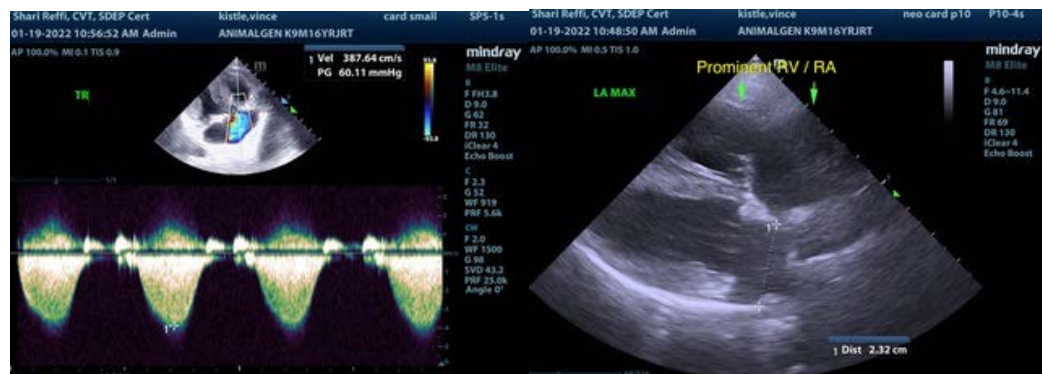
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- Moderate pulmonary hypertension
- Moderate RA/RV enlargement – suggestive of cor pulmonale
- Concurrent compensated chronic mitral valve disease (ACVIM B1)
- Normal left atrium
- Hepatomegaly exhibiting evidence of hepatic congestion and non-specific intraparenchymal nodule
- Solitary cystic calculus
- Prostatomegaly exhibiting cystic parenchyma – benign prostatic hyperplasia with parenchymal cysts suspected, potential for prostatitis.
- Non-specific, mildly expansive splenic nodule
- Small volume ascites and generalized reactive mesentery

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The estimated pulmonary pressure gradient based on measured tricuspid valve insufficiency, consistent with moderate pulmonary hypertension. The underlying etiology of pulmonary hypertension is often unclear. However, this appears to be causing secondary RA/RV enlargement and probable hepatic congestion, consistent with right heart failure. Sildenafil at 1 mg/kg PO BID with target dose of 1-3 mg/kg PO BID is recommended. Exercise restriction advised with continued monitoring for evidence of increasing signs of right heart failure. Potential intermittent abdominocentesis may be required in this patient. Pimobendan 0.3 mg/kg PO BID could also be considered as adjunctive therapy.

Going forward, this patient would be at continued risk for syncope, congestive right heart failure, and potential sudden death. Correlation with abdominal effusion analysis could be considered. Assuming normal clotting status, ultrasound guided hepatosplenic nodule FNA (if accessible) warranted for screening cytology. Continued as needed gastrointestinal supportive care recommended.





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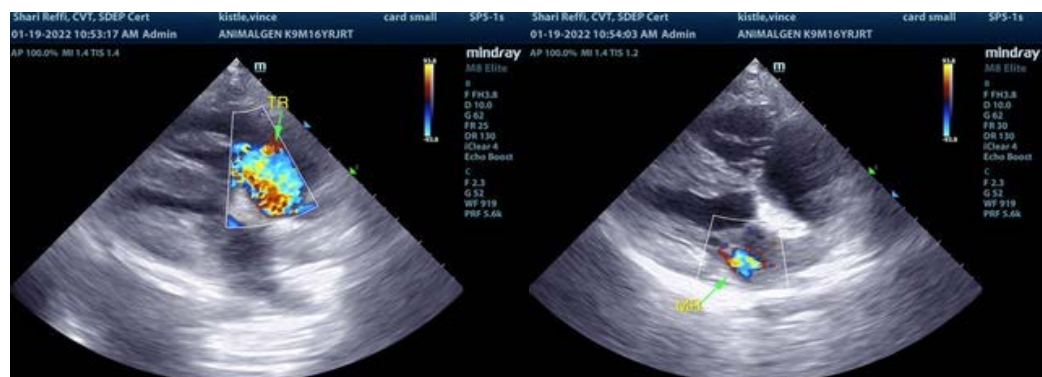
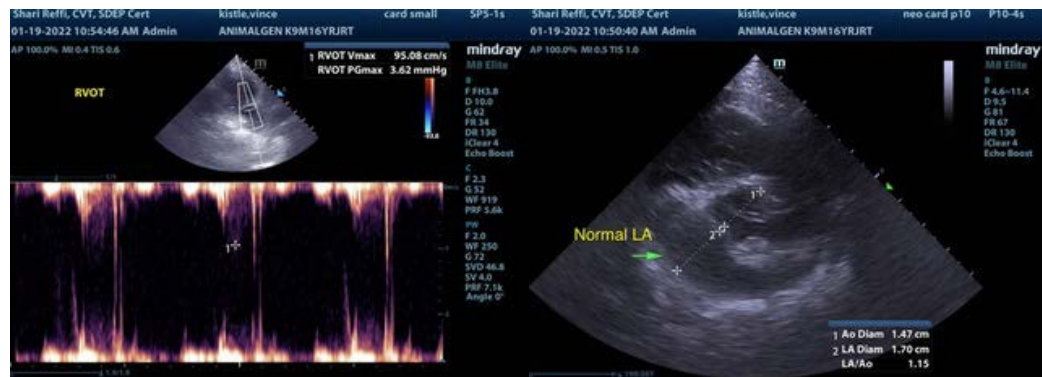
Dr. Castimore

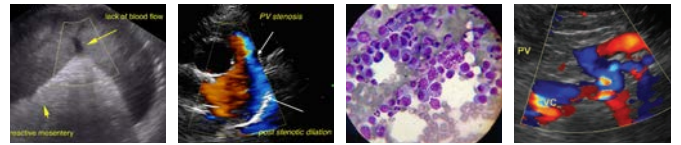
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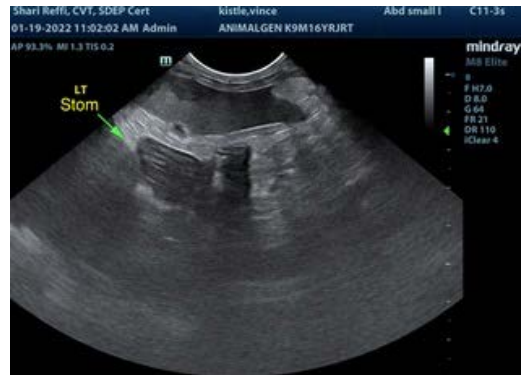
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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info@SonoPath.com