



PATIENT

Midas Macintosh

SPECIES

Canine

BREED

Labradoodle

SEX

MN

AGE

9 years

WEIGHT

84.4 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Shari Reffi, DVT

HOSPITAL NAME

Newton Vet

REFERRING VET

Dr. Kim

INVOICE

14437

DATE

7/28/22

PRESENTING CLINICAL SIGNS

Anemia, auto-agglutination, thrombocytopenia, lethargy, anorexia, elevated Tbili, Lyme +. Current meds: Doxycycline 10mg/kg bid, DexSP 11.4mg q24h.

Abnormal PE/Chem/CBC/UA Results: WBC 28.35(17H); NEUT 24.84; RBC 18.2 (33L); MCV 78.2 (76H); PLT 94 (117L); GLOB 3.9 (3.6L); ALP 547 (140H); K 3.5 (3.8L); LYME +

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	<1.3	28-40	40-100	<0.6
PATIENT			1.3	1.3	44.5	76.3	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				
PATIENT	156	1.65	1.5		5.0	4.1	

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. 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. Mild aortic insufficiency was present on doppler. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonary outflow** tract assessment revealed normal valve structure, laminar flow, and diameter (approx. 1:1 pa/ao ratio). Mild pulmonary Insufficiency was present on doppler. No visible **pericardial** or free pleura fluid was noted. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window.



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Urinary System

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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.

BREED

Labradoodle

The area of the iliac trifurcation was free of pathology including no evidence of medial Iliac or sublumbar lymphadenopathy/masses, as well as no evidence of thrombus at the level of the iliac trifurcation.

SEX

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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 7.9 cm in length. The right kidney measured 7.7 cm in length.

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Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 3.0 cm length x 0.59 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 3.2 cm length x 0.73 cm width at the caudal pole.

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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. No evidence of splenic masses or nodules was noted.

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Liver/ Gallbladder

The liver presented 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 non-distended in size with mild gallbladder debris. The gallbladder and peripheral gallbladder were otherwise normal. The cystic and common bile ducts were normal.

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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.

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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SPECIES	<i>Pancreas</i>
Canine	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.
BREED	
Labradoodle	<i>Free Abdomen</i>
SEX	No omental masses, lymphadenopathy, or evidence of peritoneal effusion were noted. Echogenic mobile spontaneous contrast was present in the caudal vena cava at the level of the right kidney, liver, and diaphragm. Doppler assessment of the cranial abdominal caudal vena cava revealed adequate laminar and subjectively normal blood flow cranially. No overt evidence of obstructive caudal vena cava thrombus.
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R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	<ul style="list-style-type: none"> • Normal echocardiogram • Mild aortic and pulmonic valve insufficiencies - not considered clinically significant • Vacuolar hepatopathy pattern • Normal spleen • Echogenic spontaneous contrast within the caudal vena cava at the level of the right kidney, liver, and diaphragm • Overtly normal kidneys
IMAGING PERFORMED BY	
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HOSPITAL NAME	<u>INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS</u>
Newton Vet	No overt evidence of definitive cardiac or intraabdominal pathology i.e., neoplasia, as an underlying cause or obvious contributing factor to the patient's potential Immune-mediated anemia / thrombocytopenia. Potential for emerging hypercoagulable state is possible, given the presence of spontaneous contrast within the caudal vena cava, yet no overt evidence of obstructive thrombus formation at this time was present.
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Dr. Kim	Full urinary workup including baseline UPC is recommended given the history of Lyme positive test. No indication for cardiac medications. The minor valvular insufficiencies are potentially secondary to anemia. Some or all of the following protocol may be considered including potential addition of Plavix therapy, given the possibility of hypercoagulable state. Clotting status is suggested.
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DATE	<i>(Note: ensure no underlying neoplasia as IMHA/Evans syndrome can occur as paraneoplastic manifestation especially in lymphoma/round cell neoplasia)</i>
7/28/22	Anemia +/- thrombocytopenia with spherocytes/autoagglutination in dogs and hyperbilirubinemia, bilirubinuria. (NOTE: cats do not get spherocytes in IMHA)



PATIENT

Consider Onion/Garlic derivative ingestion if Heinz bodies present.

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Prednisone (K9) Prednisolone (Feline): 2 mg/kg Sid/Bid initially x 3 weeks then attempt taper

SPECIES

Aspirin 0.5 mg/kg Sid owing to hypercoagulable state

Sucralfate 0.5-1 g po tid dogs, 0.5 g bid cats in slurry

Canine

Doxycycline if infectious suspected clinically or based on CBC path review:

Dogs, Cats: 10 mg/kg p.o. q24h with food or water bolus in cats

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Long-term management dogs: Azothiaprine 2 mg/kg Sid or Cyclosporine 10mg/kg po sid bid

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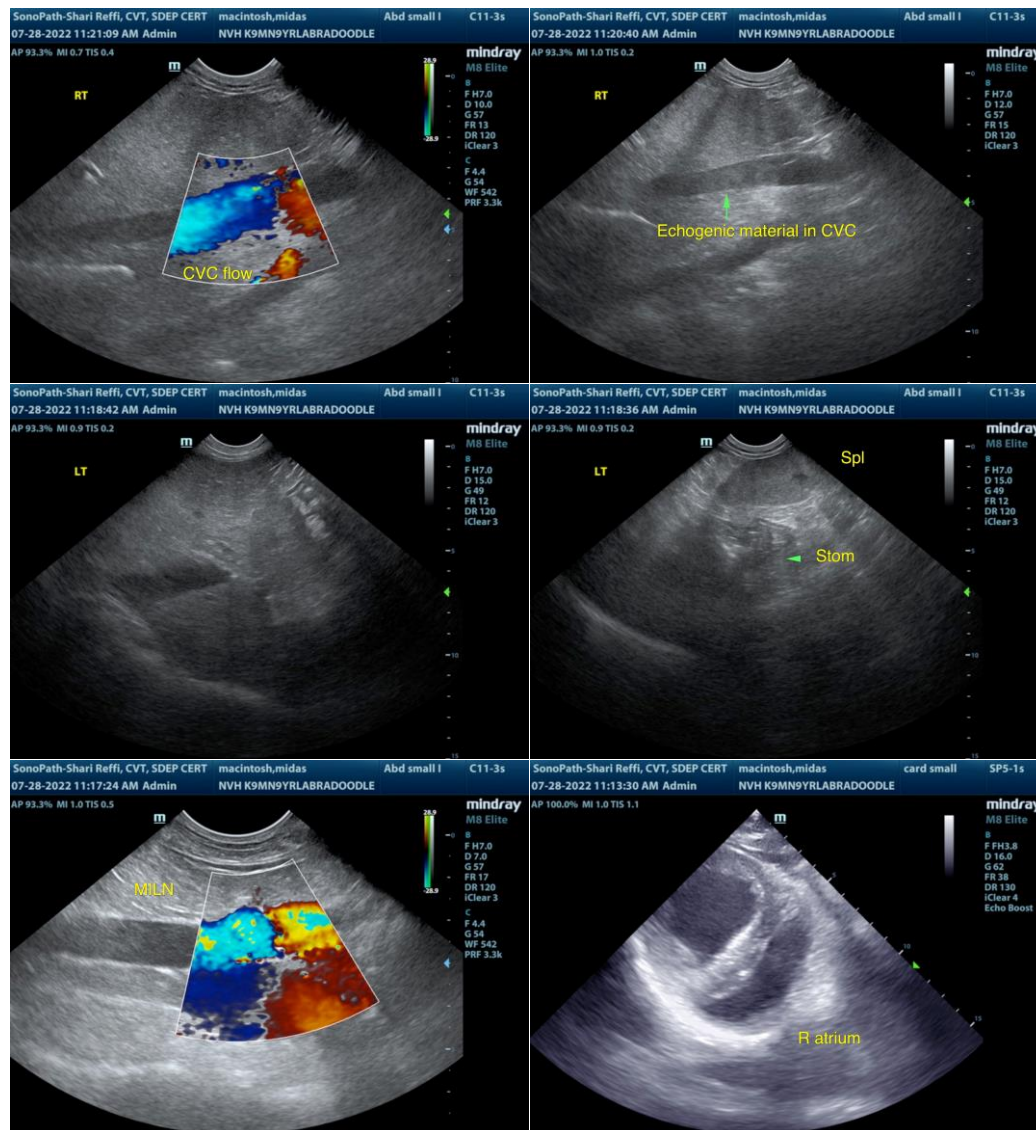
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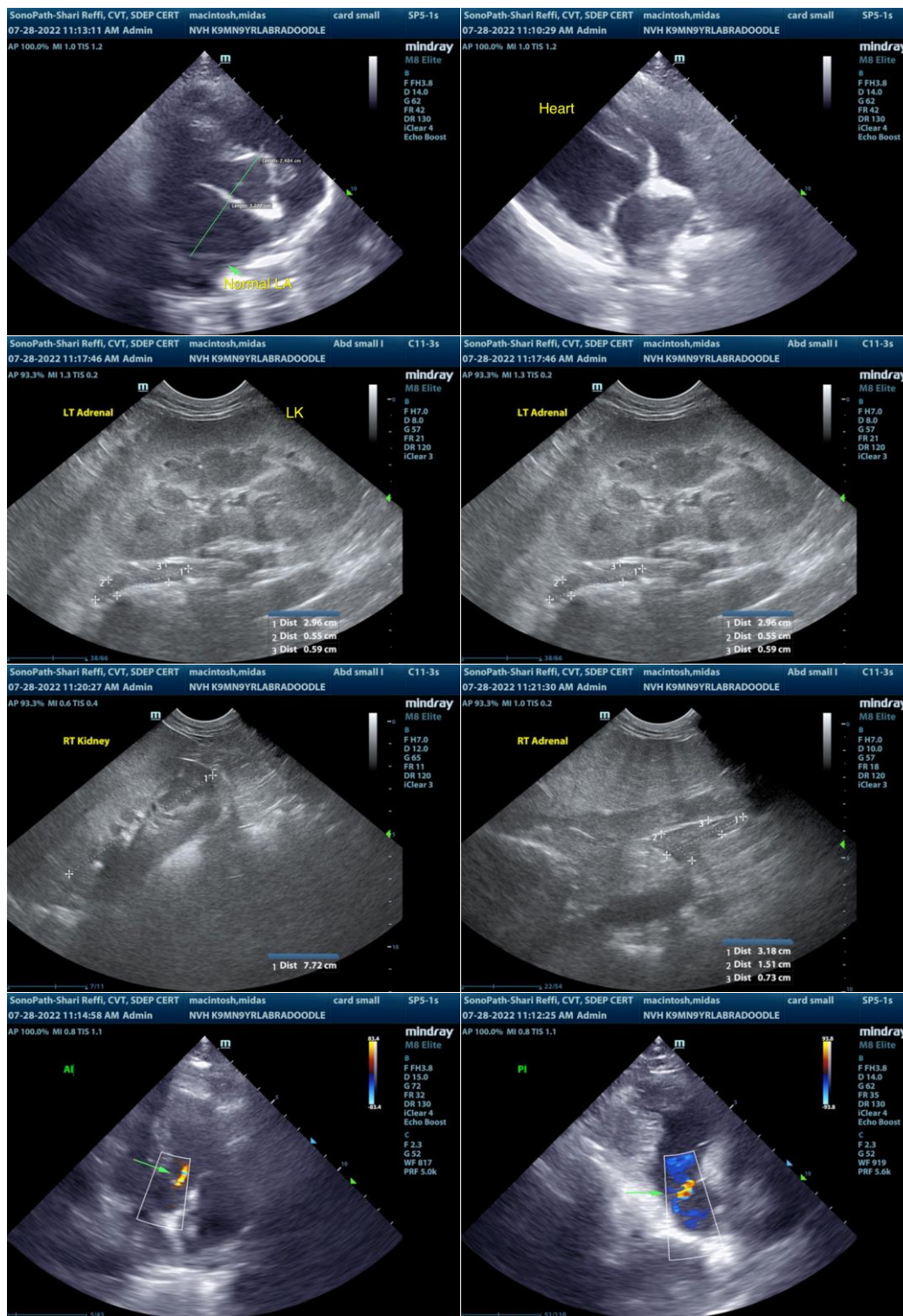
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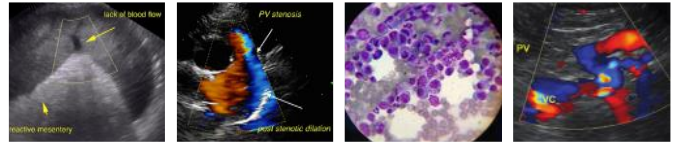
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.



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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

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