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Clinical Sonography & Telecytology
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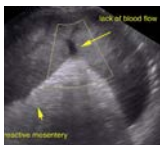
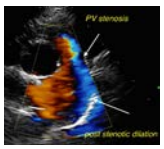
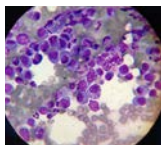
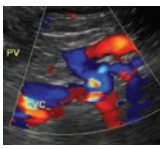

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1-800-838-4268 info@sonopath.com

PATIENT
Otto Dill

SPECIES
Canine

BREED
Terrier X

SEX
Intact Male

AGE
1.5 Years

WEIGHT
10.4 Pounds

INTERPRETED BY
Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Shari Reffi, CVT

HOSPITAL NAME
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REFERRING VET
Dr. Barron

INVOICE
35784

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2/22/22

PRESENTING CLINICAL SIGNS

Grade III/VI systolic murmur, PMI pulmonary valve and TV. HW +, significant hematuria, suspect free fluid in abdomen. Current meds: Unasyn IV 22mg/kg otherwise none

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & 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	<1.6	28-40	40-100	<0.6
PATIENT			1.07	1.11	27	56	0.24
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	BELOW	BELOW	BELOW	BELOW
PATIENT	122	96	--		2.0	2.01	

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. The **right ventricle** presented multiple adult heartworms as well as visible adult heartworm in the deep pulmonary artery. Secondary **pulmonic** insufficiency noted. Hepatic veins were not dilated. No evidence of right sided failure. 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.

Urinary System

The **urinary bladder** presented a minor amount of debris, unremarkable otherwise.

The prostate revealed minor edema lines, suspicious for prostatitis. The prostate measured 1.55 cm.

The **kidneys** revealed normal size and structure, corticomedullary definition and ratio for this age. The cortices presented largely uniform texture with normal echogenic relationship to liver and spleen. The medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities. The left kidney measured 3.8 cm. The right kidney measured 3.79 cm.

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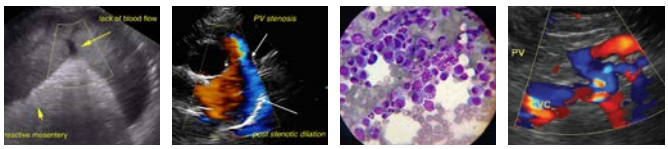

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Adrenal Glands

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 1.54 cm x 0.42 cm at the cranial pole and 0.44 cm at the caudal pole. The left adrenal gland measured 1.54 cm x 0.49 cma t the cranial pole and 0.47 cm at the caudal pole.

Spleen

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted.

Liver

The **liver** images submitted revealed subjectively normal liver size, contour, and structure. Parenchymal echogenicity was naturally coarse and hypoechoic to the spleen. Vascular and biliary tracts were of normal volume with no evidence of congestion. The gallbladder wall was slightly edematous. Minor polypoid changes noted.

Gastrointestinal

Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

Pancreas

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

ULTRASONOGRAPHIC FINDINGS

- Compensated heartworm burden in right ventricle and deep pulmonary artery (approximately 3-5 adult heartworms)
- Secondary pulmonic insufficiency
- Potential prostatitis
- Minor gallbladder debris

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

At least 3-5 visible heartworms appear to be present. Basket retrieval or slow kill approach recommended. More adult worms may be present in the deep pulmonary vasculature. The heart appears compensated at this time. Recheck echo in 3 months, earlier if any clinical signs initiate. No evidence of right-sided failure.

Prostatitis or UTI suspected to be the cause of hematuria. However, coagulation panel warranted to ensure that the hematuria is not a manifestation of underlying coagulopathy. Urine culture and sensitivity warranted if any inflammatory sediment is present in the urine.

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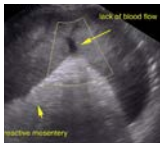
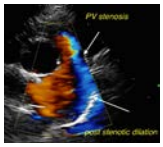
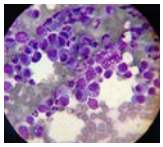
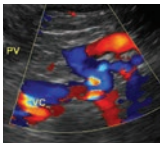

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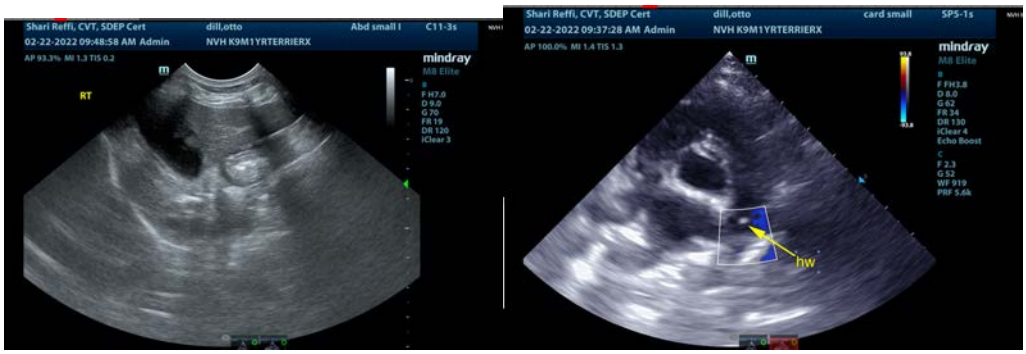

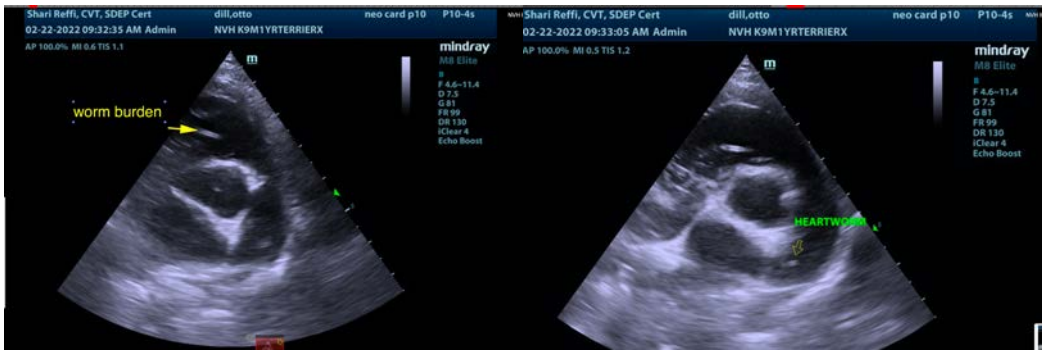

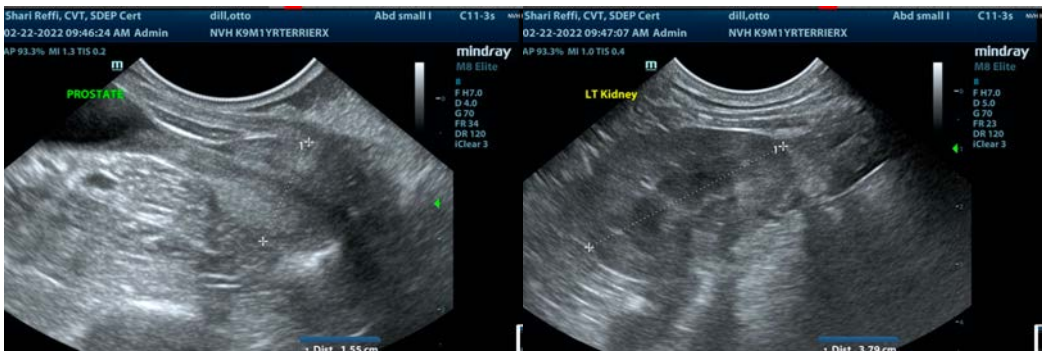

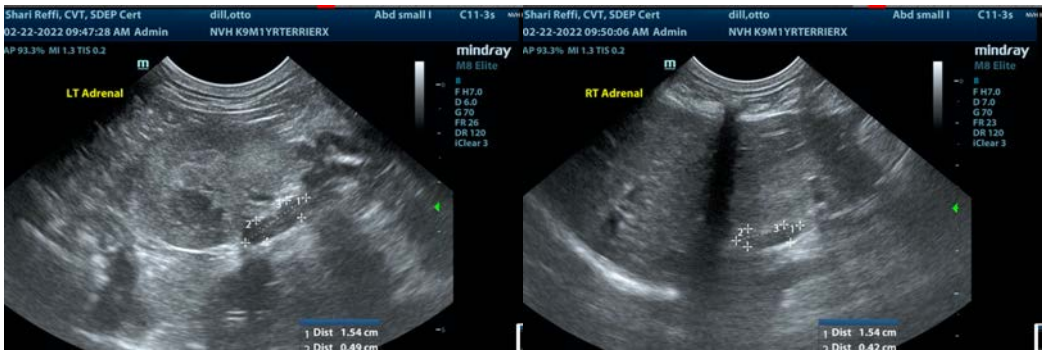

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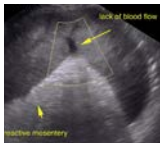
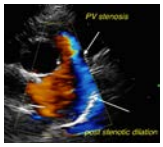
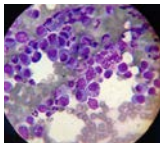
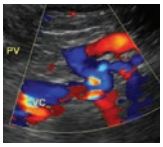

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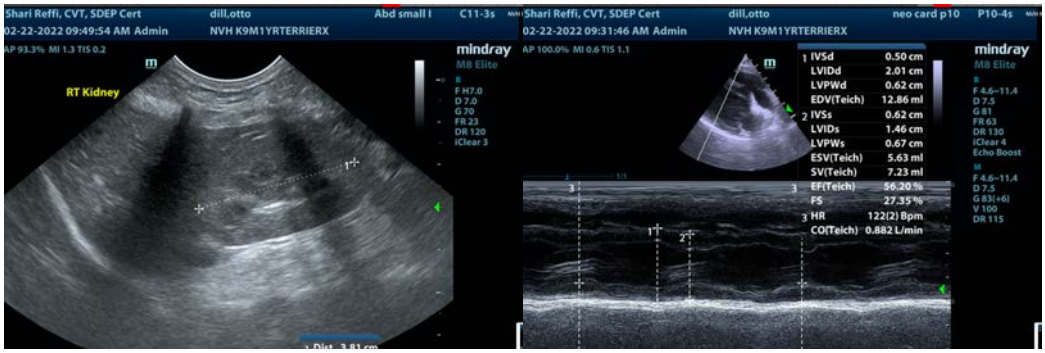

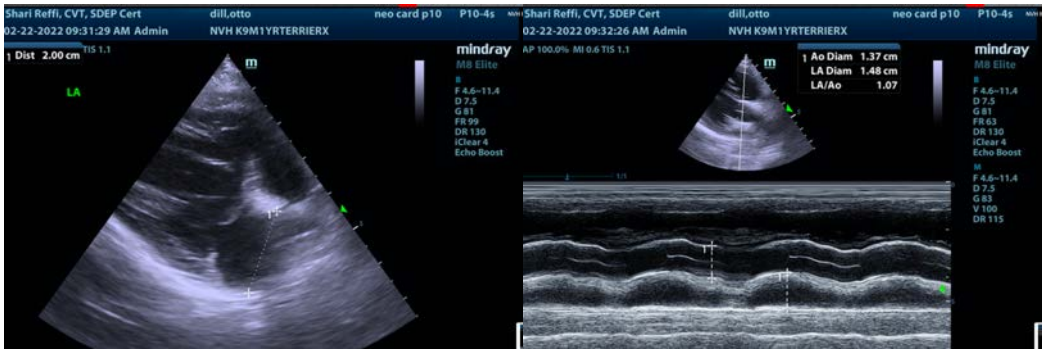

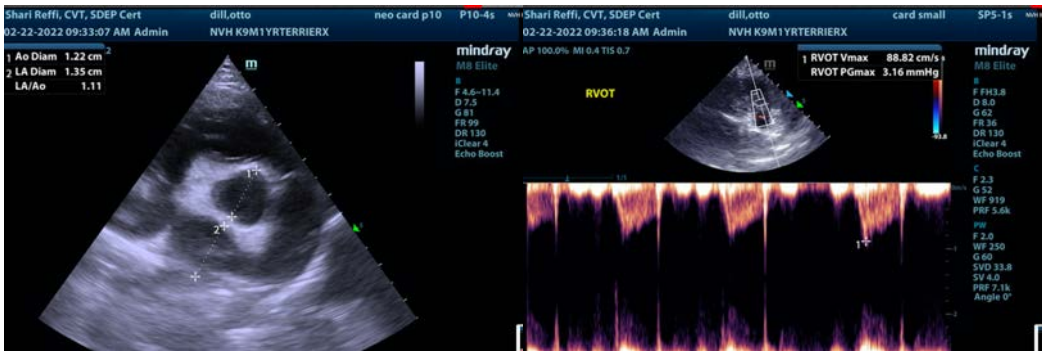

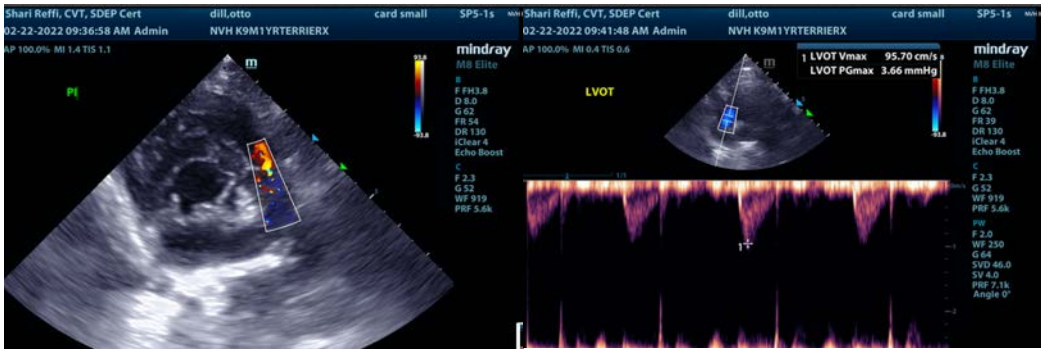

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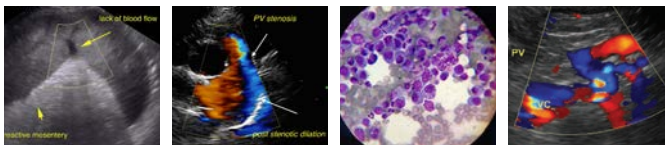

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com

info@SonoPath.com